

Paper 001-2013

Floating on Cloud 9.3: Leveraging the Cloud with SAS® and Google Drive

William Roehl, MarketShare

ABSTRACT

Our organization has been utilizing Google Drive (previously Google Docs) to keep project documentation centrally located for ease of access by any user on any platform. Up to this point, SAS® developers had to manually import or export data sets to or from flat files or Microsoft Excel in order to update data stored in the cloud.

This paper provides a powerful macro toolkit that facilitates direct access to Google Spreadsheets through its published API, allowing uploading, downloading, deletion, and live data manipulation of cloud-based data. This provides an opportunity for a significant reduction in the amount of manual work and time required for SAS developers to perform these basic functions.

Code was developed with SAS 9.3 and HTMLTidy (25MAR2009) running under Microsoft Windows 7.

No paper was submitted for publication.

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Paper 004-2013

Fueling the Future of an Energy Company

Stijn Vanderlooy, EDF Luminus

ABSTRACT

EDF Luminus is a producer and supplier of energy in Belgium. The company is active in several markets for trading commodities (including electricity, natural gas, and oil-related products). The market data modeling team is responsible for all information related to these markets. Besides a daily collection and verification of all the published prices, the team is responsible for a diverse set of transformations and manipulations of these data. Examples are numerous and include volatility estimation and price forecasts. In this paper we present a successful application of a SAS® tool developed in-house that is used by the market data modeling team to support its core tasks. The tool runs autonomously three times a day.

No paper was submitted for publication.

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Paper 005-2013

Macro Quoting to the Rescue: Passing Special Characters

Art Carpenter, CA Occidental Consultants
Mary Rosenbloom, Edwards Lifesciences, LLC

ABSTRACT

We know that we should always try to avoid storing special characters in macro variables. We know that there are just too many ways that special characters can cause problems when the macro variable is resolved. Sometimes, however, we just do not have a choice. Sometimes the characters must be stored in the macro variable whether we like it or not. And when they appear we need to know how to deal with them. We need to know which macro quoting functions will solve the problem, and even more importantly why we need to use them. This paper takes a quick look at the problems associated with the resolution and use of macro variables that contain special characters such as commas, quotes, ampersands, and parentheses.

No paper was submitted for publication.

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Paper 007-2013

Line-Sampling Macro for Multistage Sampling

Charley Jiang, University of Michigan
James Lepkowski, University of Michigan
Richard Valliant, University of Michigan
James Wagner, University of Michigan

ABSTRACT

In the SAS® world, one tool, PROC SURVEYSELECT, is widely used for probability sample selection. However, the procedures implemented in PROC SURVEYSELECT are basic selection tools that must be assembled into larger systems for complex probability samples, particularly multistage samples. This paper describes the development and operation of a set of sampling macros built around PROC SURVEYSELECT for sampling the ultimate stage units in a multistage sample. Examples of several situations where the macro can be most beneficial are also given.

No paper was submitted for publication.

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Paper 009-2013

MACUMBA: Modern SAS® GUI Debugging Made Easy

Michael Weiss, Bayer Pharma AG

ABSTRACT

MACUMBA is an in-house-developed application for SAS® programming. It combines interactive development features of PC-SAS, the possibility of a client-server environment and unique state-of-the-art features that were always missing. This presentation covers some of the unique features that are related to SAS code debugging. At the beginning, special code execution modes are discussed. Afterwards, an overview of the graphical implementation of the single-step debugger for SAS macros and DATA step is provided. Additionally, the main pitfalls of development are discussed.

No paper was submitted for publication.

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Paper 010-2013

Give the Power of SAS® to Excel Users Without Making Them Write SAS Code

William Benjamin, Owl Computer Consultancy LLC

ABSTRACT

Merging the ability to use SAS® and Microsoft Excel can be challenging. However, with the advent of SAS® Enterprise Guide®, SAS® Integration Technologies, SAS® BI Server software, JMP® software, and SAS® Add-In for Microsoft Office; this process is less cumbersome. Excel has the advantages of being cheap, available, easy to learn, and flexible. On the surface, SAS and Excel seem widely separated without these additional SAS products. But wait, BOTH SAS AND EXCEL CAN INTERFACE WITH THE OPERATING SYSTEM. SAS can run Excel using the command and Excel can run SAS as an "APPLICATION." This is NOT DDE; each system works independently of the other. This paper gives an example of Excel controlling a SAS process and returning data to Excel.

No paper was submitted for publication.

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Paper 011-2013

Automated Testing of Your SAS® Code and Collation of Results (Using Hash Tables)

Andrew Ratcliffe, RTSL.eu

ABSTRACT

Testing is an undeniably important part of the development process, but its multiple phases and approaches can be under-valued. I describe some of the principles I apply to the testing phases of my projects and then show some useful macros that I have developed to aid the re-use of tests and to collate their results automatically. Tests should be used time and again for regression testing. The collation of the results hinges on the use of hash tables, and the paper gives detail on the coding techniques employed. The small macro suite can be used for testing of SAS® code written in a variety of tools including SAS® Enterprise Guide®, SAS® Data Integration Studio, and the traditional SAS Display Manager Environment.

No paper was submitted for publication.

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Paper 012-2013

A Metadata-Driven Programming Technique Using SAS®

Xiyun (Cheryl) Wang, Statistics Canada

ABSTRACT

In a typical SAS® system, validations on user inputs and setting defaults for missing values in inputs are essential to ensure that the system can continue its processing without errors. This paper describes, in a SAS system, how to define validation rules as metadata for various type of inputs such as library, data sets, etc., and how to register default values for missing values for inputs as metadata. Furthermore, it illustrates how to use those metadata to automate the validation processes and data imputation process. It provides a SAS programming technique to ease system development with efficiency, re-usability, easy maintainability, and coding consistency.

No paper was submitted for publication.

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Paper 013-2013

Knowing When to Start, Where You Are, and How Far You Need to Go: Customized Software Tracks Project Workflow, Deliverables, and Communication

Eric Vandervort, Rho

ABSTRACT

In a clinical trials environment, projects can have multiple statisticians and statistical programmers working on tables, listings, and figures, or "displays", for project deliverables. Communication between the various team members regarding when to program, validate, review, or revise these displays is vital to the success of a project. This paper describes a custom web-based application that stores relevant data about displays, tracks programming and reviewing workflow, and provides a tool for project-level management overview.

No paper was submitted for publication.

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Paper 014-2013

Extension Node to the Rescue of the Curse of Dimensionality via Weight of Evidence (WOE) Recoding

Satish Garla, SAS
Goutam Chakraborty, Oklahoma State University
Andrew Cathie, SAS

ABSTRACT

Predictive models in data mining applications often involve very large data sets that contain numerous categorical variables with large numbers of levels. These models often suffer from the curse of dimensionality. Enhanced weight of evidence (WOE) methods can be used to effectively incorporate high-dimensional categorical inputs into a data mining model. Weight of evidence technique converts a nominal input into an interval input by using a function of the distribution of a target variable for each level in the nominal input variable.

SAS® Enterprise Miner™ has a facility to create extension nodes that work in the same way as a usual node. This paper explains creation of an extension node in SAS Enterprise Miner that performs WOE recoding.

No paper was submitted for publication.

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Paper 018-2013

Extraction, Transformation, and Loading (ETL) for Outcome Measures of Workers' Compensation Benefits

Mike Maier, Oregon Department of Consumer and Business Services

ABSTRACT

Base SAS® was used to create a data sub-system for measuring outcomes, added to a data system (coded in SAS) of benefit costs and employment. One claim per injured worker per fiscal year is extracted as a study or control record, using business-rule code. Disability benefits and employment data are transformed to time-series records for claims, which are transformed to time-series statistics by fiscal year. Programs are run remotely on a UNIX data warehouse, and SAS data sets and metadata are loaded to the warehouse and downloaded to a LAN. Quarterly generations are kept for analysis of claim development.

No paper was submitted for publication.

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Paper 019-2013

Predictive Modeling in Sports Leagues: An Application in the Indian Premier League

Pankush Kalgotra, Oklahoma State University
Ramesh Sharda, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

The purpose of this article is to develop models that can help team selectors build talented teams with minimum possible spending. In this study, we build several predictive models for predicting the selection of a player in the Indian Premier League, a cricket league, based on each player's past performance. The models are developed using SAS® Enterprise Miner™ 7.1. The best-performing model in the study is selected based on the validation data misclassification rate. The selected model provides us with the probability measure of the selection of each player, which can be used as a valuation factor in the bidding equation. The models that are developed can help decision-makers during auction set salaries for the players.

No paper was submitted for publication.

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Paper 505-2013

Using PROC FCMP in SAS® System Development: Real Examples

Xiyun (Cheryl) Wang, Statistics Canada
Yves Deguire, Statistics Canada

ABSTRACT

This paper discusses the use of the FCMP procedure, focusing mainly on two aspects. One aspect is that a lot of complex mathematical functions to be used in our systems are difficult to implement using SAS® macros. I have encapsulated these complex functions into PROC FCMP functions and used them seamlessly in PROC OPTMODEL. Another aspect is the need to apply generic message handling across different SAS components, such as the DATA step, SAS macros, and PROC steps. PROC FCMP again becomes a natural fit for this purpose that can be easily invoked by any SAS program blocks.

No paper was submitted for publication.

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Paper 021-2013

The Hash-of-Hashes as a "Russian Doll" Structure: An Example with XML Creation

Joseph Hinson, MERCK

ABSTRACT

SAS® hash objects have inspired novel programming techniques. The recent discovery that hash tables can contain even other hash objects: "hash of hashes" opens the door to their application to hierarchical data processing. Because hierarchies, like Russian dolls, can be considered "containers within containers." Thus, nested hash objects could model XML, a hierarchical data structure increasingly finding its way into clinical trial data. Clinical programmers now have to deal with hierarchical as well as tabular and relational data sets. SAS® now provides tools like the XML libname engine and XML mapper. This paper aims to show, using a simplified CDISC LAB model, that the hash object could well be another tool for creating XML.

No paper was submitted for publication.

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Paper 027-2013

Census Retires PROC COMPUTAB

Christopher Boniface, U.S. Census Bureau
Nora Szeto, U.S. Census Bureau
Hung Pham, U.S. Census Bureau

ABSTRACT

PROC COMPUTAB is used to generate tabular reports in a spreadsheet-like format. PROC COMPUTAB has been around a long time. It has served us well at Census, but it is time to replace it with reporting procedures that are more modern. This paper shows you how to create hundreds of Excel tables using ODS TAGSETS EXCELXP. We discuss how we converted PROC COMPUTAB to both PROC TABULATE and PROC REPORT to create complex Census tables. Moreover, how we use PROC TABULATE as the computing engine to handle overlapping format ranges and PROC REPORT as the reporting tool to create polished Excel tables. We reveal how to control the appearance of the Excel tables including column widths, row heights, and formats.

No paper was submitted for publication.

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Paper 033-2013

RUN_MACRO Run! With PROC FCMP and the RUN_MACRO Function from SAS® 9.2, Your SAS® Programs Are All Grown Up

Dylan Ellis, Mathematica Policy Research

ABSTRACT

When SAS® first came into our life, it comprised but a DATA step and a few procedures. Then we trained our fledgling programs using %MACRO and %MEND statements, and they were able to follow scripted instructions. But with SAS 9.2 and 9.3, your macros are now wearing the clothes of a PROC FCMP function; you no longer need to feed every parameter with a spoon. These functions are independent programming units, and this talk shows how they can be put to use for handy calculations, standardizing and simplifying code, and adding dynamic new capabilities that may change the way you program.

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Paper 034-2013

A Flock of C-Stats, or Efficiently Computing Multiple Statistics for Hundreds of Variables

Steven Raimi, Magnify Analytic Solutions
Bruce Lund, Marketing Associates, LLC

ABSTRACT

In other presentations, the authors have provided macros that efficiently compute univariate statistics for hundreds of variables at a time. The classic example is when a modeler must fit a binary model (two-valued target) and has available hundreds of potential numeric predictors. Such situations may occur when third-party data sets are added to in-house transactional data for direct marketing or credit scoring applications. The paper describes the SAS® code to compute these statistics, focusing on the techniques that make these macros efficient. Topics include macro techniques for identifying and managing the input variables, restructuring the incoming data, and using hash objects to quickly count the number of distinct values for each variable.

No paper was submitted for publication.

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Paper 042-2013

Can You Create Another PowerPoint for Me? How to Use Base SAS® and DDE to Automate Snappy PowerPoint Presentations

Scott Koval, Pinnacle Solutions, Inc.
Mitchell Weiss, Maguire Associates

ABSTRACT

Your supervisor appreciates your wonderful and informative SAS® reports. How many times have you heard, “Great! Now, can you compile all the SAS reports into a PowerPoint presentation?” At that moment, you wish you could press a button to automate the process because SAS programmers spend way too much time updating PowerPoint slides. This paper offers solutions to make your life easier by building upon techniques from Koen Vyverman’s paper (SUGI 30, 2005) that discussed the Dynamic Data Exchange (DDE) feature within SAS to write through MS Excel to MS PowerPoint. The goal is to free data analysts from PowerPoint tyranny by enabling efficient and repeatable PowerPoint presentations.

No paper was submitted for publication.

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Paper 538-2013

A Better Way to Flip (Transpose) a SAS® Data Set

Arthur Tabachneck, myQNA, Inc.
Xia Keshan, Chinese Financial electrical company
Robert Virgile, Robert Virgile Associates, Inc.
Joe Whitehurst, High Impact Technologies

ABSTRACT

Many SAS® programmers have flipped out when confronted with having to flip (transpose) a SAS data set, especially if they had to transpose multiple variables, needed transposed variables to be in a specific order, had a mixture of character and numeric variables to transpose, or if they needed to retain a number of non-transposed variables. Wouldn't it be nice to have a way to accomplish such tasks that was easier to understand and modify than PROC TRANSPOSE, was less system resource-intensive, required fewer steps, and could accomplish the task as much as fifty times or more faster?

No paper was submitted for publication.

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Paper 044-2013

A Data-Driven Analytic Strategy for Increasing Yield and Retention at Western Kentucky University Using SAS Enterprise BI and SAS® Enterprise Miner™

Matt Bogard, Western Kentucky University

ABSTRACT

As many universities face the constraints of declining enrollment demographics, pressure from state governments for increased student success, as well as declining revenues, the costs of utilizing anecdotal evidence and intuition based on “gut” feelings to make time and resource allocation decisions become significant. This paper describes how we are using SAS® Enterprise Miner™ to develop a model to score university students based on their probability of enrollment and retention early in the enrollment funnel so that staff and administrators can work to recruit students that not only have an average or better chance of enrolling but also succeeding once they enroll. Incorporating these results into SAS® EBI will allow us to deliver easy-to-understand results to university personnel.

No paper was submitted for publication.

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Paper 045-2013

Using SAS® BI for Integrated Bank Reporting

James Beaver, Farm Bureau Bank

ABSTRACT

This paper shows how Base SAS®, SAS® Enterprise Guide®, SAS/ETS®, and SAS® BI are used to provide a comprehensive view of bank performance. Data is extracted from the G/L, loan, deposit, and application systems, real-time data is accessed to provide up-to-the-minute results on loan activity, and system reports are read in to provide additional information. PROC COMPUTAB is used to create financial statements, OLAP cubes are used to provide reports on bank balance sheet components and budget comparisons on non-interest income and expense items by department, and dashboards are used to provide real-time reports on loan originations. The reports are presented using SAS BI through the SAS data portal to provide real-time, trend, and historical reports on the bank's performance.

No paper was submitted for publication.

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Paper 047-2013

Escape from Big Data Restrictions by Leveraging Advanced OLAP Cube Techniques

Stephen Overton, Overton Technologies LLC

ABSTRACT

In today's fast-growing field of business analytics, there are many tools and methods for summarizing and analyzing big data. This paper focuses specifically on OLAP technology and features natively available in OLAP cubes that enable organizations to deploy robust business intelligence reporting when high volumes of data exist. This paper discusses how to use these features to enhance basic OLAP cubes by using member properties, defining dynamic measures and dimensions using the MDX language, and improving performance for high data volumes.

No paper was submitted for publication.

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Paper 048-2013

How to Automate Security Filters for SAS® OLAP Cubes Using Users Groups Information Available in SAS® Management Console

Plinio Faria, Bradesco

ABSTRACT

In order to limit the data that a user can access in an OLAP Cube, it is required to use MDX conditions, and those expressions must be customized for every OLAP Cube because each one has a different structure. This paper will focus on showing how to automate the creation of MDX conditions using the users groups information available in the metadata server and in a way that is possible to change the data subset that the users are allowed to see only changing the user group in SAS® Management Console. It will be demonstrated also how to implement OLAP Cube security adding directly the users login to a cube dimension.

No paper was submitted for publication.

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Paper 049-2013

From Factbook to Dashboard in T Minus No Time and Counting!

Alicia Betsinger, Office of Strategic Initiatives, UT System
Annette Royal, The University of Texas System

ABSTRACT

The University of Texas System has been publishing detailed data on institutional performance for years using static PDF files and Excel documents. With requests for more data increasing, this approach was unsustainable. The Office of Strategic Initiatives (OSI) was spending too much time collecting and processing data for the Chancellor, Board of Regents, and media. There was no time for in-depth research or analysis. Instead of users using the data to help support better management, the data was managing the users.

What grew from an internal office's need morphed into a larger UT System need for a BI system that would support the Chancellor's framework by providing an accessible and customizable tool for monitoring institutional performance and progress toward transparency and accountability goals.

No paper was submitted for publication.

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Paper 054-2013

Versatile Global Prompting for SAS® Web Report Studio

Hong Jiang, Deloitte

ABSTRACT

Prompts built into the information map are convenient tools for developers using SAS® Web Report Studio. However, the parameter values set through these prompts are not able to populate to other web report sections or objects, limiting their usefulness. This paper describes a solution for creating versatile global prompts that support one-time user response for multiple objects or sections in a SAS web report. Both single-value and multiple-value selection features can be implemented by following the directions described in this paper.

No paper was submitted for publication.

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Paper 055-2013

How to List All Users That Have Access to a SAS® Information Delivery Portal 4.3 Page

Bernt Dingstad, If Insurance

ABSTRACT

This paper describes how to access SAS® Metadata from a Base SAS® client and make simple listings of often very urgent information and in the end distribute this information utilizing the SAS Enterprise BI framework.

No paper was submitted for publication.

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Paper 489-2013

Key Aspects to Implement A Perfect SAS® BI Platform

Gaurav Agrawal, Major Financial Company

ABSTRACT

A perfect SAS® architecture is not defined just by successful installation of a SAS platform but also by ensuring good performance, easy maintenance, compliance to all security, secured environment, scalability, good administration practices, proper monitoring, seamless Integration with Interfacing system, etc. SAS provides lot of flexibility in order to integrate with other interfacing systems; however, a perfect SAS Enterprise Implementation is not just driven with the maturity of SAS platform but also requires matured implementation of other interfacing platforms. SAS user experience starts from the first click on the SAS client and driven from SAS environment capabilities and its integration to interfacing systems. Hence interfacing systems also have a key role to play in order to get perfect SAS architecture.

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Paper 068-2013

Product Affinity Segmentation That Uses the Doughnut Clustering Approach

Darius Baer, SAS
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Product affinity means the natural liking of customers for products. Product affinity segmentation divides customers into groups based on purchased products. While conceptually appealing to marketers and business analysts, in practice it often yields inappropriate solutions such as one large segment and many tiny segments. Standard transformations such as logarithms do not help. In this paper, we demonstrate how a combination of softmax affinity segments with a doughnut clustering approach (single central cluster) results in more evenly sized product affinity segments for 30,000 customers of a business-to-business company. The affinity segments show meaningful differences in product buying patterns across the customer base, and can be used for identifying cross-selling and up-selling opportunities. The segments are further profiled using customers' background variables to provide deeper business insights.

No paper was submitted for publication.

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Paper 069-2013

Predicting Women's Department Purchases in a Retail Store By Using the SEMMA Methodology

Michael Soto, Ripley

ABSTRACT

One of our focus areas is to improve the business in the Women's Department because it is currently our most powerful department in terms of transactions originated by customers. It raises the need to implement an analytical model focused on this department for establishing what offer is the most appropriate for our customers according to buying patterns of customers, augmenting the likelihood that a customer comes back to the stores. Those patterns are calculated based on demographic transactional data, and any other interaction that our customers have had with our stores. The predictive model we used is the logistic regression, and it was executed following the SEMMA methodology considered by SAS® for projects in SAS® Enterprise Miner™.

No paper was submitted for publication.

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Paper 071-2013

Bigger Data Analytics: Using SAS® on Aster Data and Hadoop

John Cunningham, Teradata
MOMOLUE KIADII, TERADATA

ABSTRACT

With the increased popularity of new Big Data clustered processing platforms, SAS® Analytics now has the opportunity to solve newer, bigger problems than ever before. Paper will focus on the evolution of Big Data analytics, the new data sources and types, new technologies involved, to achieve end to end analytic processing with SAS. Will specifically demonstrate the use of new Big Data technologies, SAS Analytics with SAS/ACCESS® for Aster, Aster SQL-MR, SQL-H to integrate end to end Big Data analytics on the Aster Discovery Platform, even from raw data files stored on Hadoop clusters.

No paper was submitted for publication.

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Paper 076-2013

Adaptive In-Memory Analytics with Teradata: Extending Your Existing Data Warehouse to Enable SAS® High-Performance Analytics

Greg Otto, Teradata Corporation
Tom Weber, SAS

ABSTRACT

SAS® High-Performance Analytics rapidly analyzes big data in-memory. The Initial High-Performance Analytics SAS offering on Teradata co-locates SAS® on the database nodes in a separate appliance. Data is replicated to the appliance for use by the SAS analytics.

SAS and Teradata have developed a new in-memory analytics architecture that delivers the power of SAS High-Performance Analytics to data in the Enterprise Data Warehouse, without replication to an appliance. In this “Asymmetric” architecture, dedicated SAS nodes access Teradata data on demand via high-speed networking. Asymmetric in-memory processing extends a Teradata EDW to support SAS High-Performance Analytics with minimal impact.

This paper explains the Asymmetric architecture and configuration options, and quantifies the impact to Teradata systems that are extended to support SAS in-memory analytics.

No paper was submitted for publication.

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Paper 078-2013

SAS® Data Integration Studio: The 30-Day Plan

John Heaton, Heritage Bank

ABSTRACT

When starting your journey with SAS® Data Integration Studio, it is important to get the basics correct. This paper outlines the main framework and activities needed within the first 30 days to set you up for success using SAS Data Integration Studio.

No paper was submitted for publication.

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Paper 081-2013

Need for Speed - Boost Performance in Data Processing with SAS/Access® Interface to Oracle

Svein Erik Vralstad, Knowit Desicion Oslo AS

ABSTRACT

Big Data is engulfing us. The expectations of users increase, and analytics is getting more and more advanced. Timely data and fast results have never had greater value. In data warehousing, analytics, data integration, and reporting, there is an ever-growing need for speed. When operating in environments where performance is of importance, it is of great value to fully understand the interaction between the different components of the environment. Hence, the importance of in-database execution is accelerating. To know when to let SAS process data, and when to use Oracle to perform the task is then of great value. This paper explores ways to achieve substantial gains in performance when processing (read, transform, calculate, and write) data in an effective manner.

No paper was submitted for publication.

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Paper 083-2013

Pulling Data from the Banner Operational Data Store with SAS® Enterprise Guide: Not Only Fast but Fun!

Claudia McCann, East Carolina University College of Nursing

ABSTRACT

The assessment of learning and of services in higher education is crucial for continued improvement. Administrators and faculty, therefore, require data for their decision-making processes. There are many data input experts on campus and, unfortunately, far fewer who can extract the data in the aggregate form required by administrators, accreditors, and other institutional stakeholders. The SAS® Enterprise Guide interface with the Banner Operational Data Store is a very powerful combination of softwares that enable the end user to quickly access the institution's data and produce reports. More powerful still is the ability to bring other relational databases, such as Excel spreadsheets, into the SAS Enterprise Guide environment, thereby allowing variables not available in the Operational Data Store to be used in comparative analyses.

No paper was submitted for publication.

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Paper 540-2013

SAS® Data Management Techniques: Cleaning and Transforming Data for Delivery of Analytic Data Sets

Chris Schacherer, Clinical Data Management Systems, LLC

ABSTRACT

The analytic capabilities of SAS® software are unparalleled. Similarly, the ability of the Output Delivery System to produce an endless array of creative, high-quality reporting solutions is the envy of many analysts using competing tools. Beneath the glitz and glitter is the dirty work of cleaning, managing, and transforming raw source data and reliably delivering analytic data sets that accurately reflect the processes being analyzed. Although a basic understanding of DATA step processing and PROC SQL is assumed, the present work provides examples of both basic data management techniques for profiling data as well as transformation techniques that are commonly utilized in the creation of analytic data products. Examples of techniques for automating the generation and delivery of production-quality, enterprise-level data sets are provided.

No paper was submitted for publication.

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Paper 087-2013

Bringing Churn Modeling Straight to the Source: SAS® and Teradata In-Database Model Development

Karl Krycha, Teradata
Jonathan Wexler, SAS

ABSTRACT

This paper takes a closer look at the opportunities of using the predictive analytic power of SAS® together with the performance and scalability of Teradata. Users will see how the SAS® Analytics Accelerator for Teradata improves modeling speed from hours to seconds, allowing users to produce more models faster. The SAS Analytics Accelerator eliminates data movement by moving SAS analytic computations capabilities to the Teradata database. The paper provides an overview of the available procedures and uses a typical business application to illustrate the full end-to-end process of analytic modeling within Teradata.

No paper was submitted for publication.

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Paper 088-2013

Demand Forecasting Using a Growth Model and Negative Binomial Regression Framework

Michelle Cheong, Singapore Management University
Cally Ong Yeru, Singapore Management University
Murphy Choy, Singapore Management University

ABSTRACT

In this paper, we look at demand forecasting by using a growth model and negative binomial regression framework. Using cumulative sales, we model the sales data for different wristwatch brands and relate it to their sales and growth characteristics. We apply clustering to determine the distinctive characteristics of each individual cluster. Four different growth models are applied to the clusters to find the most suitable growth model to be used. After determining the appropriate growth model to be applied, we then forecast the sales by applying the model to new products being launched in the market and continue to monitor the model further.

No paper was submitted for publication.

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Paper 089-2013

Using Classification and Regression Trees (CART) in SAS® Enterprise Miner™ for Applications in Public Health

Leonard Gordon, University of Kentucky

ABSTRACT

Classification and regression trees (CART)—a non-parametric methodology—were first introduced by Breiman and colleagues in 1984. In this paper they are employed using SAS® Enterprise Miner™, and several examples are given to demonstrate their use. CART are underused (especially in public health), and they have the ability to divide populations into meaningful subgroups that allow the identification of groups of interest and enhance the provision of products and services accordingly. They can provide a simple yet powerful analysis. This paper attempts to demonstrate their value and thus encourage their increased use in data analysis.

No paper was submitted for publication.

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Paper 090-2013

Using the Power of SAS® to Analyze and Solve Quality Problems at Shanghai General Motors

Yu Zhang, Shanghai General Motors Co.,Ltd
Ying Wang, Shanghai General Motors Co.,Ltd
Shaozong Jiang, Information System Department,Shanghai General Motors Co.,Ltd
Yahua Li, Information System Department,Shanghai General Motors Co.,Ltd
Jiawen Zhang, Information System Department, Shanghai General Motors Co.,Ltd
Nanxiang Gao, Quality Department,Shanghai General Motors Co.,Ltd
Jian Li, Quality Department,Shanghai General Motors Co.,Ltd

ABSTRACT

Data to assist in solving quality problems is of enormous value to quality departments in the automotive industry, including that of Shanghai General Motors (SGM). However, millions of claims records, tens of thousands of solving reports, dozens of language descriptions, and heterogeneous regional code present great difficulty for dataflow and knowledge management. This paper explores SGM's information system, known as Problem Solving Analysis (PSA), which uses several foundation tools of SAS®, such as Base SAS®, SAS/CONNECT®, and SAS/ACCESS®, to solve business problems faster, and which has used advanced SAS® Enterprise Content Categorization to establish 26,000 text rules for word recognition and accurate classification. PSA incorporates effective data infrastructure building, report linking, fast information searches, and diagnosis and forecasting of enterprise problems.

No paper was submitted for publication.

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Paper 091-2013

Information Retrieval in SAS®: The Power of Combining Perl Regular Expressions and Hash Objects

Lingxiao Qi, Kaiser Permanente
Fagen Xie, Kaiser Permanente

ABSTRACT

The volume of unstructured data is rapidly growing. Effectively extracting information from huge amounts of unstructured data is a challenging task. With the introduction of Perl regular expressions and hash objects in SAS® 9, the combination of these two features can be very powerful in information retrieval. Perl regular expressions can be used to match and manipulate various complex string patterns. The hash object provides an efficient and convenient mechanism for quick data storage and retrieval. By leveraging the best from both tools and applying it to the electronic medical data, we show how pattern searching on free text is made easy while reducing coding effort and increasing performance.

No paper was submitted for publication.

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Paper 092-2013

Targeting Public Value in New Zealand

Michael O'Neil, Ministry of Social Development

ABSTRACT

The New Zealand Ministry of Social Development is implementing what has been called the “Investment-Based Approach,” which aims to improve social sector performance through better targeting. Social and fiscal outcomes can be better achieved through smart targeting using client-centred evidence to inform strategic and case-level targeted decisions. This paper describes progress to date.

No paper was submitted for publication.

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Paper 095-2013

Variable Reduction in SAS® by Using Weight of Evidence and Information Value

Alec Lin, PayPal, a division of eBay

ABSTRACT

Variable reduction is a necessary and crucial step in accelerating model building without losing potential predictive power. This paper provides a SAS® macro that computes weight of evidence and information value for all potential predictors at the beginning stage of modeling. The SAS output generated at the end of the program will rank continuous, ordinal, and categorical variables by their predictive power, which can lend useful insights to variable reduction. The reduced list of variables enables statisticians to quickly identify the most informative variables for building logistic regression models.

No paper was submitted for publication.

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Paper 097-2013

Estimates of Personal Revenue from Credit and Sociodemographic Information Combining Decision Trees and Artificial Neural Networks (ANN)

Deybis Florez Hormiga, Colpatria Bank

ABSTRACT

In different bank processes, a typical problem is determining customer revenue. Customer revenue information is very important and highly impacts these processes. As a result, finding a method to estimate the revenue of customers for validation, segmentation, profiling, business strategies, risk mitigation, regulatory compliance, or simply as information is critical. Due to the amount of information and the high volatility of the income reported by different clients, SEMMA methodology is used with SAS® Enterprise Miner™. Starting from a fine segmentation using decision trees and then Artificial Neural Networks (ANN) in each of the segments, higher performance is achieved by including credit information and customer sociodemographic variables.

No paper was submitted for publication.

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Paper 098-2013

Where Should I Dig? What to Do before Mining Your Data

Stephanie Thompson, Datamum

ABSTRACT

Data mining involves large amounts of data from many sources. In order to successfully extract knowledge from data, you need to do a bit of work before running models. This paper covers selecting your target and data preparation. You want to make sure you find gold nuggets and not pyrite. The work done up front will make sure your panning yields results and is not just a trip down an empty shaft.

No paper was submitted for publication.

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Paper 101-2013

Data Mining of U.S. Patents: Research Trends of Major Technology Companies

Ken Potter, SAIC
Robert Hatton, SAIC

ABSTRACT

Research initiatives are normally closely held corporate secrets. Insights into research trends are difficult to extract from public information, but data mining of the U.S. Patent and Trademark Office (USPTO) patent grants provides an opportunity to expose interesting trends and areas of interest as indicated by activity in related patent areas. This paper covers assessing the vast USPTO information repository and the analytical methodology that extracts patent grant information from multiple formats and produces interesting insights into research trends for several major technology companies.

No paper was submitted for publication.

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Paper 102-2013

A Tale of Two SAS® Technologies: Generating Maps of Topical Coverage and Linkages in SAS User Conference Papers

Denise Bedford, Kent State University
Richard La Valley, Strategic Technology Solutions
Barry deVille, SAS

ABSTRACT

This paper discusses how SAS® technologies -- Text Analytics and Content Categorization Suite -- were used to generate comprehensive and dynamic summaries of the entire corpus of SAS user presentations from inception to the present. The goal was to improve access to the conference proceedings for SAS users and conference attendees in particular. The research addresses two important access points to conference papers -- Industry Solutions and Technology Solutions.

The findings of this research suggest that both suites are powerful tools that can be used in complementary or independent approaches to generate similar results. The Industry Solution perspective generated by both technologies surfaced common access points. The Technology Solution perspectives also generated similar perspectives when comparable rule sets were leveraged.

No paper was submitted for publication.

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Paper 104-2013

Deciphering Emoticons for Text Analytics: A Macro-Based Approach

Chad Atkinson, Sinclair Community College

ABSTRACT

Emoticons, initialisms, and acronyms can evade routine processing, and the difference between "this was a great class :)" and "ZOMG that was the best class ever :-7" might be significant. This paper develops a macro that converts select emoticons, initialisms, and acronyms to text that can be parsed by SAS® Text Analytics or SAS® Sentiment Analysis Studio.

No paper was submitted for publication.

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Paper 105-2013

Be Customer Wise or Otherwise: Combining Data Mining and Interactive Visual Analytics to Analyze Large and Complex Customer Resource Management (CRM) Data

Aditya Misra, Nanyang Technological University
Kam Tin Seong, Singapore Management University
Junyao Ji, SAS Institute

ABSTRACT

In this competitive world, more and more companies, such as our project sponsor, a global logistics company, are exploring the potential use of data mining techniques to make informed and intelligent marketing strategies. We conducted a market segmentation study using a comprehensive set of customer transaction and profile data. This paper aims to report on our experience gained in using the interactive visual analytics and data mining techniques of JMP® to perform customer segmentation analysis. We share our views on how interactive visual analytics and data mining techniques can empower everyday data analysts to gain useful insights and formulate informed decisions by demonstrating the interactive data visualization techniques of JMP such as graph builder, parallel plots, and bubble plots.

No paper was submitted for publication.

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Paper 500-2013

Opinion Mining and Geo-positioning of Textual Feedback from Professional Drivers

Mantosh Kumar Sarkar, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

While many companies collect feedback from their customers via mobile applications, they often restrict their analysis to numeric data and ignore analyzing customer feedback and sentiments from textual data. In this paper, we analyze customer feedback by professional drivers sent via a mobile app. We demonstrate how SAS® Text Miner can be used to automatically generate and summarize topics from positive and negative feedbacks. In addition, we demonstrate how SAS® Sentiment Analysis studio can be used to build rules to predict customers' sentiments automatically so that experts' time can be used for more strategic purposes. Finally, we show how feedback with positive and negative sentiments can be geo-positioned on the U.S. map via JMP® scripts to provide a better visualization of sentiment distribution.

No paper was submitted for publication.

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Paper 113-2013

Detecting Cross-Channel Fraud Using SAS®

Srikar Rayabaram, Oklahoma State University
Krutharth Kumar Peravalli Venkata Naga, Oklahoma State University

ABSTRACT

In a world where criminals are getting effective in their ability to gain information about a customer of a particular bank, cross-channel monitoring and assessment has become very important. As each day passes by, criminals are also getting bolder in terms of engaging beyond a single channel to set in motion the movement of money. In these scenarios, a cross-channel review of user activity is essential to detect or prevent fraud. In this paper, we analyze data across various channels. Also, we create a predictive model that can be used to predict such activity and discuss how effective the model would have been to detect fraudulent activity in the past.

No paper was submitted for publication.

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Paper 114-2013

Quick Hits: My Favorite SAS® Tricks

Marje Fecht, Prowerk Consulting

ABSTRACT

Are you time-poor and code-heavy?

It's easy to get into a rut with your SAS® code, and it can be time-consuming to spend your time learning and implementing improved techniques. This presentation is designed to share quick improvements that take 5 minutes to learn and about the same time to implement. The quick hits are applicable across versions of SAS and require only Base SAS® knowledge.

Included are:

- little-known functions that get rid of messy coding
- simple macro tricks
- dynamic conditional logic
- data summarization tips to reduce data and processing
- generation data sets to improve data access and rollback
- testing tips

No paper was submitted for publication.

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Paper 121-2013

Reading Data from Microsoft Word Documents: It's Easier Than You Might Think

John Bentley, Wells Fargo Bank

ABSTRACT

SAS® provides the capability of reading data from a Microsoft Word document, and it's easy once you know how to do it. Using the FILENAME statement with the DDE engine makes it unnecessary to export to Excel or work with an XML map. This paper goes through the steps of having SAS read a Word document and shares a live example that demonstrates how easy it is. All levels of SAS users may find this paper useful.

No paper was submitted for publication.

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Paper 122-2013

Do Not Let a Bad Date Ruin Your Day

Lucheng Shao, University of California at Irvine

ABSTRACT

Just as we have to step out of fairy-tale land and into reality when we grow up, we can't always expect the input dates to be good. This paper shows you what SAS® does when it runs into input dates that are normally good but have now gone bad, and how those problems can be addressed by code. It is intended for readers who are familiar with Base SAS but not with bad dates.

No paper was submitted for publication.

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Paper 124-2013

The SAS® Programmer's Guide to XML and Web Services

Chris Schacherer, Clinical Data Management Systems, LLC

ABSTRACT

Because of XML's growing role in data interchange, it is increasingly important for SAS® programmers to become familiar with SAS technologies and techniques for creating XML output, importing data from XML files, and interacting with web services -- which commonly use XML file structures for transmission of data requests and responses. The current work provides detailed examples of techniques you can use to integrate these data into your SAS solutions using SAS® XML Mapper, the XML LIBNAME engine, the Output Delivery System, the FILENAME statement, and new SOAP functions available beginning in SAS 9.3.

No paper was submitted for publication.

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Paper 128-2013

30 in 20 Things You May Not Know about SAS®

Tim Berryhill, Wells Fargo

ABSTRACT

30 things you may not know SAS® can do. In 20 minutes, I hope to widen your eyes and improve your programming. I have used SAS on many platforms and operating systems, with many databases. Most of these ideas will run anywhere SAS runs.

No paper was submitted for publication.

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Paper 131-2013

Creating ZIP Files with ODS

Jack Hamilton, Kaiser Foundation Hospitals

ABSTRACT

ZIP files are a convenient way to bundle related files together, and can save storage space at the same time. The ZIP format is used internally by SAS® for SAS® Enterprise Guide® projects, but until SAS® 9.2 there was no native way to create a ZIP file with your own SAS program.

Starting in SAS 9.2, you can create your own ZIP files using ODS PACKAGE statements. This presentation describes how to create simple ZIP archives, and discusses how to create an archive file with an internal directory structure.

No paper was submitted for publication.

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Paper 133-2013

Creating Clark Error Grid with SAS/GRAPH®, the SAS/GRAPH Annotate Facility, and SAS® Macro Applications

Yongyin Wang, Medtronic Diabetes
John Shin, Medtronic Diabetes

ABSTRACT

Clarke Error Grid Analysis has been widely used in the accuracy quantification of blood glucose values obtained from continuous glucose monitoring (CGM) sensor against reference values from meter or YSI instruments. A vivid graphic presentation of clinical accuracy of CGM sensor data is preferred by statisticians and reviewers of regulatory agencies. SAS/GRAPH® Annotate facility is a powerful tool for customizing, enhancing, or changing the features of graphic outputs. Clarke Error Grid breaks down a scatterplot of estimated glucose values versus reference values into five zones: A, B, C, D, and E. This presentation demonstrates how to use SAS/GRAPH, the SAS/GRAPH Annotate facility, and SAS macro applications together to create such Error Grid for clinical accuracy determination of CGM data against meter or YSI glucose values.

No paper was submitted for publication.

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Paper 519-2013

Arrays - Data Step Efficiency

Harry Droogendyk, Stratia Consulting Inc.

ABSTRACT

Arrays are a facility common to many programming languages, useful for programming efficiency. SAS® data step arrays have a number of unique characteristics that make them especially useful in enhancing your coding productivity. This presentation will provide a useful tutorial on the rationale for arrays and their definition and use.

No paper was submitted for publication.

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Paper 148-2013

Create Your First SAS® Stored Process

Tricia Aanderud, And Data Inc
Angela Hall, SAS

ABSTRACT

Learn how to convert a simple SAS® macro into three different stored processes! Using examples from the newly released book “50 Keys to Learning SAS Stored Processes,” you’ll see how to build a stored process that allows users to filter their results for the report of their dreams. You’ll learn how to use the SAS Prompt Framework to customize your stored process quickly and efficiently. No experience required! Suitable for beginners. SAS® 9.2 and later.

No paper was submitted for publication.

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Paper 153-2013

Advanced Project Management beyond Microsoft Project, Using PROC CPM, PROC GANTT, and Advanced Graphics

Lindsey Puryear, SAS
Stephen Sloan, Accenture

ABSTRACT

The Challenge: Instead of managing a single project, we had to craft a solution that would manage hundreds of higher- and lower-priority projects, taking place in different locations and different parts of a large organization, all competing for common pools of resources.

Our Solution: Develop a Project Optimizer tool using the CPM procedure to schedule the projects, and using the GANTT procedure to display the resulting schedule. The Project Optimizer harnesses the power of the delay analysis feature of PROC CPM and its coordination with PROC GANTT to resolve resource conflicts, improve throughput, clearly illustrate results and improvements, and more efficiently take advantage of available people and equipment.

No paper was submitted for publication.

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Paper 155-2013

Projecting Prison Populations with SAS® Simulation Studio

Jeff Day, SAS

Ginny Hevener, NC Sentencing & Policy Advisory Commission

Bahadir Aral, SAS

Tamara Flinchum, NC Sentencing & Policy Advisory Commission

Emily Lada, SAS

ABSTRACT

The majority of U.S. states are mandated to project prison populations for the purpose of planning adequate capacity. Typical time series methods are ineffective because they do not take into account factors like sentence length, prior record, revocations, and legislative changes. Discrete event simulation has proven to be a viable alternative. This paper discusses a project in which SAS worked with the North Carolina Sentencing and Policy Advisory Commission to build a model in SAS® Simulation Studio that projects the number of prison beds needed for the next ten years. The model uses current prison population data, recent court convictions, revocations of community supervision, and estimates of growth to play out the admissions and releases of inmates over the time horizon of the model.

No paper was submitted for publication.

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Paper 157-2013

Vehicle Retail Forecasting Demand and Inventory Management Case Study at Shanghai General Motors

Christina Zhong, shanghai general motors

ABSTRACT

This paper describes a case study about vehicle retail forecasting demand and inventory management in the auto industry. It describes the project's background and the problems that were addressed using SAS®.

No paper was submitted for publication.

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Paper 162-2013

Variance Partition: My Mission and Ambition Come to Fruition

Brenda Beaty, University of Colorado
L. Miriam Dickinson, University of Colorado

ABSTRACT

In medical research, we are often interested in understanding the complex interplay of variables with one or more clinical outcomes. Because our bodies are always in motion, simply viewing a snapshot of data in time is sub-optimal. Longitudinal data gives us the advantage of modeling 'real-life' time-dependent variables and outcomes. This paper is an exploration of one such project. In this paper, we first familiarize ourselves with a study of the relationship of diabetic nephropathy and blood pressure measured longitudinally. We then explore a number of ways to model the data, with the final goal of using time-varying covariates to model the illness path, as well as the ultimate outcome, thereby getting complete partitioning of the variance.

No paper was submitted for publication.

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Paper 163-2013

Quantile Regression in Pharmaceutical Marketing Research

George Mu, IMS health Inc

ABSTRACT

In pharmaceutical marketing research, the heterogeneity in healthcare data presents lots of challenges to researchers. Managers have a difficult time getting comprehensive market pictures from simple equations that generally fit all individuals. Quantile regression offers an efficient and robust way to tease out the different patterns existing in the healthcare market. This paper demonstrates the value of applying quantile regression to solve pharmaceutical marketing research problems. We illustrate the methodology by using SAS® QUANTREG and QUANTLIFE procedures to compare physicians' new product uptake patterns; to find influential drivers in patient medication compliance; and to help in the design of clinical trials for patient selections. The results from these empirical examples show quantile regressions provide more market insights than other commonly used methodologies.

No paper was submitted for publication.

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Paper 164-2013

Using PROC GENMOD to Investigate Drug Interactions: Beta Blockers and Beta Agonists and Their Effect on Hospital Admissions

Hui Fen Tan, Columbia University
Ronald Low, New York City Health and Hospitals Corporation
Shunsuke Ito, New York City Health and Hospitals Corporation
Raymond Gregory, New York City Health and Hospitals Corporation
Vann Dunn, New York City Health and Hospitals Corporation

ABSTRACT

Every year, more than half a million adverse reactions to drugs are reported to the FDA. This paper is a real-world, large-scale review of beta blockers and beta agonist usage. We use New York City public hospitals' records to investigate whether interactions of beta blockers and beta agonists are associated with adverse medical outcomes such as increased hospital visits, a common indicator of health care quality. The GENMOD procedure in SAS® provides a variety of count data models, including Poisson regression and negative binomial regression. We find that patients on "non-clinical trials use" of beta blockers and beta agonists, older patients, and patients with history of COPD, CAD, and pneumonia tend to have higher hospital visit rates.

No paper was submitted for publication.

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Paper 165-2013

Clinician Prescribing Feedback Site: Comparing Clinician Prescribing Habits and Providing Actionable Patient Lists

Michael Nash, Kaiser Permanente

ABSTRACT

Which doctor is prescribing the most non-formulary medications? Which patients are on a brand drug when an equivalent generic is available? These questions and many more can be answered when using the Pharmacy Feedback Site. This secure intranet site at Kaiser Northwest uses SAS/GRAPH® HBAR and VBAR charts to compare clinician prescribing habits. Drill down to compare all clinics, or all departments, or all doctors within a Clinic or Specialty. Drill down even further to find patient lists so pharmacists or clinician staff can perform outreach to members. The Pharmacy Feedback Site also tracks costs and patients month to month. This paper shows you how to create linked HTML files by using PROC GCHART and the HTML= option.

No paper was submitted for publication.

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Paper 167-2013

Estimating Patient Adherence to Medication with Electronic Health Records Data and Pharmacy Claims Combined

Beinan Zhao, Palo Alto Medical Foundation Research Institute
Eric Wong, Palo Alto Medical Foundation Research Institute
Latha Palaniappan, Palo Alto Medical Foundation

ABSTRACT

Estimating patient adherence to medication is critical for comparative effectiveness, patient-centered outcomes research, and epidemiological studies. Using a comprehensive electronic medical record system (EpicCare) that has been in practice for 11 years with more than one million patients, the prevailing adherence metrics (for example, medication possession ratio and proportion days covered) were evaluated. However, these metrics cannot be evaluated when a patient does not fill a medication order (primary non-adherent) or fills it only once (early stop). With just a little more effort, additional clinical information can be incorporated from electronic health records to obtain refined estimates of adherence. This paper proposes a few composite metrics that might be of specific interest to researchers and clinicians.

No paper was submitted for publication.

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Paper 168-2013

Measuring Medication Adherence with Simple Drug Use and Medication Switching

Stacy Wang, Walgreens
Zhongwen Huang, Walgreens
Seth Traubenberg, Walgreen Co.

ABSTRACT

In this paper, we demonstrate SAS®-based solutions that allow providers to calculate adherence across a range of prescribing patterns. The code provided allows PDC to be calculated at both the therapeutic class level and the patient disease level. Refining existing methodologies has increased the efficiency of the calculations.

No paper was submitted for publication.

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Paper 169-2013

SAS® Tools for Transparent and Reproducible Research: Medication History Estimator

Brian Sauer, SLC VA Medical Center
Tao He, University of Utah

ABSTRACT

The Medication History Estimator (MHE) is designed to output data at the course-level; i.e., one row per drug course. A course and period proportion of days covered (PDC) is calculated for each medication. Reports that describe the frequency and percent of users for each medication product, average duration of medication courses, medication possession ratios and Kaplan-Meier based persistency curves are automatically generated and formatted for professional reports and journal publications.

No paper was submitted for publication.

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Paper 171-2013

Moving to SAS® Drug Development 4.2

Magnus Mengelbier, Limelogic

ABSTRACT

Life Science organizations have a long investment into business processes, standards, and conventions that make it difficult to simply turn to a new generation of analysis environments. SAS® Drug Development 4.1 integrates many key features found in current analysis environments that are spread across several applications and systems, which need to be monitored and managed accordingly. The paper considers a set of SAS® programs and how the SAS Drug Development repository, workspace, and workflow features support a common business process with all of the associated tools and utilities. The result is a short list of points to consider and some tricks for moving a business process from a PC SAS or SAS server environment to the new release of SAS Drug Development.

No paper was submitted for publication.

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Paper 172-2013

Evaluating System-Wide Process Improvement in a Health-Care System: Data Through Analysis

Eric Wong, Palo Alto Medical Foundation Research Institute
Lubna Qureshi, Palo Alto Medical Foundation Research Institute
Pragati Kenkare, Palo Alto Medical Foundation Research Institute
Dorothy Hung, Palo Alto Medical Foundation Research Institute

ABSTRACT

Disruptive system changes are required for sustaining high-quality and affordable health-care delivery systems. Successful, transformative health-care system changes are few and even fewer have been rigorously evaluated. Electronic health records and changes in health IT provide an opportunity to leverage an explosion of data in measuring the impact of process improvement initiatives. This paper provides an example of assessing the impact of a system-wide change in a large, multi-specialty health-care system serving two million patients with a 13-year history of using electronic health records. Lessons from ETL all the way to statistical analysis are detailed including relevant SAS® procedures.

No paper was submitted for publication.

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Paper 174-2013

Medical Versus Pharmacy Insurance: Which Is More Cost-Effective for Providing the Prescription? Solving the Problem Via SAS® Enterprise Guide®.

Amber Schmitz, Prime Therapeutics

ABSTRACT

Data-driven decisions that provide strategic solutions. These are buzzwords and phrases we have all heard before, but actually applying those words to deliver actionable data is less commonplace than it should be. This paper explores how to use both pharmacy and medical insurance claims data in order to assess drug utilization behavior across the medical and pharmacy insurance benefits. The final result provides actionable data to assess moving drug fills to the more cost-effective insurance benefit. This paper explores: 1) Writing programs for efficient data pulls, 2) Macroizing program code to allow for flexible analysis constraints, 3) Using SAS® Enterprise Guide® Tasks for analysis, and 4) Demonstrating business intelligence via built-in graph options.

No paper was submitted for publication.

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Paper 175-2013

Employee Wellness Programming Using SAS® Enterprise Guide®

Yehia Khalil, Norton Healthcare
Tina Hembree, Norton Healthcare
Sandra Brooks, Norton Healthcare

ABSTRACT

More businesses are using employee wellness programs to improve the health of their employees (improve productivity levels, reduce absenteeism, and reduce disability claims) while at the same time reducing health care costs. The success of any wellness program depends on two main rudiments. One: identify factors that drive up health care costs in the organization such as smoking, obesity, chronic conditions, and others. Two: achieve adequate employee engagement level in wellness programs and identify barriers to achieving this level. The real challenge for any wellness program is to incorporate the different data sources such as health risk assessments (HRAs), demographics, medical claims data, and focus group reports to build a comprehensive wellness program that considers the various needs of the business population.

No paper was submitted for publication.

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Paper 176-2013

Easy Button: A Process for Generating Standardized Safety- and Non-Safety- Related Clinical Trial Reports

Xiangchen Cui, Vertex Pharmaceuticals, Inc.
Mominul Islam, Vertex Pharmaceuticals
Sanjiv Ramalingam, Vertex Pharmaceuticals Inc.
Jiannan Hu, Vertex Pharmaceuticals, Inc.
Yanwei Han, Vertex

ABSTRACT

SAS has developed SAS® macros and template SAS programs based on its standard (tables, figures, and listings) TFL shells for safety and non-safety analysis. The new process includes developing reporting macros using existing department macros to generate standard TFLs. The macros were developed assuming the CDISC ADaM analysis data set standards, which enable you to minimize the number of macro parameters for efficient use of the macros by the user. The process shortens the development cycle time and facilitates the adoption from SAS programmers to clinical reporting. There is also a user manual and standard template programs. The process reduces report generation time significantly and achieves the quality by design principle.

No paper was submitted for publication.

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Paper 178-2013

Developing Your SDTM Programming Toolkit

David Scocca, Rho, Inc.

ABSTRACT

Data standards such as the Study Data Tabulation Model (SDTM) make programmer's lives simpler but more repetitive. The similarity across studies of SDTM domain structures and relationships presents opportunities for code standardization and re-use. This paper discusses the development and use of tools to simplify the process of creating SDTM data sets, with examples of common tasks and the code to implement those tasks. It also discusses the usefulness of a metadata system and presents a general specification for an interface for accessing metadata. Examples include mapping study visits, parsing dates, and standardizing test codes.

No paper was submitted for publication.

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Paper 181-2013

Doctoring Your Clinical Trial with Adaptive Randomization: SAS® Macros to Perform Adaptive Randomization

Jenna Colavincenzo, University of Pittsburgh

ABSTRACT

Adaptive randomization schemes have become increasingly common in beginning stages of clinical trials and in small clinical trials. This paper introduces two kinds of adaptive randomization schemes (treatment adaptive randomization and covariate adaptive randomization) and discusses the benefits and limitations of each. In addition, this paper demonstrates how to use SAS® macros to perform these adaptive randomization schemes in a clinical setting, and how these macros can be modified to fit your randomization needs.

No paper was submitted for publication.

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Paper 495-2013

Automated and Customized Reports as a Single Image File Using Graph Template Language (GTL): A Case Study of Benchmarking Reports in Medical Research

Monarch Shah, ICON Clinical Research
Ginny Lai, ICON Late Phase & Outcomes Research
Eric Elkin, ICON

ABSTRACT

Site benchmarking reports give us an overview of demographic, clinical, and disease characteristics for the individual site with comparison to the study as a whole. A solution was needed for on-going reporting to over 250 study sites. The report needed to be concise and present data in both tables and figures. (This objective could also arise, for example, in comparing each store's performance to the entire chain or each classroom's performance to the school district.) However, creating and combining tables and figures into a document can be challenging. Graph Template Language (GTL) provides a powerful alternative to customize and automate benchmarking reports. This paper will focus on using GTL to create panels comprised of descriptive tables and multiple graphs into a single image file.

No paper was submitted for publication.

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Paper 496-2013

Predicting Health Care Expenditures with the MCMC Procedure

Greg Watson, UCLA Center for Health Policy Research

ABSTRACT

Substantial variation, excess zeros, skew and extreme outliers make fitting and predicting health care expenditures rather difficult. This paper presents a Bayesian model that uses the first year of the fourteenth panel (2009-2010) of the nationally representative Medical Expenditures Panel Survey (MEPS) to predict health care expenditures for individuals in the second year. The merits of a Bayesian approach are examined and compared to classical alternatives. Implementation in the MCMC procedure is presented in detail, and model diagnostics and validation are discussed.

No paper was submitted for publication.

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Paper 182-2013

SAS® Skill Learning and Certification Preparation in a Graduate School Setting

Christine Bonney, University of Pennsylvania
Michael Keith, Jr., University of Pennsylvania

ABSTRACT

A semester-long course was created with the goal of teaching graduate students SAS® programming skills and to prepare them to take the SAS® Certified Base Programming for SAS®9 exam. Course activities and materials include: weekly lectures; in-class labs; take-home problem sets; virtual (online) labs; assigned readings from the “SAS® Certification Prep Guide: Base Programming for SAS®9”; midterm and final exams; and access to SAS® OnDemand for Academics. This paper covers the details of the course development and design, as well as preliminary results from the course and plans for future developments.

No paper was submitted for publication.

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Paper 183-2013

Considerations for Creating an In-House SAS® User Group in a Geographically Disbursed Organization

Stefanie Reay, Qualex Consulting Services, Inc.

ABSTRACT

This presentation will review considerations for creating in-house SAS® user groups in geographically disbursed organizations, in which in-person user group meetings are not cost-effective or not feasible, but for which an in-house SAS user group would still be beneficial. It defines in-house SAS user groups, and overviews the resources available from SAS for starting and continuing an in-house SAS user group. It discusses benefits and challenges of starting/maintaining an in-house SAS user group, options for organizational structures of in-house SAS user groups, and unique needs for a group of this nature to be successful in national and global organizations. It also reviews technologies that could be beneficial for bridging the communication gap in a user group of this type.

No paper was submitted for publication.

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Paper 185-2013

Coaching SAS® Beginner Programmers: Common Problems and Some Solutions

Peter Timusk, Statistics Canada

ABSTRACT

This paper will present a number of problems SAS® beginner programmers encounter when first writing SAS programs. The paper will cover three cases and show how pointing out patterns to beginner programmers will aid them in avoiding errors in their SAS code.

No paper was submitted for publication.

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Paper 186-2013

A CareerView Mirror: Another Perspective on Your Work and Career Planning

Bill Donovan, Ockham Source

ABSTRACT

Career planning in today's tumultuous job market place requires a more rigorous and disciplined approach that must begin with each individual tracking and evaluating distinctive skills and experiences.

With an emphasis on the SAS® professional and the career track unique to the programmers' challenges, this paper is designed to set the stage for professional reflection and career planning.

The ability to organize and inventory your entire career-related experiences is the foundation of a solid plan. The catalog of your work assignments and functional responsibilities creates a reflection of your efforts in your career to date.

All of this helps to build your CareerView Mirror, which provides another perspective on your work and career planning.

No paper was submitted for publication.

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Paper 187-2013

Gotchas: Hidden Workplace and Career Traps to Avoid

Steve Noga, Rho

ABSTRACT

Being successful at your job takes more than just completing your tasks accurately and on time. There are hidden holes everywhere, some deeper than others, that must be navigated; yet no map exists for you to follow. Most companies have a set of stated policies or rules that their employees are expected to follow, but what about the unstated ones that may have an effect on how fast or how far you advance within the company? Hidden traps also exist along the way of your career path. This panel discussion will highlight some “gotchas” of which you should be aware and ways to keep from falling into the holes.

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Paper 188-2013

Communicating Standards: A Code Review Experience

David Scocca, Rho, Inc.

ABSTRACT

We need ways to pass along good programming practices. All but the smallest companies will have programmers with varying levels of tenure and experience. Standards and best practices change, but in a deadline-driven world, we re-use old programs with minimal revision. Programmers develop habits and can be slow to incorporate new approaches that might simplify code or improve performance.

We developed and rolled out an in-house code review process to address these issues. This paper reports our strategy for promoting and performing the reviews and describes the results.

No paper was submitted for publication.

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Paper 189-2013

If You Have Programming Standards, Please Raise Your Hand: An Everyman's Guide

Dianne Louise Rhodes, US Census Bureau

ABSTRACT

This paper goes through a step-by-step process of developing programming standards, classifying them, and entering them into a database. This database can then be used to develop style sheets and check lists for peer review and testing. Through peer reviews and in preparation for them, programmers learn good programming practices. We describe in detail the most common standards, and why and how they should be applied.

No paper was submitted for publication.

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Paper 191-2013

SAS® Certification: Understand the Benefits of SAS Certification, Which SAS Certifications Are Available, and What SAS Certification Can Do for You

Andrew Howell, ANJ Group Pty Ltd

ABSTRACT

SAS® has long had certification available for its programming language and for its flagship data mining product, SAS® Enterprise Miner™. More recently with the release of the SAS®9 platform suite have come certifications in SAS® Data Integration Studio, SAS® Business Intelligence, and SAS® Platform Administration. But what are the benefits (and some of the misconceptions) of SAS Certification? What is available, and what's in it for organizations, their staff and for SAS consultants to become SAS Certified?

No paper was submitted for publication.

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Paper 193-2013

Creating an Interactive SAS® E-Textbook with iBooks Author for the iPad

William Zupko, U. S. Census Bureau

ABSTRACT

Mobile media is becoming more popular and prevalent in today's workplace. Even though few apps on the iPad actively run SAS® programs, the iPad can be utilized as a teaching tool and reference database. iBooks Author allows for the creation of interactive textbooks from anybody that allow users to learn SAS in a self-paced environment. Widgets allow screenshots to show how programs are run and use reviews to check comprehension. These widgets also allow the inclusion of Keynote slides. These interactive textbooks are especially excellent for SAS conferences, as the text can be applied directly and include PowerPoint presentations, creating a mobile library that can be used in an easily accessible format, perfect for reference or training.

No paper was submitted for publication.

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Paper 194-2013

Create a Nomogram with SGPlot

Cynthia Loman, Genomic Health Inc

ABSTRACT

The nomogram that I created shows the relative values of four predictors from a logistic model along with a line showing cumulative model score and cumulative model risk. I have programmed it with PROC SGPLOT and used natural splines for one of the variables in my model. I used prostate cancer data for my example.

No paper was submitted for publication.

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Paper 195-2013

Using SAS to Create Code for Current Triage Systems during Chemical Incidents

Abbas Tavakoli, University of South Carolina
Erik Svendsen, University of tulane
Jean Craig, MUSC
Joan Culley, University of South Carolina

ABSTRACT

Chemical incidents involving irritant chemicals such as chlorine pose a significant threat to life and require rapid assessment. This paper used the first outcomes-level study (R21 NIH) involving an actual mass casualty chemical incident to create code for four triage systems (CBRN, SALT, START, and ESI). Data used for this paper, which come from six datasets collected by the project team from a 60-ton railroad chlorine leak in 2005 in Graniteville, South Carolina, include patient demographics, exposure estimates, symptoms, outcome categories, and physiological measurements. Data collected for approximately 900 victims of the chlorine leak were merged to generate a research dataset. SAS® 9.2 was used to create code from logic to mimic the triage decision tree, yielding classifications for each system.

No paper was submitted for publication.

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Paper 196-2013

SAS® Essentials: Maximize the Efficiency of Your Most Basic Users

Julie Kezik, Yale University
Melissa Hill, Yale University

ABSTRACT

If programming and research assistants were taught SAS® essentials, job efficiency could be maximized with the ability to use SAS as a tool to do their own preparatory work for assigned tasks. This paper summarizes a supplemental training program which teaches basic SAS programming skills to enable support staff to be more independent.

No paper was submitted for publication.

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Paper 198-2013

Using CALL SYMPUT to Generate Dynamic Columns in Reports

Sai Ma, pharmanet-i3
Suwen Li, Everest Clinical Research Services, Inc.
Regan Li, Hoffmann-La Roche Limited
Bob Lan, Everest Clinical Research Services, Inc.

ABSTRACT

When creating reports, we often want to make the report respond dynamically to data. If the headers and the number of columns in the report are unknown, it is helpful when they change dynamically depending on the data. As a powerful SAS® procedure, PROC TABULATE can produce dynamic results in most cases. This paper describes how to use the CALL SYMPUT routine and PROC REPORT to generate dynamic columns in reports in cases where PROC TABULATE does not yield the desired results.

No paper was submitted for publication.

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Paper 199-2013

From SDTM to ADaM

Sai Ma, pharmanet-i3
Suwen Li, Everest Clinical Research Services, Inc.
Regan Li, Hoffmann-La Roche Limited
Bob Lan, Everest Clinical Research Services, Inc.

ABSTRACT

The use of SDTM and ADaM standards are highly desirable in FDA guidances. More and more sponsors submit both of these standards to regulatory authorities. When SDTM data sets are more common, ADaM is usually derived from SDTM. However, the SDTM distinctive data structure causes problems when deriving ADaM data. This paper describes problems encountered when deriving ADaM data and provides resolutions and examples.

No paper was submitted for publication.

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Paper 200-2013

Exploring the PROC SQL _METHOD Option

Charlie Shipp, Consider Consulting, Inc.
Kirk Paul Lafler, Software Intelligence Corporation

ABSTRACT

The SQL procedure has powerful options for users to take advantage of. This presentation explores the fully supported _METHOD option as an applications development and tuning tool. Attendees learn how to use this powerful option to better understand and control how a query processes.

No paper was submitted for publication.

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Paper 201-2013

A Practical Approach to Creating Define.XML by Using SDTM Specifications and Excel functions

Amos Shu, Endo Pharmaceuticals

ABSTRACT

Define.xml (Case Report Tabulation Data Definition Specification) is a part of new drug submission required by the FDA. Clinical SAS® programmers usually use SAS programming [1, 2, 3, 4, 5] to generate the code of Define.xml as described in the CDISC Case Report Tabulation Data Definition Specification (define.xml) V1.0.0 [6]. This paper illustrates the process of using SDTM specifications and Excel functions to generate the code of Define.xml in an easy and straightforward way.

No paper was submitted for publication.

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Paper 203-2013

Extending the Power of Base SAS® with Microsoft Excel

Shilpa Khambhati, Mathematca Policy Research Inc.

ABSTRACT

The SAS Macro Language is an invaluable SAS tool that can be used for iterative SAS data processing, eliminating redundancy in SAS code. Using the SAS Macro Language with Microsoft Excel makes programming tasks even easier. This paper describes using the SAS Macro Language and Microsoft Excel to automatically generate customized reports. The proposed method uses Excel macros to drive SAS macros without having to open SAS programs and manually upgrade parameters specific for each site's data when the data becomes available. The process eliminates manually editing SAS programs and improves data quality by reducing programming error and program maintenance time.

No paper was submitted for publication.

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Paper 204-2013

Using LinkedIn to Find Your Next SAS® Job

Tricia Aanderud, And Data Inc

ABSTRACT

LinkedIn is fast becoming a great place for SAS® recruiters and SAS candidates to meet. If you are looking for a job, this poster provides some tips to spiff up your LinkedIn profile to get the SAS programming job of your dreams.

No paper was submitted for publication.

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Paper 205-2013

Selection Group Prompts with SAS® Stored Processes: More Power, Less Programming

Tricia Aanderud, And Data Inc
Angela Hall, SAS

ABSTRACT

Many programmers either do not know or understand how to use the selection group prompts to make advanced stored processes a little easier to manage. Many times, end users have these crazy requirements and a programmer can use the selection group prompt instead of writing 10 different stored processes.

No paper was submitted for publication.

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Paper 206-2013

A Simple Macro to Minimize Data Set Size

Amos Shu, Endo Pharmaceuticals

ABSTRACT

Whenever you submit either SDTM or ADaM data sets to FDA, if any SAS® data set is great than 1 GB in size, FDA will ask you to split the data set. In fact, since the length of a variable affects both the amount of disk space used and the number of I/O operations required to read and write the data set, resizing text columns to fit the longest value within the column is applicable to every field that uses SAS data sets in their business. To help save resources and improve data mining efficiency, this paper discusses a simple macro to minimize the size of a SAS data set.

No paper was submitted for publication.

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Paper 207-2013

Basel II Advanced IRB in Commercial Banking: Quantify the Borrower and Guarantor by Two-Step Scoring Model

Hengrui Qu, Citi Group Inc.
juan zhao, Citi Group Inc

ABSTRACT

For public companies, the probability of default usually adopts well-known structural and reduced form credit risk models. However, in commercial lending, there are large portfolios of unlisted companies, which could not use these two approaches. Furthermore, privately held companies commonly get a guarantor to enhance their credibility during loan application. Unlike the single logistic model used for retail credit risk analysis, two- step credit scoring models could be used to quantify both borrower and guarantor's risk exposed to unlisted companies based on the limited information maximum likelihood. This paper will focus on how to quantify the risk for commercial borrowers with guaranty by two-step scoring model, which provides Basel II advanced IRB risk measure: the PD for the commercial customer and transaction.

No paper was submitted for publication.

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Paper 208-2013

A Unique Approach to Create Custom Reports By Leveraging the Strengths of SAS® and Excel

Amy Overby Wilkerson, RTI International
Brett Anderson, RTI International
Barbara Bibb, RTI International
Mai Nguyen, RTI International

ABSTRACT

Survey projects often require custom reports to allow project staff to monitor production as well as various statistics from the collected data. At RTI, we've come up with a unique approach for creating custom reports for our projects by leveraging the strengths of SAS® and Excel. In SAS, we use PROC SQL to select and when necessary aggregate data. After processing the data in SAS, results are sent to Excel for reporting and graphics. In our paper, we will present a few sample reports, program codes and the detailed explanations of how these reports were created.

No paper was submitted for publication.

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Paper 209-2013

Working with a Large Pharmacy Database: Hash and Conquer.

David Izrael, Abt Associates

ABSTRACT

Working with a large pharmacy database means having to process - merge, sort, and summarize - hundreds of millions of observations. By themselves, traditional methods of processing can lead to prohibitive data processing times that endanger deadlines. The hash object is the fastest and most versatile method in the SAS® system of substantially accelerating the processing. In our paper, we apply hash methods to a routine lookup function where one needs to merge the kernel pharmacy database with its satellites. We also present comparatively new nontraditional features of the hash object, such as handling duplicate keys and finding frequency counters. At the same time, we underscore the necessity of traditional sort-and-merge methods, but suggest that they be used carefully.

No paper was submitted for publication.

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Paper 213-2013

Weighted Sequential Hot Deck Imputation: SAS® Macro vs. the SUDAAN PROC HOTDECK

David Izrael, Abt Associates
Michael Battaglia, Abt Associates Inc

ABSTRACT

Item non-response is a challenge faced by all surveys. Item non-response occurs when a respondent skips over a question, refuses to answer a question, or does not know the answer to a question. Hot deck imputation is one of the primary imputation tools used by survey statisticians. Recently, a new competitor in the field of Weighted Sequential Hotdeck Imputation has arrived: PROC HOTDECK of SUDAAN, version 10. We compared the results of imputation using the new procedure with the results of the Hotdeck SAS® Macro with respect to: a) how close the post-imputation weighted distributions and standard errors of the estimates are to those of the item respondent data; b) whether there is a difference in the number of times donors contribute to the imputation.

No paper was submitted for publication.

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Paper 215-2013

A Case Application of Propensity Score Matching in MTM Outcomes Evaluation at Retail Pharmacy

Michael Taitel, Walgreens
Zhongwen Huang, Walgreens
Yubei Lou, Walgreens

ABSTRACT

Propensity score matching approaches in outcomes analysis are often used to reduce the potential bias in observational studies. The process includes propensity score estimation, matching and evaluation. This paper presents a case application in Outcome Evaluation of Medication Therapy Management at Retail Pharmacy. Baseline outcome metrics, which do not appear in the propensity score estimation model, were checked for balance later to detect if there are any important covariates that affect both treatment and outcomes have been neglected. In addition, by appropriately selecting variables in retail pharmacy environment, one matching for multiple outcomes analysis, which works as a pseudo randomization study, can improve efficiency.

No paper was submitted for publication.

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Paper 216-2013

Using SAS® to Expand the Application of Standard Measures and Guide Statistical Explorations: Creating Healthy Eating Index Scores Using Nutrition Data System for Research Output

David Ludwig, University of Miami
David Landy, University of Miami Miller School of Medicine
Joy Kurtz, Univ. of Miami
Tracie Miller, University of Miami

ABSTRACT

We created a SAS® program to calculate a measure of diet quality, the Healthy Eating Index (HEI, <http://www.cnpp.usda.gov/HealthyEatingIndex.htm>), using output from a widely applied dietary software package, Nutrition Data System for Research (NDSR, <http://www.ncc.umn.edu/products/ndsr.html>). Currently, application of the HEI in research and clinical assessment is limited by the challenges posed in calculating the HEI using the highly complex and detailed NDSR output. The SAS program extracts the required NDSR output files and then calculates the combination of algebraic manipulations and logical statements to obtain HEI scores. We also offer suggestions for increasing usability, such as with the %INCLUDE statement, and show how the program can be used to explore related statistical issues such as reliability via PROC MIXED.

No paper was submitted for publication.

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Paper 217-2013

A SAS® Macro for Generating a Set of All Possible Samples with Unequal Probabilities without Replacement

Alan Silva, Universidade de Brasilia
IGOR NASCIMENTO, UNB

ABSTRACT

This paper considers listing all possible samples of size n with unequal probabilities without replacement in order to find the sample distribution. The main application of that is to estimate the Horvitz-Thompson (HT) estimator and possibly to know the shape of its sample distribution to construct confidence intervals. The algorithm computes all possible samples of the population, in contrast with PROC SURVEYSELECT which generates any samples of size n , but not all possible samples, and at the end it is possible to plot the sample distribution of the estimator. The equations are encoded in a SAS/IML® macro and the graphics are made using PROC GPLOT.

No paper was submitted for publication.

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Paper 218-2013

Here Is How We Do It: Teaching SAS® at Community Colleges

Meili Xu, Ohlone College

ABSTRACT

Data is everywhere today, and SAS® programming skills are in high demand. Providing community college students with SAS skills is extremely valuable in preparing them for real-world job positions right after taking the classes. In this paper, we will describe our experience and approaches to teaching SAS to our students at Ohlone College. With the paper presentation at the conference, we wish to instigate a dialogue among other educators teaching SAS to share ideas and resources so that we may all better equip students with strong SAS skills that will serve them well in their future careers. At the workshop, you may also have an opportunity to gain some hands-on experience on basic SAS procedures.

No paper was submitted for publication.

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Paper 220-2013

Propensity Score-Based Analysis of Short-Term Complications in Patients with Lumbar Discectomy in the ACS-NSQIP Database

Yubo Gao, University of Iowa

ABSTRACT

Lumbar discectomy is the most common spinal procedure performed, and it can be done on an outpatient basis. In this study, we want to compare the incidence of complications in patients undergoing single-level lumbar discectomy between the inpatient and outpatient settings, to determine baseline 30-day complication rates, and to identify independent risk factors for complications. To achieve those, patients undergoing lumbar discectomy between 2005 and 2010 were selected from the ACS-NSQIP database, based on a single primary CPT code. Thirty-day post-operative complications and pre-operative patient characteristics were identified and compared. Propensity score matching and multivariate logistic regression analysis were used to adjust for selection bias and identify predictors of 30-day morbidity. All analyses are performed via SAS® software.

No paper was submitted for publication.

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Paper 221-2013

Recovering SAS® User Group Proceedings for the SAS® Community

Lex Jansen, lexjansen.com
Richard La Valley, Strategic Technology Solutions
Kirk Paul Lafler, Software Intelligence Corporation

ABSTRACT

For many years, SAS® User Groups held conferences whose proceedings were available only in print and only to those who attended or those who knew that copies existed in the SAS Library in Cary, NC. Over the past couple of years, there has been a project to digitize the printed proceedings of SAS User Groups International, SAS European Users Group International, NorthEast SAS Users Group, SouthEast SAS Users Group, Western Users of SAS Software, South-Central SAS Users' Group, MidWest SAS Users Group, and the Pacific Northwest SAS Users Group. This paper provides an overview of the project and the progress that has been made on this effort.

No paper was submitted for publication.

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Paper 223-2013

GEN_ETA2: A SAS® Macro for Computing the Generalized Eta-Squared Effect Size Associated with Analysis of Variance Models

Patricia Rodriguez de Gil, University of South Florida
Thanh Pham, University of South Florida
Patrice Rasmussen, 5336 Clover Mist Drive
Anh Kellermann, USF
Jeanine Romano, University of South Florida
Yi-Hsin Chen, University of South Florida
Jeffrey Kromrey, University of South Florida

ABSTRACT

Measures of effect size are recommended to communicate information on the strength of relationships between variables. Such information supplements the reject / fail-to-reject decision obtained in statistical hypothesis testing. The choice of an effect size for ANOVA models can be confusing because indices may differ depending on the research design as well as the magnitude of the effect. Olejnik and Algina (2003) proposed the generalized eta-squared effect size which is comparable across a wide variety of research designs. This paper provides a SAS® macro for computing the generalized eta-squared effect size associated with analysis of variance models by utilizing data from PROC GLM ODS tables. The paper provides the macro programming language, as well as results from an executed example of the macro.

No paper was submitted for publication.

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Paper 225-2013

Linking Laboratory Data To Submission Documents Using SAS® Technologies

Dongmin Shen, Merck & Co, Inc

ABSTRACT

Merck is a global pharmaceutical company and so the sources of our data are global. Having the ability to link and transfer massive amounts of analytical data from various data sources into submission documents in an efficient and reproducible way is critical to producing successful regulatory submissions. SAS® technologies have been used to create various solutions ranging from data extractions, to data transformations, to documents generated in support of simultaneous worldwide new drug applications.

No paper was submitted for publication.

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Paper 225-2013

Linking Laboratory Data To Submission Documents Using SAS® Technologies

Miu Ling Lau, Merck & Co.

ABSTRACT

Merck is a global pharmaceutical company and so the sources of our data are global. Having the ability to link and transfer massive amounts of analytical data from various data sources into submission documents in an efficient and reproducible way is critical to producing successful regulatory submissions. SAS® technologies have been used to create various solutions ranging from data extractions, to data transformations, to documents generated in support of simultaneous worldwide new drug applications.

No paper was submitted for publication.

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Paper 226-2013

Presenting Business Cases That Contain Complex, Technical Information to a Varied Audience

Stephen Moore, US Census Bureau
Lori Guido, US Census Bureau

ABSTRACT

The U.S. Census Bureau has a SAS® user base of approximately 2,600 users, which the Software Application Branch (SADB) of the Applications Services Division supports. In order to obtain the resources needed to provide the support the users community needed, we had to figure out how to herd cats. We had to gather information, enlist help from many sources, and get everyone involved in the effort on the same level of understanding and agreement. This paper describes the method SADB used to justify the expansion of the Census SAS Support area from two to eight people. This paper focuses on the following topics: the Census SAS support model, issue definition, issue leveling, and communication strategy.

No paper was submitted for publication.

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Paper 228-2013

Variance Heterogeneity and Non-Normality: How the SAS® TTEST Procedure Can Keep Us Honest

Anh Kellermann, USF
Aarti Bellara, University of South Florida
Patricia Rodriguez de Gil, University of South Florida
Diep Nguyen, University of South Florida
Eun Sook Kim, University of South Florida
Yi-Hsin Chen, University of South Florida
Jeffrey Kromrey, University of South Florida

ABSTRACT

The independent samples t-test is one of the most used tests for detecting true mean differences. The SAS® System provides PROC TTEST, which is an easy way to conduct a test for the difference between two population means by assuming homogeneity of variance or avoiding it. However, the t-test and its alternatives (Satterthwaite's approximate test and conditional t-test) assume population normality; therefore, questions about the performance of conditional testing when the assumption of normality is not met remain. This paper describes previous research on preliminary tests under the normality assumption, extends this research to the evaluation of conditional testing to departures of normality, and provides guidance to researchers on the proper use of this test with non-normal, heteroscedastic population distributions.

No paper was submitted for publication.

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Paper 229-2013

Here Comes Your File! File-Watcher Tool with Automated SAS® Program Trigger

Rajbir Chadha, Cognizant Technology Solutions

ABSTRACT

This paper talks about a file-watcher tool (UNIX Shell Script) that searches for files and checks when they were last updated. Parameters to the file-watcher tool are supplied using a 'wrapper' script. Script is scheduled using a 'CRON' scheduler in UNIX. Once file is found, SAS program is triggered. If file is not found or not updated the script terminates. Tool sends out e-mails when files are available and when SAS program completes execution or script terminates. In case of errors, users can refer to the file-watcher logs at a location specified in the CRON file. The file-watcher tool reduces average wait time and manual effort for users by automating most of the process, allowing them to focus on other pressing tasks.

No paper was submitted for publication.

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Paper 230-2013

Why the Bell Tolls 108 Times? Stepping through Time with SAS®

Peter Eberhardt, Fernwood Consulting Group Inc

ABSTRACT

For many SAS® programmers, the use of SAS date and datetime variables is often very confusing. This paper addresses the problems that the most of programmers have. It starts by looking at the basic underlying difference between the data representation and the visual representation of date, datetime, and time variables. From there, it discusses how to change data representations into visual representations through the use of SAS formats. The paper also discusses date arithmetic first by demonstrating the use of simple arithmetic to increment dates; then by moving on to SAS functions which create, extract, and manipulate SAS date variables. This paper is introductory and focuses on new SAS programmers; however, some advanced topics are also covered.

No paper was submitted for publication.

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Paper 231-2013

Implementing CDISC, SDTM, and ADaM in a SAS® Environment

Pankaj Bhardwaj, Tata Consultancy Services

ABSTRACT

Key challenges for regulatory bodies like FDA are non-standardized data (almost 50% of the submissions) and its non-traceability. Reviewers cannot streamline their review processes.

A lot of work is happening in this direction, and there is the expectation that all submissions will need to be in standardized format by 2015 or so.

This paper helps in building a metadata-oriented, flexible, GUI-based solution for implementing the CDISC and ADaM standards in a SAS® environment with following steps:

1. Efficiently set up CDISC and ADaM metadata in SAS data sets, considering important aspects like CDISC amendments and customization.
2. SAS coding environment for handling legacy, ongoing and future trials.
3. Generalized SAS validation codes for validation at the source data, SDTM, and ADaMs level.
4. The submission deliverables.

No paper was submitted for publication.

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Paper 232-2013

Weathering the Storm: Using Predictive Analytics to Minimize Utility Outages

Mark Konya, Ameren Missouri
Kathy Ball, SAS

ABSTRACT

Due to ever-increasing customer service expectations an ongoing challenge for utilities is maintaining and improving the reliability of their electric distribution systems. With significant numbers of transformers and meters at risk of losing power during major storms, how can a Distribution Engineer make sense of thousands of data points to prevent outages before a storm occurs and, for customers whose power is interrupted during a storm, restore service faster? Distribution Optimization equips utility engineers and dispatchers to predict which assets will be affected by storms while optimizing the placement of crews, thus decreasing outage restoration times. Combining geospatial visualization with predictive analytics, the predictive enterprise utility can shorten outages from weather events and identify weak points in the electrical distribution system thus preventing future outages.

No paper was submitted for publication.

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Paper 233-2013

What Score Should Johnny Get? Missing_Items SAS® Macro for Analyzing Missing Item Responses on Summative Scales

Patricia Rodriguez de Gil, University of South Florida
Jeffrey Kromrey, University of South Florida

ABSTRACT

Missing data are usually not the focus of any given study but researchers frequently encounter missing data when conducting empirical research. Missing data for Likert-type response scales, whose items are often combined to make summative scales, are particularly problematic because of the nature of the constructs typically measured, such as attitudes and opinions. This paper provides a SAS® macro, written in SAS/IML® and SAS/STAT®, for imputation of missing item responses that allows estimation of person-level means or sums across items in the scale. Imputations are obtained using multiple imputation (MI), single regression substitution (SRS), relative mean substitution (RMS), and person mean substitution (PMS). In addition, the results of a simulation study comparing the accuracy and precision of the imputation methods are summarized.

No paper was submitted for publication.

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Paper 234-2013

A Preventive Approach for Automatic Checking of CDISC ADaM Metadata to Detect Noncompliance

Min Chen, Vertex Pharmaceuticals, Inc.
Xiangchen Cui, Vertex Pharmaceuticals, Inc.
Tathabbai Pakalapati, CYTEL INC.

ABSTRACT

The ADaM programming specification serves as the primary source for ADaM programming, Define.xml, and reviewer guide. It should meet FDA requirements and follow CDISC ADaM guidelines. OpenCDISC Validator is a very useful tool to check the compliance with CDISC models. Sometimes it is too late and/or costly to fix the errors identified by the tool. This paper introduces a preventive approach to check metadata compliance with ADaM guidelines at an earlier stage even before actual ADaM data set programming thereby avoiding the waste of time and resources for correction at a later stage. It also automatically ensures the consistency of variable attributes between ADaM data sets and the define files, which guarantees technical accuracy and operational efficiency.

No paper was submitted for publication.

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Paper 235-2013

Building Traceability for End Points in Analysis Data Sets Using SRCDOM, SRCVAR, and SRCSEQ Triplet

Xiangchen Cui, Vertex Pharmaceuticals, Inc.
Tathabbai Pakalapati, CYTEL INC.

ABSTRACT

To be compliant with ADaM Implementation Guide V1.0, traceability features should be incorporated to possible extent in analysis data sets. SRCDOM, SRCVAR, and SRCSEQ triplet are used to establish data point traceability in ADaM data sets. This paper provides various examples of applying the triplet to establish traceability in efficacy ADaM data sets, and shows the art of applying the triplet to different scenarios.

No paper was submitted for publication.

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Paper 235-2013

Building Traceability for End Points in Analysis Data Sets Using SRCDOM, SRCVAR, and SRCSEQ Triplet

Qunming Dong, Vertex
Tathabbai Pakalapati, CYTEL INC.

ABSTRACT

To be compliant with ADaM Implementation Guide V1.0, traceability features should be incorporated to possible extent in analysis data sets. SRCDOM, SRCVAR, and SRCSEQ triplet are used to establish data point traceability in ADaM data sets. This paper provides various examples of applying the triplet to establish traceability in efficacy ADaM data sets, and shows the art of applying the triplet to different scenarios.

No paper was submitted for publication.

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Paper 236-2013

SAS® Admin's Best Friend - The Set-up and Usage of RTRACE Option

Airaha Chelvakkanthan Manickam, Cognizant Technology Solutions
Srikanth Thota, Cognizant Technology Solutions

ABSTRACT

The SAS® license of any organization includes various SAS components such as SAS/STAT®, SAS/GRAPH®, SAS/OR®, etc. How does a SAS Administrator know how many of the licensed components are actively used, how many SAS users are actively utilizing the server, and how many SAS data sets are frequently referenced? These questions help a SAS administrator make important decisions such as controlling SAS licenses, removing inactive SAS users, purging long-time non-referenced SAS data sets, etc. SAS provides a system parameter called RTRACE to answer these questions. The goal of this paper is to explain the set-up of the RTRACE parameter and to explain its usage in making the SAS administrator's life easy. This paper is based on SAS® 9.2 running on AIX 6.1 operating system.

No paper was submitted for publication.

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Paper 237-2013

SAS® Stored Processes Logging

Bhargav Achanta, Reata Pharmaceuticals

ABSTRACT

You and your colleagues work very hard to create stored processes and deliver them to various departments in your organization to review the reports on regular basis and on time. Have you ever wondered how many of the reports you provide to the audience are actually being used? This paper presents a neat way to identify who ran the stored processes and what time they have run the stored processes by scanning all the stored process server log files and generates a list report and a frequency report.

No paper was submitted for publication.

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Paper 238-2013

Creating a Management-Friendly HTML Report Using SAS® ODS Markup, Style Sheets, and JavaScript

Rosely Flam Zalcman, Center for Addiction and Mental Health
Robert Mann, 33 Russell St

ABSTRACT

SAS® ODS output of 127 individual tables using SAS tagsets are integrated into a single portable active HTML file. Hyperlinks and embedded JavaScript menus provide easy access to both Client Satisfaction statistics (15 pages) and Service Provider analysis (112 pages).

No paper was submitted for publication.

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Paper 239-2013

Implementation of Slowly Changing Dimension to Data Warehouse to Manage Marketing Campaigns in Banks

Lihui Wang, Singapore Management University
Michelle Cheong, Singapore Management University
Murphy Choy, Singapore Management University

ABSTRACT

In this paper, we illustrate the concept of the slowly changing dimension and how it can be utilized in an innovative manner in the data warehouse of a bank to update and maintain campaign records of customers.

No paper was submitted for publication.

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Paper 241-2013

Feature Extraction and Rating of a Smartphone Photosharing Application Using SAS® Sentiment Analysis Studio

Goutam Chakraborty, Oklahoma State University
Siddhartha Reddy Mandati, Oklahoma State University
Anil Kumar Pantangi, Oklahoma State University
Sahithi Ravuri, Oklahoma State University

ABSTRACT

Smartphone users often have to read many online reviews to find out about an application's feature. Online reviews usually provide an overall numeric rating using the Likert or semantic scale, but these reviews do not fully reveal the sentiments of customers.

In this paper, the website Google Play is considered. Google Play is a dedicated portal for all Android paid and free applications. SAS® Sentiment Analysis Studio is used to predict a review as either positive or non-positive. To extract features of the application, built-in manual rules in the rule-based model are used. In this data, the rule-based model outperformed the statistical and hybrid model. The best model helps categorize each review of the application by its features and its rating.

No paper was submitted for publication.

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Paper 243-2013

V is for Venn Diagrams

Kriss Harris, SAS Specialists

ABSTRACT

Would you like to produce Venn diagrams easily? This poster shows how you can produce stunning two-, three-, and four-way Venn diagrams by using the SAS® Graph Template Language, in particular the DRAWOVAL and DRAWTEXT statements.

From my experience, Venn diagrams have typically been created in the pharmaceutical industry by using Microsoft Excel and PowerPoint. Excel is used to first count the numbers in each group, and PowerPoint is used to generate the two- or three-way Venn diagrams. The four-way Venn diagram is largely unheard of. When someone is brave enough to tackle it manually, then working out the numbers that should go in each of the 16 groups and inputting the right number into the right group is usually done nervously!

No paper was submitted for publication.

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Paper 245-2013

SAS® Grid Job Submission and Monitoring from the SAS® Information Delivery Portal

Adolfo Lopez, Valence Helath

ABSTRACT

As part of the implementation of SAS® Grid Computing at Valence Health, we realized that users would need a simple and straightforward way to submit SAS® programs to the grid from their desktops. While the SAS® Grid Manager Client Utility provides this functionality, it requires that additional software be installed on the client computer and that the user be comfortable with a command line interface. To save time and effort, we provided users with the ability to batch submit jobs to the grid and monitor them via the SAS® Information Delivery Portal. This method provided the functionality with minimal work and reduced the maintenance required to ensure that the delivered solution met the needs of the majority of our users.

No paper was submitted for publication.

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Paper 246-2013

Using Text Analysis to Gain Insight into Organizational Change

Musthan Kader Ibrahim Meeran Mohideen, Oklahoma State University
Jiawen Liu, Oklahoma State University
Goutam Chakraborty, Oklahoma State University
Gary Gaethe, U of Iowa
Douglas Van Daele, University of Iowa Healthcare

ABSTRACT

Businesses often implement changes to improve customer satisfaction, increase revenue, or improve profitability. The best situation occurs when a business can measure the impact of the change before and after making organizational changes. This research analyzes data from a survey of more than 30,000 patients from a midwestern university teaching hospital. We consider the impact of two very different changes: a move from free parking to paid parking in 2009, and the implementation of a new online portal designed so that patients can access their medical information. We first analyzed the quantitative data using a key business metric and then applied text mining and sentiment mining analysis procedures using the qualitative data to gain deeper insights.

No paper was submitted for publication.

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Paper 247-2013

So Many Films, So Little Time

Lisa Eckler, Lisa Eckler Consulting Inc.

ABSTRACT

The Toronto International Film Festival ("TIFF") is an annual event, screening a huge variety of new films for the international film industry as well as the general public. The number of choices means selecting which films to order tickets for can be overwhelming. I suffer the occupational hazard of considering every logic problem in terms of SAS® code. Here we explore how to use some very simple code to explore scheduling options which will support decision-making with the goal of seeing the most films from a priority list in the most enjoyable way. While many of us use SAS for efficiency in our work, this is a small example of how it can also be beneficial for personal time.

No paper was submitted for publication.

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Paper 250-2013

Feature-Based Sentiment Analysis on Android App Reviews Using SAS® Text Miner and SAS® Sentiment Analysis Studio

Jiawen Liu, Oklahoma State University
Mantosh Kumar Sarkar, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Sentiment analysis is a popular technique for summarizing and analyzing consumer textual reviews about products and services. There are two major approaches for performing sentiment analysis—the statistical model-based approach and the Natural Language Processing NLP-based approach. In this paper, text mining is applied first to extract the features of Android apps. Next, the NLP approach for writing rules is used. Reviews of two recent apps are considered; a widget app from the Brain& Puzzle category and a game app from the Personalization category. Six hundred textual reviews are extracted for each app from the Google Play Android App Store. Testing results show that for both apps, the carefully designed NLP rule-based model outperforms the default statistical model for predicting sentiments and providing deeper insights.

No paper was submitted for publication.

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Paper 251-2013

Analysis of Change in Sentiments towards Chick-fil-A after Dan Cathy's Statement about Same-Sex Marriage Using SAS® Text Miner and SAS® Sentiment Analysis Studio

Swati Grover, Student
Jeffin Jacob, Student, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Social media analysis along with text analytics is playing a very important role in keeping a tab on consumer sentiments. Tweets posted on Twitter are one of the best ways to analyze customers' sentiments following any post-corporate event. Although there are a lot of tweets, only a fraction of them are relevant to a specific business event. This paper demonstrates application of SAS® Text Miner and SAS® Sentiment Analysis Studio to perform text mining and sentiment analysis on tweets written about Chick-fil-A before and after the company's president's statement supporting traditional marriage. We find there is a huge increase in negative sentiments immediately following the company president's statement. We also track and show that the change in sentiment persists through an extended period of time.

No paper was submitted for publication.

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Paper 252-2013

Analyzing Partially Confounded Factorial Conjoint Choice Experiments Using SAS/IML®

Song Lin Ng, Universiti Tunku Abdul Rahman

ABSTRACT

A 2^8 partially confounded factorial design with two replicates was applied to CCE in this study. In this study, all the responses were assumed to be independent and hence the multinomial logit model follows. The log likelihood is nonlinear and hence the Newton-Raphson method is needed to estimate the parameters. PROC IML was used to generate the Newton-Raphson procedures. The result showed that all main effects and some of the first-order interaction effects were significant.

No paper was submitted for publication.

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Paper 252-2013

Analyzing Partially Confounded Factorial Conjoint Choice Experiments Using SAS/IML®

Chin Khian Yong, Universiti Tunku Abdul Rahman

ABSTRACT

A 2⁸ partially confounded factorial design with two replicate was applied to CCE in this study. In this study, all the responses were assumed to be independent and hence the multinomial logit model follows. The log likelihood is nonlinear and hence the newton-raphson method is needed to estimate the parameters. PROC IML was used to generated the Newton-Raphson procedures. The result showed that all main effects and some of the first-order interaction effects were significant.

No paper was submitted for publication.

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Paper 253-2013

SAS Training for STD Grantees

Robert Nelson, CDC
Molly Dowling, CDC
Delicia Carey, CDC

ABSTRACT

The efficient and effective use of STD surveillance data for programmatic decision-making is critical to state and local STD programs. SAS software is well-suited to help realize this goal and is available from CDC at no-cost to state and local STD grantees. The Division of STD Prevention at CDC has developed a SAS training course for STD grantees, SASSI, to help meet this need. To make the training useful to users at all levels of experience, each module is designed to stand alone. Realistic data and real-world examples are used to help ensure relevance to the target audience and state and local STD program staff were engaged at all phases of development. For more information, visit <http://www.cdc.gov/std/>.

No paper was submitted for publication.

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Paper 254-2013

A Comparison of Model Building via RPM in SAS® Enterprise Guide® versus SAS® Enterprise Miner™

Srikar Rayabaram, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Today, most large organizations use analytics for better decision making. Even with the widespread availability of point-and-click interfaces for advanced predicting modeling and analytics software such as SAS® Enterprise Miner™, building good predictive models still requires analysts to pre-process and manipulate data. The job of pre-processing, configuring, and comparing requires a person with deep statistical or data modeling knowledge which large businesses can afford but this is not the case with SMEs.

SAS® contends that using RPM makes it very easy for a person with minimal training in the area of statistics or data modeling to quickly develop a reasonable predictive model. In this paper, we test this contention by a controlled experiment.

No paper was submitted for publication.

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Paper 255-2013

MIXED_FIT: A SAS® Macro to Assess Model Fit and Adequacy for Two-Level Linear Models

Mihaela Ene, University of South Carolina
Whitney Smiley, University of South Carolina
Bethany Bell, University of South Carolina

ABSTRACT

When estimating multilevel models, it is important for researchers to make sure their models fit their data. However, examining model fit can be quite cumbersome. We have developed the macro MIXED_FIT to help researchers assess model fit in a simple yet comprehensive way. Specifically, this paper provides a SAS® macro that incorporates changes in model fit statistics [that is, -2 log likelihood (-2LL), AIC, and BIC] as well as changes in pseudo-R². By using data from PROC MIXED ODS tables, the macro produces a comprehensive table of changes in model fit measures and allows SAS users to examine model fit in both nested and non-nested models, both in terms of statistical and practical significance without having to calculate these values by hand.

No paper was submitted for publication.

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Paper 256-2013

Optimize SAS/IML® Software Codes for Big Data Simulation

Chao Huang, Oklahoma State University
Yu Fu, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Nowadays, real-world data volume keeps growing. Simulation also creates large data sets. To speed up the processing of a large data set, vectorization is a very useful code optimization skill for many matrix languages such as R, MATLAB, and SAS/IML®. In this paper, three simulation examples in SAS/IML are used to discuss the implementation of the latest functions and operators from SAS/IML for vector-wise operations. The result shows that applying vectorization in SAS/IML significantly improves the computation performance. SAS® ODS graphics procedures are used to visualize the results.

No paper was submitted for publication.

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Paper 257-2013

Top 10 Most Powerful Functions for PROC SQL

Chao Huang, Oklahoma State University
Yu Fu, Oklahoma State University

ABSTRACT

PROC SQL is actually not a standard SAS® procedure but a distinctive subsystem with all features from SQL (structured query language). Equipped with it, SAS upgrades to a full-fledged relational database management system. In addition, PROC SQL always provides alternative ways to manage data, besides the traditional DATA step and procedures. SAS also supplies some goodies, such as its functions, to further strengthen SQL operation by PROC SQL.

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Paper 258-2013

Data Set Compression Using COMPRESS=

Srinivas Reddy Busi Reddy, Oklahoma State University

Srikar Rayabaram, Oklahoma State University

Musthan Kader Ibrahim Meeran Mohideen, Oklahoma State University

ABSTRACT

Due to increased awareness about data mining, text mining, and big data applications across all domains, the value of data has been realized and is resulting in data sets with large number of variables and increased observation size. Often it takes enormous time to process these data sets, which can have an impact on delivery timelines. In order to handle these constraints, think of making a large data set smaller by reducing the number of observations, variables, or both, or by reducing the size of the variables, without losing any of its information. In this paper, we see how a SAS® data set can be compressed by using the COMPRESS= system option. We also discuss some techniques to make this option more effective.

No paper was submitted for publication.

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Paper 259-2013

An Integrated Approach to Codebook Generation Using SAS®, HTML/CSS, and the .NET Framework

Helen Smith, RTI International
Mai Nguyen, RTI International
Elizabeth Eubanks, RTI International
Shane Trahan, RTI International

ABSTRACT

For large surveys, creating comprehensive codebooks presents many challenges. Without automation, this process becomes highly labor-intensive and error-prone with data in the codebook quickly becoming stale and failing to accurately represent underlying data sets. Another significant challenge is that information/data for codebooks can come from multiple sources. Such sources can include but not be limited to questionnaire specifications, questionnaire design systems, and other relational databases or SAS® data sets containing pertinent data. Our poster presents an integrated approach for codebook generation using modern tools and technologies, including SAS dictionary tables and SAS Integrated Object Model (IOM) for data management, HTML/CSS for codebook presentation, and the .NET framework for integrating and tying disparate pieces together into one formatted codebook.

No paper was submitted for publication.

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Paper 261-2013

Investigating the Impact of Amazon Kindle Fire HD 7” on Amazon.com Consumers Using SAS® Text Miner and SAS® Sentiment Analysis

Srihari Nagarajan, SAS Institute
Hari harasudhan Duraidhayalu, Kavi Associates
Goutam Chakraborty, Oklahoma State University

ABSTRACT

This paper demonstrates the application of text mining techniques to collect, group, and summarize positive and negative opinions of a product. Unfortunately for popular products there are too many reviews, making it difficult to read through all reviews and make an informed decision. For this purpose, we developed a tool using ASP.NET to extract 1,674 customer reviews for Kindle Fire HD 7” from Amazon.com. On the Microsoft Excel data set thus generated, text mining can be performed to summarize customer comments by grouping related reviews into clusters. The Text Parsing, Filter, Topic, and Cluster nodes are used, and outputs from every node are discussed. Sentiment analysis is performed on the data set to develop a model for classifying positive and negative reviews.

No paper was submitted for publication.

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Paper 262-2013

Practical Application of SAS® Capabilities for Pharma Goals and Performance Review

Ramya Purushothaman, Cognizant Technology Solutions

ABSTRACT

This paper discusses a Pharma application that uses SAS® to leverage internal and purchased information such as Sales and Marketing data including drug prescriptions, dollar and unit demand, target prescribers, and key customer account profiles to set goals, measure sales performance, and identify trends across geography levels. The capability of SAS to handle huge volumes of data seamlessly provides an advantage over other technologies. The reusability of SAS macros makes SAS solutions extensible across various brands, sales teams, and geography levels for reporting. All of these tasks are performed through familiar Base SAS® procedures, functions, statements, and options. The paper explains how the business need is addressed using SAS by accessing, cleansing, and transforming information.

No paper was submitted for publication.

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Paper 263-2013

Do People Still Miss Steve Jobs As the CEO of Apple Inc.? A Text Mining Approach: Comparing SAS® and R

Pranav Karnavat, Shanti Communication School
Anurag Srivastava, Decision Quotient

ABSTRACT

Marketers need information on views, expressions, need and expectation of people from social media to capitalize upon and satisfy needs and expectation of the consumers. Twitter is a powerful social media website. Tweets posted can be analyzed to get insights about relationships and patterns hidden inside the textual data. In this paper tweets were collected about Steve Jobs prior to and post his sad demise to find if customers still miss him as the CEO of Apple Inc. using text mining technique in SAS and R. Get tweet macro is used to fetch data from twitter in SAS while twitteR package is to fetch data from twitter in R. To analyze data, SAS Text Miner was used in SAS while tm package in R.

No paper was submitted for publication.

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Paper 264-2013

Build Prognostic Nomograms for Risk Assessment Using SAS®

Dongsheng Yang, Cleveland Clinic

ABSTRACT

Nomograms from multivariable logistic models or Cox proportional-hazards regression are a popular visual plot to display the predicted probabilities of an event for decision support. In this paper, we show how to build a prognostic nomograms after fitting a multivariable model, including how to assign points for each predictor under different situations such as main effect, interaction, piecewise linear effects. Furthermore, we also show how to use a power tool, graphic template language to construct a nomogram. Finally, a SAS® macro was developed to generate a nomogram.

No paper was submitted for publication.

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Paper 265-2013

SAS® Enterprise Guide®: Implementation Hints and Techniques for Insuring Success with Traditional SAS Programmers

Roger Muller, Data-To-Events.Com

ABSTRACT

There are many configuration options available in SAS® Enterprise Guide® for both the product itself and the included advanced editor. There are also numerous software products from SAS® that may or may not be licensed at your site and greatly affect your workflow. Workflow options while developing the code are numerous and range from simple line-by-line execution up to and including the running of an entire project flow or process. Storage of SAS code under development also deserves careful thought. All of these topics and more are addressed to enable users to have a very thorough non-frustrating first-time experience with SAS Enterprise Guide. The presentation is aimed at users who have experience coding and running SAS programs.

No paper was submitted for publication.

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Paper 266-2013

Repairable Systems—No Longer the Stepchild of Reliability!!!

Repairable System Reliability Modeling Using PROC RELIABILITY in SAS/QC® 9.3

Deovrat Kakde, Kavi Associates
Vijitha Kaduwela, Kavi Associates

ABSTRACT

Most assets are repairable in nature. These assets include transportation systems such as trucks and locomotives, oil and gas drilling equipment, and heavy engineering equipment such as earthmoving equipment. When assets break down, they are repaired rather than replaced. The measurement and characterization of repairable system reliability requires a different set of statistical techniques as compared to a system that cannot be repaired. The RELIABILITY procedure in SAS/QC® 9.2 allowed modeling of repairable system reliability using the nonparametric mean cumulative function (MCF). In SAS/QC 9.3, PROC RELIABILITY offers a much-needed functionality to model recurrent event data by fitting a nonhomogeneous Poisson process (NHPP). This paper illustrates the use of nonparametric MCF and parametric NHPP to model reliability of critical subsystems of a repairable system.

No paper was submitted for publication.

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Paper 267-2013

Getting an Overview of SAS® Data in Three Steps

Yu Fu, Oklahoma State University
Shirmeen Virji, Oklahoma State University
Goutam Chakraborty, Oklahoma State University
Miriam McGaugh, Oklahoma State University

ABSTRACT

For SAS programmers, one of the most important steps before manipulating the dataset for further analysis is to get an overview of it. In order to get an idea of the dataset, normally three areas are looked into: variable names, statistical description, and relationship of one dataset with other datasets within a library. The macro program introduced in this paper writes out the names of all the variables present in a file of a particular library, gives descriptive statistics of all the variables that are classified as numeric, and draws a diagram to show the relationships among the datasets. All three steps are performed by running just one program.

No paper was submitted for publication.

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Paper 268-2013

Life's a Song! Mining Country Music Topics Using SAS® Text Miner

Deovrat Kakde, Kavi Associates
Saurabh Ghanekar, Kavi Associates
Neetha Sindhu, Kavi Associates

ABSTRACT

Rich lyrics, often with a message, are a hallmark of American country music. Typical song topics in American country music include family, marriage, divorce, cheating, finding love, losing love, heartbreak, happiness, drinking, children, men, women, honky tonk, religion, politics and love of country. This paper demonstrates the use of SAS® Text Miner to identify topics in American country music. The lyrics of Country Music Television's (CMT) top 20 songs for the last 25 years were analyzed. The prominent topics as identified by SAS Text Miner were compared against the tags of last.fm to develop a measure of accuracy. The results were also validated with native English-speaking experts.

No paper was submitted for publication.

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Paper 269-2013

Predicting Application Review Rating with SAS® Text Miner

Zhangxi Lin, The Rawls College of Business Administration, Texas Tech University
Tianxi Dong, Rawls College of Business Administration, Texas Tech University
Jonghyun Kim, Texas Tech University

ABSTRACT

With the proliferation of text-based data on the Internet, there is a need for dealing with the information overload. The large number of online user reviews might present an obstacle to developers who want to know users' feedback and to potential customers who are interested in applications. Here we employ text analysis provided in SAS® Text Miner to predict the overall and feature-based ratings for online application reviews. We use examples from the Android Market and Apple Store, the real world of online application stores. The findings might aid in promoting the sales of applications by better satisfying customer demands.

No paper was submitted for publication.

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Paper 271-2013

Predict the Delay in Your Airline Before They Do!

Hari harasudhan Duraidhayalu, Kavi Associates
Rajesh Inbasekaran, Kavi Associates

ABSTRACT

This paper demonstrates the application of predictive modeling techniques to predict the time delay in several domestic flights across the United States. Delay in domestic flights has been a common phenomenon in the United States and it would definitely be useful if a predictive methodology was employed. The data set for this purpose was prepared by gathering the past two years of data from a flight stats website. The weather details of these airports were also collected to understand if the weather details can be used for the prediction. By using modeling techniques such as multiple regression, neural networks, and so on, the delay in airlines can be predicted by knowing the airline carrier, origin, and destination airport.

No paper was submitted for publication.

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Paper 272-2013

Calculating Subset-Weighted Analysis in PROC SURVEYFREQ and PROC GENMOD

Jessica Hale, University of Oklahoma
Paul Darden, OUHSC
David Thompson, OUHSC College of Public Health

ABSTRACT

Stratum-specific weighted analysis is available in SAS® procedures such as PROC SURVEYMEANS and PROC SURVEYLOGISTIC, which include the DOMAIN statement. However, other procedures that can model correlated outcomes, including PROC GENMOD, do not. This presentation demonstrates a method of assigning individual weights to each record in a data set to perform weighted subset analysis on a correlated outcome without creating domain variables or transferring analysis to a separate program.

No paper was submitted for publication.

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Paper 273-2013

An Exploratory Graphical Method for Identifying Associations in Sparse $r \times c$ Contingency Tables

Martin Lesser, Feinstein Institute for Medical Research-Biostatistics
Meredith Akerman, Feinstein Institute for Medical Research Biostatistics

ABSTRACT

We investigate a graphical method, based on scree plots, for visualizing “significant” departures between observed and expected cell frequencies in $R \times C$ contingency tables, with a large number of rows and/or columns. This method is based on Snedecor and Cochran’s (1989) proposal to identify the cells with the largest values of $(O-E)^2/E$, known as the contribution to chi-square. The scree plot shows the contributions plotted in descending order, so that the user can detect which cells contribute the significant departures, thus suggesting where the null hypothesis of independence may have been violated. This method may be useful in large sparse $R \times C$ tables. We used the following SAS procedures to develop a macro for producing the scree plot: PROC FREQ (chisq, cellchi2, deviation, ODS output), PROC SQL, and PROC GPLOT.

No paper was submitted for publication.

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Paper 274-2013

SAS® Enterprise Guide®: What's in It for the Long-Term Highly Experienced SAS® Programmer

Roger Muller, Data-To-Events.Com

ABSTRACT

What are the benefits of SAS Enterprise Guide® as the developmental platform for highly experienced SAS programmers who have been writing code for a long time? This paper demonstrates a number of features that are available in SAS Enterprise Guide for not only programming, but viewing SAS data sets, creating multiple report outputs, improving code storage, providing project organization and management, and more. The techniques will emphasize the importance of the work flows in SAS Enterprise Guide. All of these are in a state-of-the-art Microsoft Windows environment with full copy, cut, and paste capabilities. This presentation will focus more on the benefit to the programmer rather than on the feature itself. The bottom line will be "What is in it for me?"

No paper was submitted for publication.

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Paper 275-2013

An Improved Data Visualization Approach for Monitoring and Analyzing Business Performance Using SAS/QC® Control Chart and SAS/GRAPH® Annotate Techniques

Sheng Ding, Fedex
Baojian Guo, Fedex

ABSTRACT

Monitoring and analyzing business performance have been proved difficult, especially in today's intricate business environment. Customized Control Chart using SAS® annotate facility, however, can provide a very useful data technique to visualize complicated business information with manageable data visualization results. This poster introduces an improved technique for statistical process control visualization. Combined SAS/QC® control chart with SAS/GRAPH® annotate technique, the improved control chart can be used to customize highlight out-of-control signals and potential root causes. Furthermore, the authors applied customized annotate library to leverage business impact with different the potential root causes.

No paper was submitted for publication.

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Paper 276-2013

10 SAS® Skills for Grad Student Survival: A Grad Student “How-To” Paper

Elisa Priest, UNT HSC SPH

ABSTRACT

Grad students learn the basics of SAS® programming in class or on their own. Real-world research projects are usually complex and may require a variety of different SAS tools and techniques for data exploration and analysis. This paper is a culmination of the SAS challenges I overcame and the SAS skills that I learned outside of the classroom. These 10 SAS skills helped me to survive graduate school and successfully write a complex simulation analysis in SAS for my dissertation.

No paper was submitted for publication.

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Paper 277-2013

Speed it Up: Using SAS® to Automate Initial Discovery Practices

Mariya Karimova, AdvanceMed, an NCI Company
Christine John, AdvanceMed, an NCI Company

ABSTRACT

Healthcare investigations frequently begin with a tip containing very little provider information. This presentation attempts to use SAS® to automate the initial discovery process, turning a name into a full overview of the provider. Multiple data sources are combined, which oftentimes require fuzzy matching to resolve conflicting identifiers. The program utilizes INFILE URL and SAS text functions to obtain meaningful information from various websites. It further utilizes SAS ODS and SAS/GRAPH® to create a single standard PDF report; which provides a visualization of provider billing patterns, summarizes their affiliations, and embeds hyperlinks to original web-based resources. Additional topics that are discussed include: creating a script for multiple users, parameterization, utilizing system variables, and SAS® 9.2 to SAS® 9.3 conversion.

No paper was submitted for publication.

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Paper 279-2013

Performance Predictability By Using Social Profile in Online P2P Lending Market

Zhangxi Lin, The Rawls College of Business Administration, Texas Tech University
Siming Li, Southwestern university of finance and economics
Harshal Darade, Texas Tech University

ABSTRACT

We study the borrower-, loan-, and group-related determinants of performance predictability in an online P2P lending market by conceptualizing financial and social strength to predict borrower rate and whether the loan would be timely paid. The results of our empirical study, conducted using a database of 9,479 completed P2P transactions in calendar year 2007, provide support for the proposed conceptual model in this study. The results showed that combining financial files with social indicators can enhance the performance predictability in the P2P lending market. Although social strength attributes do affect the borrower rate and status, their effects are very small in comparison to the financial strength attributes.

No paper was submitted for publication.

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Paper 280-2013

Dashing out a Quick Dashboard of Graphs in SAS®

Alan Elliott, UT Southwestern
Linda Hynan, University of Texas Southwestern Medical Center

ABSTRACT

In a world overwhelmed with data, a challenge of a data analyst confronted with a new data set is to produce quick and concise initial comparisons that provide information about data distributions as well as quick statistical comparisons on primary factors of interest. This paper combines summary analysis graphs that incorporate statistical results in a matrix/dashboard format on a single, concise page. SAS® users familiar with basic SAS programming techniques will be able to produce these dashboards of graphic results.

No paper was submitted for publication.

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Paper 281-2013

Adolescent Smoking and Development of Long-Term Habits: A Longitudinal Analysis in SAS®

Elizabeth Leslie, Kennesaw State University

ABSTRACT

This study was an investigation into the impact of early adolescent smoking on adult smoking habits of National Longitudinal Survey of Youth 1997 Participants over the course of 13 years. The data was from a survey consisting of 1,212 individuals interviewed once a year for 13 years (1997 to 2009) with the frequencies and amounts of cigarettes smoked recorded. SAS® was used for the analysis and SAS arrays, do loops and macros were used in structuring the data. There is significant evidence that smoking habits increase over time, sex, and age when started smoking have an effect on number of cigarettes smoked, and the number of cigarettes increases as the number of peers who smoke and does drugs increases.

No paper was submitted for publication.

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Paper 283-2013

A Flexible Method to Apply Multiple Imputation Using SAS/IML® Studio

Xue Yao, University of Manitoba
Lisa Lix, University of Manitoba

ABSTRACT

Multiple imputation has been widely used for dealing with missing data and measurement error problems in various scientific fields. SAS/STAT® software offers the MI and MIANALYZE procedures for creating and analyzing of multiple imputation data. Imputation methods in PROC MI can be used for either continuous or classification variable with the monotone missingness pattern and only for continuous variable with the arbitrary missingness pattern. This paper provides an imputation method using SAS/IML® Studio for the arbitrary missingness pattern with classification variable. Implementing this method expands the ability to conduct multiple imputation using SAS®.

No paper was submitted for publication.

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Paper 285-2013

Growth Spline Modeling

Matthew Schuelke, Air Force Research Laboratory
Robert Terry, University of Oklahoma
Eric Day, University of Oklahoma

ABSTRACT

In this paper we will present an extensible, hybrid statistical approach comprised of spline modeling and growth modeling which allows for an examination of how the relative antecedent contributions to an outcome change through time while simultaneously controlling for past effects.

No paper was submitted for publication.

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Paper 286-2013

Gee! No, GTL! Visualizing Data With The SAS Graph Template Language

Ted Conway, Self

ABSTRACT

When you need to produce a grid of related graphs with minimum coding, PROC SGPANEL is hard to beat. But eventually you'll run into a situation that demands more precise control over the output. Perhaps there are unusual scaling/formatting requirements. Or information needs to be presented in a specific order. Or things need to be clarified via annotations or other markup. That's where the Graph Template Language (GTL) can help. In this paper, we'll see how GTL can be used to create a customized grid of time series plots from segments and measures found in the TOTARRESTS sample data set. This may be of interest to all skill levels. It requires Base SAS, SAS GTL, and the SAS Macro Facility on UNIX or the PC.

No paper was submitted for publication.

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Paper 287-2013

Utilizing SAS® for the Construction of Preassembled Parallel, Computerized Fixed-Test Forms under Item Response Theory Framework

Yi-Fang Wu, Iowa Testing Programs, University of Iowa

ABSTRACT

The preassembled, parallel computerized fixed-test (CFT) forms are among the most popular computer-based testing models. In item response theory, test information function plays a dominant role for designing and comparing measurement precision of CFT forms. The current paper develops an automated procedure by utilizing SAS® software and procedures (i.e. PROC IML, PROC SQL, SAS/GRAPH®, GTL, and ODS) for constructing the CFT forms. The purpose is to demonstrate an efficient way to obtain test and item information functions for the CFT forms and to plot the test and item characteristic curves along with informative summary statistics. Also, the paper investigates how measurement precision relates to conventional item statistics. For test developers and practitioners, the handy automated procedure through SAS and informative results are both provided.

No paper was submitted for publication.

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Paper 288-2013

A SAS® Macro Application for Efficient Interrupted Time Series (ITS) Analysis Using Segmented Regression

Sreedevi Thiyagarajan, Stanford University

ABSTRACT

A comparison between a SAS® macro application and an existing software tool (Joinpoint software) was conducted to identify the most efficient software application to do a segmented regression for doing an interrupted time series (ITS) analysis for asthma trends over time. The SAS macro developed using the SAS 9.3 procedures NLIN and REG, when compared with the Joinpoint software for an interrupted time series (ITS) analysis has given an output similar to the latter and showed better running time, efficiency as well as the time required to prepare the data sets, and total analysis time.

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Paper 289-2013

Using PROC FORMAT and Other Little Tweaks to Enable PROC TABULATE's Hidden Capabilities of Optimizing Statistical Reporting

Heli Ghandehari, Baxter BioScience
Victor Lopez, Baxter Healthcare Corporation

ABSTRACT

PROC TABULATE is arguably the most efficient approach for calculating statistics and generating output, all within one procedure. However, developers must often stray from PROC TABULATE when display specifications require values to be reported as concatenated pairs. For example, a common reporting requirement is for a mean and standard deviation to be grouped within a single cell, with the latter enveloped by brackets. Similarly, a range could be requested with the minimum and maximum delimited by a dash, or perhaps a confidence interval nestled within parentheses. The combinations are endless, but the underlying solution is simple and universal. This paper demonstrates the utility of PROC FORMAT's PICTURE statement when applied in combination with PROC TABULATE's computational and reporting capabilities to create customized statistical tables.

No paper was submitted for publication.

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Paper 291-2013

Making it Happen: A Novel Way to Construct, Customize and Implement Your SAS® Enterprise BI User Enablement Framework

Tawney Moreno-Simon, Centers for Medicare & Medicaid Services (CMS)
Vivek Seth, Computer Sciences Corporation - CSC

ABSTRACT

Laying a solid foundation for user enablement is the holy grail of BI tool implementation. Yet almost two-thirds (64%*) of BI Tool implementations rate the success of user enablement initiatives “average” or lower. New BI tool implementations struggle even further, with more than half (52%*) rated as “fair” or “poor.”

No paper was submitted for publication.

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Paper 498-2013

Application of Text Mining in Tweets to Analyze General Opinion about “Bing It On” Challenge by Microsoft

Shreya Sadhukhan, Oklahoma State University
Taufique Ansari, Oklahoma state university
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Usefulness of text mining is now accepted worldwide to produce effective knowledge and valuable insights of any business. Bing It On is an online challenge offered by Microsoft allowing blind comparison of the search results by Bing and Google. Microsoft claimed that users have chosen Bing over Google nearly 2:1 times in these tests. Regarding this, there were positive, negative, and mixed reactions from the vast user group, visible in their tweets. In this research, we have collected relevant tweets using the %GetTweet macro, and applied text mining to the data set using the SAS® Text Miner® tab of SAS® Enterprise Miner™ 7.1 to summarize and portray the general public opinion about this challenge and those two giant search engines.

No paper was submitted for publication.

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Paper 499-2013

Impact of London Olympics According to Tweeters

Yu Fu, Oklahoma State University
Shirmeen Virji, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

Overspending money on Olympics by the host country with the hope of giving a huge boost to the economy is an age old phenomenon. The purpose of this paper is to analyze the public sentiment on the economic impact of London Olympics through tweets. SAS® Text Miner is employed to summarize the collected tweets and classify them into different clusters. Additionally, SAS® Sentiment Analysis Studio is used to corroborate our findings and create a trend that tracks changes of public sentiments during the London Olympics.

No paper was submitted for publication.

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Paper 292-2013

Automating the Flow of Presentations in Coder's Corner or Quick Tips

Erik Tilanus, Synchrona

ABSTRACT

The Quick Tips section (former Coder's Corner) is characterized by a rapid flow of many short presentations. Reading bios and starting presentations by hand is slowing down this flow. So we use SAS® to automate this flow.

No paper was submitted for publication.

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Paper 293-2013

Implementing Metadata-driven Reports with SAS® Stored Processes

Toby Hill, Charles Marcus Group Services

ABSTRACT

As more organizations that use SAS® software are implementing the full Business Intelligence reporting suite, many SAS programmers are becoming familiar with developing SAS Stored Processes to deliver reports for the business. Developers are often required to implement content security in the reports or provide additional functionality for users with specific roles. How can all this be done? One approach is to make use of the SAS metadata. This paper demonstrates some techniques that you can apply to your SAS code in order to make use of the SAS metadata. This will allow you to implement security and role-based access in your SAS Stored Process reports and minimize the amount of changes required as new users access the platform.

No paper was submitted for publication.

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Paper 294-2013

Time Series Data: Anatomy of an ETL Project

Leonard Polak, Wells Fargo Technology and Operations Group

ABSTRACT

It's one thing to study SAS® tools and another to apply them to actual situations. In this paper, we follow along as web data is copied and transformed--and ultimately made available to users.

No paper was submitted for publication.

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Paper 295-2013

CLISTS: Improve Efficiency of TSO Applications Using Mainframe SAS®

Russell Hendel, Centers for Medicare and Medicaid Services

ABSTRACT

Have you been spending a few hours every month submitting several dozen SAS® jobs to mainframe systems using an IBM TSO environment with the Interactive System Productive Facility (ISPF)? You know that within SAS, SAS macros can efficiently manage repetitive tasks; but how do you manage repetitive tasks with JCL, the TSO control language? CLIST is precisely what you need: It enables you to automate repetitive tasks that use JCL and SAS. CLIST is an easy language to learn, requiring no former knowledge and using only a handful of basic commands. We present illustrative CLIST code covering basic groups of CLIST commands. People already familiar with JCL and SAS who write jobs using both of them will benefit from this presentation.

No paper was submitted for publication.

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Paper 296-2013

Efficient Extraction of JSON Information in SAS® Using the SCANOVER Function

Kyong Jin Shim, Singapore Management University
Murphy Choy, Singapore Management University

ABSTRACT

JSON or JavaScript Object Notation is a popular data interchange format that provides a human readable format. It is language independent and can be read easily in a variety of computer languages. With the rise of Twitter and other types of unstructured data, there has been a move to incorporate this data as a way of disseminating information. Twitter currently provides a simple API for users to extract tweets using the JSON format. Although SAS does not currently have a direct way of reading JSON, the SCANOVER function in the SAS® DATA step provides users with a simple and effective approach to getting JSON information into SAS data sets. In this paper, two examples of using this technique are provided.

No paper was submitted for publication.

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Paper 297-2013

Back Up Your Sources During Development: A Stack of Base SAS® Scripts

Hans Sempel, Belastingdienst (Dutch Tax and Customs Administration)

ABSTRACT

If you're a Base SAS® programmer and if you ever lost your code due to system crashes or overwriting your code, this might be the solution.

The presented code provides a means of backing up your code during development, you can use it to save increments or you can use it for versioning and you can restore the code you're working on to an earlier version.

No paper was submitted for publication.

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Paper 298-2013

FCMP -- Why?

Lisa Eckler, Lisa Eckler Consulting Inc.

ABSTRACT

PROC FCMP allows a SAS® programmer the opportunity to create user-defined functions in SAS. Prior to the availability of FCMP in SAS 9, SAS macros or linked routines were often used to achieve a similar — but less elegant — effect. This paper examines the advantages of FCMP over the earlier alternatives and why it is therefore so valuable to the programmer.

No paper was submitted for publication.

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Paper 299-2013

Data Review Information: N-Levels or Cardinality Ratio

Ronald Fehd, retired

ABSTRACT

This paper reviews the database concept: Cardinality Ratio. The SAS® FREQUENCY procedure can produce an output data set with a list of the values of a variable. The number of observations of that data set is called N-Levels. The quotient of N-Levels divided by the number of observations of the data is the variable's Cardinality Ratio. Its range is in (0-1]. The Cardinality Ratio provides an important value during data review. Four groups of values are examined.

No paper was submitted for publication.

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Paper 300-2013

Healthcare Claims Processing with Base SAS® through Denormalization of ANSI 837 Format

Victor Shigaev, CDC

ABSTRACT

Sometimes dealing with healthcare claims can be messy. As a result of HIPAA, all health insurance claims must be submitted to insurance payers using the ANSI X12 837 messaging standard. This standard creates a compact hierarchical file for quick transmission between trading partners but because of the really complex nested structure of the data this standard is not always easy to read in and be analyzed. The paper will give a brief introduction to the X12 837 messaging standard, provide users a simple way to divide raw claims data by claims through de-normalization, and a way to use SAS® as a main tool to process and analyze the claims data.

No paper was submitted for publication.

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Paper 300-2013

Healthcare Claims Processing with Base SAS® through Denormalization of ANSI 837 Format

Roberto Valverde, NCHS

ABSTRACT

Sometimes dealing with healthcare claims can be messy. As a result of HIPAA, all health insurance claims must be submitted to insurance payers using the ANSI X12 837 messaging standard. This standard creates a compact hierarchical file for quick transmission between trading partners but because of the really complex nested structure of the data this standard is not always easy to read in and be analyzed. The paper will give a brief introduction to the X12 837 messaging standard, provide users a simple way to divide raw claims data by claims through denormalization, and a way to use SAS® as a main tool to process and analyze the claims data.

No paper was submitted for publication.

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Paper 302-2013

Something for Nothing? Adding Group Descriptive Statistics Using PROC SQL Subqueries

Sunil Gupta, Gupta Programming

ABSTRACT

Can you actually get something for nothing? With PROC SQL's subquery and remerging features, yes, you can. When working with categorical variables, often there is a need to add group descriptive statistics such as group counts, minimum and maximum values for further by-group processing. Instead of first creating the group count, minimum or maximum values and then merging the summarized data set to the original data set, why not take advantage of PROC SQL to complete two steps in one? With PROC SQL's subquery and summary functions by the group variable, you can easily remerge the new group descriptive statistics back to the original data set.

No paper was submitted for publication.

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Paper 304-2013

Running SAS® Programs Using Skype

Romain Miralles, Genomic Health

ABSTRACT

Skype is a well-known method used to talk to friends, family members, and coworkers. It is one of the best applications available to make voice calls over the Internet. In this paper we present a new, innovative way to use SAS® with Skype. Here, we have developed a solution that allows users to run SAS remotely through Skype. After installing the DLL from the API on the application website, programmers can create scripts to control Skype. By sending a specific message to a predefined user, programmers can execute SAS on demand. This paper explains how to use Skype to run SAS programs. It provides the Visual Basic script needed to communicate with Skype and illustrates a real case scenario in which this technique is used.

No paper was submitted for publication.

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Paper 306-2013

Accessing SAS® Code via Visual Basic for Applications

Jennifer Davies, Z, Inc

ABSTRACT

SAS® software has functionality that applications such as Microsoft Access or Excel do not have and vice versa. However, in some situations, Microsoft applications are preferred by the user over SAS for a multitude of reasons. This paper will discuss how to integrate the use of Microsoft applications with the functionality of SAS programs. This becomes very important when SAS® Business Intelligence is not available. Depending on how SAS is installed in the user's organization, the programmer may have to access SAS on the PC or a server version of the application. This paper will explain the two methods used for calling SAS code from Visual Basic for Applications (VBA) Code (v6.5).

No paper was submitted for publication.

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Paper 307-2013

OUT= Is on the Way Out - Use ODS OUTPUT Instead

Stanley Fogleman, HARVARD CLINICAL RESEARCH INSTITUTE

ABSTRACT

There are, as a general rule, two methods to create a SAS data set from procedural output. The more traditional one is the OUT= statement. This feature is being replaced by the ODS OUTPUT statement as new capabilities are added to procedures. In the future, only existing variables (generally in SAS releases prior to SAS 9.1) will be available on the OUT= statement. Therefore, it behooves the day-to-day SAS programmer to become familiar with the new syntax.

No paper was submitted for publication.

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Paper 308-2013

A Simple Approach to Generate Page Numbers in X of Y Format in ODS RTF Output

Amos Shu, Endo Pharmaceuticals

ABSTRACT

Page numbers in X of Y format, such as "Page 18 of 280" is a common feature of ODS RTF outputs. SAS borrows Microsoft Word processors to compute those numbers and put them in the final output by using TITLE or FOOTNOTE statements with "{page {field{\fldinst{page}}} of {field{\fldinst{numpages}}}" or "Page ~{thispage} of ~{lastpage}". However, the page numbers generated by Microsoft Word processors contain field code information displayed as "Page {PAGE *MERGEFORMAT} of {NUMPAGES *MERGEFORMAT}" rather than the page numbers when Alt - F9 keys are pressed. Some users such as medical writers do not like such field code information. This paper discusses a simple way to generate page numbers in X of Y format in ODS RTF output with the PROC REPORT procedure.

No paper was submitted for publication.

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Paper 309-2013

Graph Your SAS® Off

Karena Kong, InterMune

ABSTRACT

This paper demonstrates three different SAS® procedures for creating graphs. For illustration purposes, the bubble plot in Figure 1, shows the ratio of broadband users (DSL, Cable, Other) ranked by population ("List of countries, "). The data values of "Total Subscribers in Millions" and "Percent Population Online" are annotated on the graph. The three procedures are from SAS/GRAPH® - GPLOT, Statistical Graphics (SG) - SGPLOT and Graphics Template Language (GTL) - PROC TEMPLATE with SGRENDER. This paper will discuss the advantages and disadvantages between each one. Based on the comparisons, it recommends which procedure should be used to create a similar graph.

No paper was submitted for publication.

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Paper 310-2013

Adding Graph Visualization on SAS® ODS Output

Yu Fu, Oklahoma State University
Shirmeen Virji, Oklahoma State University
Goutam Chakraborty, Oklahoma State University
Miriam McGaugh, Oklahoma State University

ABSTRACT

SAS® tools are normally used to produce statistical graphs such as pie charts, bar charts, various plots, dashboards, and even geographical maps. However, many SAS users may want to enhance their output by incorporating various diagrams such as networking, cluster, and process flows. In this paper, we will introduce a method to add specific graphs onto SAS ODS output by interacting with Graphviz (an open source graph visualization software) in Base SAS®.

No paper was submitted for publication.

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Paper 311-2013

"How May I Help?" The SAS® Enterprise Guide® Analyze Program Feature

Ramya Purushothaman, Cognizant Technology Solutions

ABSTRACT

Have you ever been looking into a lengthy and complex SAS® code, maybe inherited it or your own old program, and wished you could understand what is happening inside without having to go through every line? Left without any associated documentation and wondered where to start from? Felt that it would be better to have a process flow representation of what the code does, quickly? Then, the Analyze Program feature that SAS® Enterprise Guide® offers might work for you! This paper discusses what to expect of this feature and what not to with example analyses from the Life Sciences industry.

No paper was submitted for publication.

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Paper 312-2013

Some Useful Utilities on UNIX Platform

Kevin Chung, Fannie Mae

ABSTRACT

While using SAS® in UNIX platform, you might want to quickly browse data, contents or the frequency of characteristic data fields in a SAS data set. You can always write a SAS program and submit the program to get the results you need. However, we are able to obtain this information in more efficient and effective manner by using the UNIX shell scripts along with SAS codes. This paper demonstrates some useful utilities in UNIX. This approach not only saves your time but it also increases the productivity.

No paper was submitted for publication.

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Paper 313-2013

PC and UNIX SAS® Reunited

Shiva Kalidindi, Amgen
Sarwanjeet Singh, Gerard Groups Inc.

ABSTRACT

Have you ever wondered how you can use the best of PC and UNIX SAS together and make a perfect world (well, almost perfect)? SAS/CONNECT® allows you to use the Enhanced Editor and submit the code on UNIX. You can submit one DATA step or PROC at a time, view the log in the Log window as well as create data sets in the Work directory.

It is a one-time setup, and you do not have to compromise the PC Enhanced Editor ever. This paper provides step-by-step instructions on how you can connect and automate the PC-to-UNIX connection by using SAS. You will never have to leave the Enhanced Editor again.

No paper was submitted for publication.

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Paper 314-2013

SAS® Code to Make Excel Files Section 508 Compliant

Christopher Boniface, U.S. Census Bureau
Hung Pham, U.S. Census Bureau
Nora Szeto, U.S. Census Bureau

ABSTRACT

Can you create hundreds of great looking Excel tables all within SAS® and make them all Section 508 compliant at the same time? This paper will examine how to use ODS tagsets, EXCELXP, and other Base SAS® features to create fantastic-looking Excel worksheet tables that are all Section 508 compliant. This paper will demonstrate that there is no need for any outside intervention or pre- or post-meddling with the Excel files to make them Section 508 compliant. We do it all with simple Base SAS code.

No paper was submitted for publication.

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Paper 315-2013

Reading an Excel Spreadsheet with Cells Containing Line Endings

Larry Hoyle, IPSR, University of Kansas

ABSTRACT

The creative ways people enter data into Excel spreadsheets can cause problems when trying to import data into SAS® data sets. This paper addresses the problem encountered when spreadsheet cells contain multiple lines (that is, the cells have embedded line endings).

Several approaches to reading such data are described and compared.

No paper was submitted for publication.

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Paper 316-2013

Maintaining Formats When Exporting Data from SAS® into Microsoft Excel

Nate Derby, Stakana Analytics
Colleen McGahan, BC Cancer Agency

ABSTRACT

Data formats often get lost when exporting from SAS® into Microsoft Excel using common techniques such as PROC EXPORT or the ExcelXP tag set. In this paper, we describe some tricks to retain those formats.

No paper was submitted for publication.

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Paper 319-2013

Reordering Columns after PROC TRANSPOSE (or Anytime You Want, Really)

Sau Yiu, Kaiser Permanente

ABSTRACT

There are times when we want to rearrange the order of the columns in a SAS® data set. This occurs most often after a PROC TRANSPOSE, when the newly transposed columns do not appear in the order that we want. This paper shows several methods which allow users to either sort the columns by their names, or order the columns in any particular way.

No paper was submitted for publication.

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Paper 320-2013

Reporting Tips for No Observations

Wuong Jodi Auyuen, Blue Cross Blue Shield Minnesota

ABSTRACT

The goals for SAS developers to design applications include reporting accurate information, delivering in a timely manner, meeting business needs, and the presentation is easy to grasp. We design the report to meet those goals and hopefully to cover potential questions. One of the frequently asked questions is: I used to receive a session, say visitors from Japan, why I don't see that session for the week of March 14, 2011? Even though we don't need to code "No visitors from Japan due to Tsunami on March 11, 2011", we could at least provide a generic message like "No data returned for this session." so users won't be wondering whether they miss the page or question the accuracy of the development work.

No paper was submitted for publication.

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Paper 321-2013

Wide-to-Tall: A Macro to Automatically Transpose Wide SAS® Data into Tall SAS Data

James R Brown, Havi Global Solutions

ABSTRACT

If your SAS® world involves forecasting or other date-specific data, you have probably seen column names such as forecast_19224, sales_19230, or inventory_19250. If several of these prefixes exist in a single file, the underlying SAS data file could have thousands of columns.

Analyzing this data is an exercise in scrolling, note-taking, copying, and pasting.

PROC TRANSPOSE is not sophisticated enough to take on this challenge. This paper presents a macro which will transform your data by automatically creating a CSV file with distinct columns for the date, each prefix variable, and any non-date-suffixed columns in your input.

The non-wizardry behind this makes use of the dictionary tables, SAS name lists (forecast_18950-forecast_19049), and colon notation (forecast_:) to eliminate the task of enumerating long lists of variable names.

No paper was submitted for publication.

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Paper 322-2013

What's in a SAS® Variable? Get Answers with a V!

William Murphy, Howard M Proskin & Assoc, Inc

ABSTRACT

If you need information on variable attributes, PROC CONTENTS will provide all of the specifics. You could also access the SQL DICTIONARY which contains tables filled with details on the variables in the active data sets. If you need just one piece of information on a single variable, both of these methods could prove to be cumbersome. However, SAS® has a whole series of functions that can produce the information on one attribute of one variable at one time. These functions are named with a V prefix followed by descriptive term for the attribute. They include VNAME, VLABEL, VTYPE, VFORMAT, and several others. We will demonstrate how these V functions are useful not only in reporting but in standardizing the structure of a database.

No paper was submitted for publication.

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Paper 323-2013

Quick and Easy Techniques for Fast Data Extraction

Mythili Rajamani, Kaiser Permanente

Deepa Sarkar, Kaiser Permanente

Jason Yang, Kaiser Permanente

Chris Greni, Kaiser Permanente

ABSTRACT

Working with large data sets is a challenging and time-consuming job. This paper tells some of the easy, useful data extraction tips and techniques to reduce CPU usage to retrieve the specific data. The following subjects are discussed in this paper:

(1) creating a temporary table with the Key column in the database (both DB2 and Teradata) and extracting the data from the database

(2) extracting data only for specific days, specific weeks

(3) automating the date parameter for repetitive and scheduled tasks.

No paper was submitted for publication.

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Paper 324-2013

Dealing with Duplicates

Christopher Bost, MDRC

ABSTRACT

Variable values might be repeated across observations. If a variable is an identifier, it is important to determine whether values are duplicated. This paper reviews techniques for detecting duplicates with PROC SQL, summarizing duplicates with PROC FREQ, and outputting duplicates with PROC SORT.

No paper was submitted for publication.

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Paper 325-2013

Not Dividing by Zero: The Last of the Low-Hanging Efficiency Fruit

Bruce Gilson, Federal Reserve Board

ABSTRACT

As SAS® Institute has improved the efficiency of its code, some of the old ways for users to improve efficiency, such as using WHERE or WHERE= instead of IF in the DATA step, no longer make much difference. Current user efforts to improve efficiency tend to focus on more sophisticated techniques such as indexes or hashing. However, one of the classic methods, not dividing by zero in the DATA step, can still offer a large efficiency improvement. This paper shows some sample code that divides by zero and some benchmark results from changing the code to test for zero denominators to avoid dividing by zero.

No paper was submitted for publication.

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Paper 326-2013

Dealing with End-of-line Markers in Text Data Shared Across Operating Systems

Haoyu Gu, University of Michigan

ABSTRACT

Different operating systems use different end-of-line markers. When sharing data across operating systems, caution must be taken. In this paper, two examples are used to show how to read and write text data created in Microsoft Windows from UNIX or Linux. In the examples, the use of option TERMSTR and DLM=200Dx are discussed. The programs are run using both SAS/CONNECT® and batch mode.

No paper was submitted for publication.

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Paper 327-2013

An Overview of Syntax Check Mode and Why It Is Important

Thomas Billings, Union Bank

ABSTRACT

The syntax check options direct the SAS® system, when a syntax error occurs while compiling source code, to enter a special mode to scan the remainder of the job after the point where the error occurred, for syntax errors. In this mode, only the header portion of some data sets are created, permanent data sets are not replaced, but global commands are executed (also a very few PROCs). The options controlling the mode are explained and illustrated using simple test jobs. The effects of setting and resetting the option within a job are explored, and there are some surprises along the way. The risks of running with the options enabled vs. disabled are discussed.

No paper was submitted for publication.

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Paper 328-2013

Converting Thousands of Variables from Character to Numeric: The One-Hour Fix

Wen Song, ICF International
Kamya Khanna, ICF International

ABSTRACT

At the conclusion of many survey-based data collecting projects, recoding the hundreds and thousands of character variables to “reserved scale” specified numeric variables is a uncomplicated but cumbersome task for SAS® programmers. If you are a person who likes to avoid a large amount of typing as much as I do, this paper will give you an idea of how to maintain high quality for this recoding task with minimal typing. This paper also answers the following questions: How can you create a powerful SAS macro that will write the IF-ELSE-THEN Statement for you? How can you avoid any human errors such as typos? And how do you use Microsoft Excel to speed up your work?

No paper was submitted for publication.

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Paper 329-2013

Resources for Getting the 2010 US Census Summary Files into SAS®

Rebecca Ottesen, City of Hope and Cal Poly State University, San Luis Obispo

ABSTRACT

At first glance, accessing the 2010 US Census data with SAS® seems like a daunting task. The main limitation is that for the 2010 summary files it seems that the Census has gravitated toward supporting data access via Microsoft Access rather than SAS as they did in the past. However, there are several tactics that can be deployed to make accessing this data with SAS much easier. A thorough understanding of the Census Summary File data structure and documentation can be used to leverage both SAS code from programs that the Census previously supported and Census 2010 versioned SAS programming available through other public sources. Knowledge of the available resources can assist SAS analysts in taking advantage of this rich data set.

No paper was submitted for publication.

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Paper 330-2013

Array, Hurray, Array: Consolidate or Expand Your Input Data Stream Using Arrays

William Benjamin, Owl Computer Consultancy LLC

ABSTRACT

You have an input file with one record per month, but need a file with one record per year. But you cannot use PROC TRANSPOSE because other fields need to be retained or the input file is sparsely populated. The techniques shown here enable you to either consolidate or expand your output data using arrays. Sorted files of data records can be processed as a unit using "BY Variable" groups and building an array of records to process. This technique allows access to all of the data records for a "BY Variable" group and gives the programmer access to the first, last, and all records in between at the same time. This will allow the selection of any data value for the final output record.

No paper was submitted for publication.

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Paper 331-2013

10-Minute JMP®

George Hurley, The Hershey Company

ABSTRACT

Heard of JMP®, but haven't had time to try it? Don't want to devote 50 minutes to a talk about software that you might not want to use? This is the talk to you. In 10 minutes, you will learn some of the amazing visualization and modeling features in JMP and how to use them. This talk will JMP-start your JMP usage. When it's complete, we suspect you will want to attend some of the longer talks, too.

No paper was submitted for publication.

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Paper 332-2013

Cool Views

Elizabeth Axelrod, Abt Associates Inc.

ABSTRACT

Looking for a handy technique to have in your toolkit? Consider SAS® Views, especially if you work with large data sets. After a brief introduction to Views, I will show you several cool ways to use them that will streamline your code and save workspace.

No paper was submitted for publication.

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Paper 333-2013

Nifty Tips For Data Change Tracking

Julie Kilburn, City of Hope
Rebecca Ottesen, City of Hope and Cal Poly State University, San Luis Obispo

ABSTRACT

Best practices for databases include keeping detailed audit trail information about the data. These audit trail tables vary in complexity as well as size. Generally speaking, the larger the database in tables (as well as in observations), the larger the audit trail. We have discovered that leveraging audit trail information in our automated reporting has been a huge resource saver in terms of which observations need to be reprocessed for a report. Even with minimal audit information (such as created by and modified by dates at the data table level), automation processing time can be greatly reduced by taking advantage of a new way of thinking and a few handy SAS® functions.

No paper was submitted for publication.

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Paper 334-2013

Programs? How to Process Your Inputs Faster

Jason Wachsmuth, Pearson

ABSTRACT

This paper demonstrates how to pass multiple input files as macro variables and run multiple SAS® programs in one batch. This technique uses %INCLUDE statements, CALL SYMPUT, and SCAN functions in a control program to avoid physically opening, running, and closing each program. Implementing this style of programming replaces the bottleneck of defining %LET statements and enables you to process input files and sequence dependent programs in proper order. Anyone who processes data for a variety of routine operations will appreciate this solution.

No paper was submitted for publication.

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Paper 335-2013

Checking Out Your Dates with SAS®

Christopher Bost, MDRC

ABSTRACT

Checking the quality of date variables can be a challenge. PROC FREQ is impractical with a large number of dates. PROC MEANS calculates summary statistics but displays results as SAS® date values. PROC TABULATE, however, can calculate summary statistics and format the results as dates. This paper reviews these approaches plus the STACKODS option in SAS® 9.3 that might make PROC MEANS the preferred method for checking out your dates.

No paper was submitted for publication.

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Paper 336-2013

We All Have Bad Dates Once in a While...

Randall Deaton, BlueCross BlueShield of Tennessee
Patrick Kelly, BlueCross BlueShield of Tennessee

ABSTRACT

Dates in a corporate data arena can be a dangerous liaison. The strain of translating corporate date types to SAS® date types can be tricky to navigate, let alone bringing a third-party date type into the mix. Adding third wheel to your SAS dates can create a comedy of errors. An experienced SAS programmer with knowledge of the SAS macros and a few clever programming tricks can more easily resolve your SAS Dates from a sticky situation to an orderly affair.

No paper was submitted for publication.

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Paper 340-2013

You've Got SASMAIL! A Simple SAS® Macro for Sending e-Mails

Rajbir Chadha, Cognizant Technology Solutions

ABSTRACT

This paper talks about a way to have SAS® send out automatic e-mails once the process finishes and include the log output or reports as an attachment.

The SASMAIL custom macro function combines the functionality of FILENAME EMAIL, SAS macros, and the SQL procedure to deliver the intended results in a simplified way. The SASMAIL macro uses a lookup for the user's login and e-mail address. This allows the macro to work with minimum or no arguments. The function allows users to customize what they want to see in the e-mail, including the e-mail list, the attachment, and even the e-mail content. Users can even include a Microsoft Excel file or a summary report as the attachment.

No paper was submitted for publication.

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Paper 342-2013

%GetReviews: A SAS® Macro to Retrieve User Reviews in JSON Format from Review Websites and Create SAS® Data Sets

Siddhartha Reddy Mandati, Oklahoma State University
Ganesh Badisa, Oklahoma State University
Goutam Chakraborty, Oklahoma State University

ABSTRACT

The proliferation of social networking sites and consumers' desires to create and share content on such sites has continued to generate a huge amount of unstructured data. Analytics users often want to tap into such unstructured data and extract information. Many websites such as Twitter, Facebook, and Rotten Tomatoes offer APIs for external systems to interact and retrieve the data in JSON format. The API of Rotten Tomatoes returns data in a complex text pattern that has information about user reviews. Currently, there is no designated code in SAS® to read the JSON response directly and fetch the needed data. This paper illustrates the development and application of a SAS Macro %GetReviews to retrieve the reviews of any desired movie from Rotten Tomatoes' API.

No paper was submitted for publication.

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Paper 343-2013

Writing Macro Do Loops with Dates from Then to Now

Ronald Fehd, retired

ABSTRACT

Dates are handled as numbers with formats in SAS® software. The SAS macro language is a text-handling language. Macro %do statements require integers for their start and stop values.

This article examines the issues of converting dates into integers for use in macro %do loops. Three macros are provided: a template to modify for reports, a generic calling macro function which contains a macro %do loop and a function which returns a list of dates. Example programs are provided which illustrate unit testing and calculations to produce reports for simple and complex date intervals.

No paper was submitted for publication.

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Paper 344-2013

A Macro to Read in Medi-Span Text Format Database by Data Dictionary

Sijian Zhang, VA Pittsburgh Healthcar System

ABSTRACT

Investigators often use commercial databases to obtain useful additional information for their researches. However, many companies do not offer the code for transferring the data files from their deliverable file format into the one used in the customer's system. With many data files and variables, the data transfer process can be very tedious. If the databases vary in different versions, the transfer code revision can be another pain. This paper presents an approach to simplify the data transfer process of reading in Medi-Span drug information text data files by taking the advantage of macro programming and its data dictionary information. One of Medi-Span text data files, "MF2STR", is used as an example throughout this paper.

No paper was submitted for publication.

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Paper 346-2013

Using SAS® to Assess Individuals' Best Performance in Multiple Dimensions

Aude Pujula, Louisiana State University
David Maradiaga, Louisiana State University

ABSTRACT

There are many cases where we need to look at the best performance of an individual in several disciplines over multiple time events. For instance, we might want to know a triathlete's best position in the three disciplines over all the races of the season, or the highest test scores of a student in several sub-scores. Looking at the latter example, this paper compares four different methods implementable in Base SAS® to create a data set that contains one record per student corresponding to the highest test scores. Of particular interest is the use of PROC SQL combined with the SELECT DISTINCT clause and the MAX function that allows the creation of the desired data set in one step.

No paper was submitted for publication.

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Paper 348-2013

The SAS® Versus R Debate in Industry and Academia

Chelsea Lofland, University of California, Santa Cruz
Rebecca Ottesen, City of Hope and Cal Poly State University, San Luis Obispo

ABSTRACT

Despite industry being heavily dominated by SAS®, R is used widely in academia due to being free and open-source software that is structured around users being able to write and share their own functions. However, this disconnect leaves many students who are pursuing analytic degrees struggling to get a job with less SAS experience than desired by companies. Alternatively, they could face the struggle of transitioning everything they learned in university from R to SAS. Ideally, one would know every possible programming language and use the one that best suits the situation. This is rather unrealistic. Our goal is to show the benefits of these two very different software packages and how to leverage both of their strengths together.

No paper was submitted for publication.

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Paper 349-2013

Using SAS® to Dynamically Generate SAS® Code in Order to Display Both Variable Label and Name as Column Header in PROC REPORT and PROC PRINT

Victor Lopez, Baxter Healthcare Corporation
Heli Ghandehari, Baxter BioScience

ABSTRACT

With implementation of data standards such as CDISC SDTM, datasets contain sufficiently meaningful variable names and labels to allow direct reporting from dataset to output (PDF, RTF, and many more). This eliminates the necessity to program lengthy DEFINE statements in PROC REPORT or to manually assign custom labels in PROC PRINT. This paper illustrates an innovative approach using SAS® to dynamically generate SAS code that enables us to solve a seemingly easy problem: displaying both the variable label and name as a column header in PROC REPORT and PROC PRINT.

No paper was submitted for publication.

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Paper 350-2013

Best Practices: PUT More Errors and Warnings in My Log, Please!

Mary Rosenbloom, Edwards Lifesciences, LLC
Kirk Paul Lafler, Software Intelligence Corporation

ABSTRACT

We all like to see a SAS® log that is free from errors and warnings, but did you know that you can add your own errors and warnings to the log with PUT statements? Not only that, but you can incorporate this technique into your regular coding practice to check for unexpected data values. This paper will explore the rationale and process of issuing user-created error and warning messages to the SAS log, along with a number of examples to demonstrate when this is useful. Finally, we will propose an upgrade to the next version of SAS involving a user-specified keyword with its own color in the log.

No paper was submitted for publication.

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Paper 351-2013

The Surprisingly "Sym"ple Alternative to Hardcoding

Rachel Carlson, Mayo Clinic
Ruchi Sharma, Mayo Clinic

ABSTRACT

As a frequent SAS® user, do you often feel that you are spending too much time looking up procedure results or hardcoding the values into programs? Does your data often change causing a need to rerun analyses, forcing you to repeat steps? Save time rerunning analysis programs by reducing the amount of hardcoded variables and formats. Our paper will demonstrate how to effectively use the CALL SYMPUTX routine and the SYMGET function to make your code more flexible and minimize the possibility of data calculation errors.

No paper was submitted for publication.

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Paper 352-2013

On a First-Name Basis with SAS: Creating Personalized Error Messages Using SAS 9.2

Andrew Clapson, Statistics Canada
Valerie Hastings, Statistics Canada

ABSTRACT

In the interest of creating a user-friendly SAS® system, you might have the good idea to include code that checks for common errors, notifies the user, and suggests possible solutions. Apart from simply delivering this information to the user, you might also use customized message windows that express congratulations upon a successful run or even deliver light-hearted finger-wagging in the case of unexpected errors. Using SAS 9.2, this paper details the steps necessary to include basic error messaging functionality in SAS programs. It covers notification of specific errors as well as confirmation of successful program execution. In addition, through the use of system macro variables, these feedback messages can surprise users by 'knowing' their names and addressing them directly.

No paper was submitted for publication.

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Paper 353-2013

SASY Codes for Lazy people

Prashanthi Selvakumar, UNT Health Science Center

ABSTRACT

"I choose a lazy person to do a hard job, because a lazy person will find an easy way to do it." - Bill Gates. Everyone wants to save time. While hard work is useful, smart work is a pre requisite. Are you tired of typing codes, then read this paper, it gives you the ways to shorten your codes. The topics discussed in this paper include, array, do loops, macros, functions. It also discusses the procedures and data steps where macros can save your time. The other techniques like, combining the macros while creating html, pdf, rtf output, to produce professional report. The possible ways of saving time in programming are addressed in this paper.

No paper was submitted for publication.

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Paper 517-2013

Increase Your Productivity by Doing Less

Robert Virgile, Robert Virgile Associates, Inc.
Arthur Tabachneck, myQNA, Inc.
Xia Keshan, Chinese Financial electrical company
Joe Whitehurst, High Impact Technologies

ABSTRACT

Using a keep dataset' option when declaring a data option has mixed results with various SAS procedures. It might have no observable effect when running PROC MEANS or PROC FREQ but, if your datasets have many variables, it could drastically reduce the time required to run some procs like PROC SORT and PROC TRANSPOSE. This paper describes a fairly simple macro that could easily be modified to use with any proc that defines which variables should be kept and, as a result, make your programs run 12 to 15 times faster.

No paper was submitted for publication.

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Paper 354-2013

Virginia's Best: How to Annotate County Names and Values on a State Map

Anastasiya Osborne, Farm Service Agency

ABSTRACT

This paper describes a work project to annotate a Virginia state map with long county names and National Agricultural Statistics Service (NASS) data, using enhanced color and techniques to minimize map crowding. Displaying text and numeric data by county on a state map is different from displaying state-level data on a U.S. map. Long county names rather than two-letter state abbreviations require additional effort by a programmer to create a readable map. A SAS® program with %ANNOMAC, %CENTROID, PROC GPROJECT, PROC GMAP, and a 20-pattern color scheme was developed to create maps that showcased in color Virginia's top agricultural counties. This paper is for intermediate-level programmers.

No paper was submitted for publication.

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Paper 355-2013

Data Merging and Visualization to Identify Associations Between Environmental Factors and Disease Outbreaks

Neeta Shenvi, Emory University
Xin Zhang, Emory University
Azhar Nizam, Emory University

ABSTRACT

This paper describes data merging and visualization techniques for epidemiological and environmental surveillance data. The ultimate goal is to learn about associations between specific environmental factors and disease outbreaks. In such studies, environmental and clinical surveys often occur on different timelines. We illustrate data merging with PROC SQL to merge environmental and clinical data with chronological lags. We use the Graph Template Language (GTL) to demonstrate data visualizations and correlations that enabled us to identify potential associations between cases of the disease and environmental variables, with a variety of possible lags.

No paper was submitted for publication.

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Paper 356-2013

SCAD: Development of Statistical Information Systems for the Provision of Census Data

Greg Pole, Statistics Centre Abu Dhabi

ABSTRACT

The Statistics Centre - Abu Dhabi (SCAD) was founded in 2008 and seeks to join the world's leading statistical organizations in statistical collection, production, and dissemination. In October 2011, SCAD conducted its first census of population and households. In addition to using innovative enumeration technologies (e.g., iPads), SCAD is also advancing the development of inventive and flexible tools for accessing rich census data. This is a positive shift towards greater access to public data in the Emirate.

The tools SCAD has developed for the 2011 Census use SAS® as a foundation and include: on-line Thematic Mapping, on-line Community Tables, and on-line Table Builder. These tools will be released to the Abu Dhabi government and public in 2012, as web-based applications.

No paper was submitted for publication.

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Paper 357-2013

Introducing and Producing Thunderstorm or Rain-drop Scatter Plots Using the SAS/GRAPH® Annotate Facility

Charlie Liu, Allergan, Inc.

ABSTRACT

A new type of plot, the thunderstorm (or rain-drop) scatter plot is introduced. Such a plot allows for viewing data with two or more values on the y-axis corresponding to one value on the x-axis for each of several subjects in a population. The resulting plot looks like rain-drops, with each rain-drop representing data for a single subject. When data for many subjects is plotted, it resembles a thunderstorm (hence the name). A thunderstorm or rain-drop scatter plot is a useful tool for data visualization and outlier detection. Using examples from clinical research, this paper shows how to create a thunderstorm or rain-drop scatter plot by using the SAS/GRAPH® annotate facility.

No paper was submitted for publication.

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Paper 358-2013

An Innovative Approach to Integrating SAS® Macros with GIS Software Products to Produce County-Level Accuracy Assessments.

Audra Zakzeski, USDA NASS
Robert Seffrin, US Dept. of Agriculture

ABSTRACT

The National Agricultural Statistics Service (NASS) produces an annual geospatial informational data set called the Cropland Data Layer over the U.S. detailing the land cover over each state while focusing on the vast array of crops grown during the months of April through October. While calculating an accuracy assessment of the land cover over an entire state is a relatively simple process, calculating an accuracy assessment down to a county- or crop-specific level can be extremely time-consuming. To simplify the process, NASS created an innovative SAS® program integrating the efficiency of the SAS Macro language with the geospatial analytical capabilities of the GIS program ERDAS Imagine. The procedure is operated using a SAS/AF® platform allowing analysts to easily investigate county-level information.

No paper was submitted for publication.

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Paper 359-2013

How to Become a GTL/PROC Template Jedi

Christopher Battiston, Hospital For Sick Children

ABSTRACT

This tongue-in-cheek paper will bring together Star Wars and SAS®, answering (at least potentially) how would SAS have been used a long time ago in a galaxy far, far away? Using PROC TEMPLATE, GTL, and ODS, examples will be shown of reports that could have been used by the Empire and the Rebel Alliance. Topics will include creating reports for mobile devices, bringing in images into the reports, and creating dynamic reports - without using Jedi mind tricks on anyone!

No paper was submitted for publication.

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Paper 360-2013

A Concise Display of Multiple Response Items

Patrick Thornton, SRI International

ABSTRACT

Surveys often contain multiple response items, such as language where a respondent may indicate that she speaks more than one language. In this case, an indicator variable (1=Yes, 0=No) is often created for each language category. This paper shows how a concise tabulation of the count and percent of respondents with a "Yes" on one or more indicator variables may be obtained using PROC TABULATE and a MULTILABEL format. A series of indicator variables is used to create a binary variable and its base-10 equivalent, and a MULTILABEL format is created to properly aggregate observations with a "Yes" on two or more indicator variables. The BAND function may also be used to easily subset observations with "Yes" responses on certain combinations of the indicator variables.

No paper was submitted for publication.

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Paper 363-2013

A Beginner's Introduction to an Idiot's Guide to PROC TEMPLATE and GTL for Dummies

Christopher Battiston, Hospital For Sick Children

ABSTRACT

The aim of this paper will be an extremely gentle introduction to the very exciting and somewhat intimidating world of PROC TEMPLATE and Graph Template Language (GTL). As these two SAS® features are still relatively new, not many people have had time to learn to learn them and see what they are capable of accomplishing with minimal effort.

No paper was submitted for publication.

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Paper 364-2013

Creating a Useful Operational Report

Andrew Hummel, Delta Air Lines

Robert Goldman, Delta Air Lines

ABSTRACT

Metrics and reports are highly valued by operational decision makers in order to make informed and data driven conclusions. However, there is a balance between presenting useful organized knowledge and displaying page upon page of raw useless data. SAS® has the power to produce a wide range of sophisticated graphs that are meaningful. The challenge is to produce a graph that quickly and accurately measures and displays the real-world operation while allowing decision makers to make operationally beneficial determinations. There are numerous SAS papers that give step-by-step instructions on how to build a graph; this is not such a paper. The goal of this paper is to show how we approached the challenge of building an operational report and the techniques used.

No paper was submitted for publication.

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Paper 367-2013

Do SAS® users read books? Using SAS graphics to enhance survey research

Barbara Okerson, WellPoint

ABSTRACT

In survey research, graphics play two important but distinctly different roles. Visualization graphics enable analysts to view respondent segments, trends and outliers that may not be readily obvious from a simple examination of the data. Presentation graphics are designed to quickly illustrate key points or conclusions to a defined audience from the analysis of the survey responses. SAS provides the tools for both these graphics roles through SAS/Graph and ODS graphics procedures. Using a survey of the Virginia SAS Users Group (VASUG) as the data source, this paper answers the above question and more while illustrating several SAS techniques for survey response visualization and presentation. The techniques presented here include correspondence analysis, spatial analysis, heat maps and others.

No paper was submitted for publication.

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Paper 369-2013

Using Design Principles to Make ODS Template Decisions

Helen Smith, RTI International
Susan Myers, RTI International

ABSTRACT

With the Output Delivery System (ODS), SAS® continues to provide programmers with many style templates for developing reports. These default templates and style definitions present the data in a clear and attractive manner often with no further thought needed. However, when producing complicated reports with multiple requirements, using basic design principles to determine which template or which custom style definition to use can make for a more readable and comprehensive final report.

This paper presents the code and the design considerations for two ODS reports; one, a redesign of a 10-plus-year-old SAS program originally designed with PUT statements, and two, a highly customized SAS program for delivering output in Microsoft Excel.

No paper was submitted for publication.

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Paper 375-2013

Extended SAS® GIFANIM Device Usage on Table Reporting and Template-Based Graphics

Xin Zhang, Emory University
Neeta Shenvi, Emory University
Azhar Nizam, Emory University

ABSTRACT

Dynamic, rather than static, graphs and tables often are more effective, interactive, and audience-engaging presentations. The SAS® GIFANIM device enables analysts to create GIF file-based slide shows for web and PowerPoint presentations, but it only supports device-based graphics and does not support SG procedure graphics. The GIFANIM device does not provide an animation of summary tables. In this paper, several ways of animating stand-alone summary tables, SG procedure graphics, and graphics with embedded tables, using combinations of the SAS DATA Step Graphics Interface (DSGI), printer-based methods, and Annotate data sets are explored. The advantages and disadvantages of each method are evaluated.

No paper was submitted for publication.

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Paper 376-2013

Horizontal Data Sorting and Insightful Reporting: A Useful SAS® Technique

Justin Jia, CIBC
Amanda Lin, Bell Canada

ABSTRACT

Sorting and ordering of data is a fundamental skill in SAS® data analysis. Data sorting can be vertical sorting, across rows, or horizontal sorting, across columns. Compared to vertical sort, horizontal sort is used less frequently, and it requires the user to employ multiple sophisticated SAS skills such as Transpose, Rotate, Array, Macro, etc. It is also an important and useful technique for advanced data analysis and reporting in customer profiling and metrics, which can significantly enhance the format and layout of data reporting, and thus provide informative insights into data. This paper will discuss the different approaches and methods of performing horizontal sorting and presentation of SAS data, which can also expand our horizon on data manipulation and SAS programming skills.

No paper was submitted for publication.

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Paper 378-2013

Extending SAS® Reports to Your iPhone

Koketso Moeng, Statistics South Africa

ABSTRACT

You have jumped through all of the hoops of creating the perfect dashboards for executives, marketing, human resources, finance, and the project office teams, but they hardly ever get used because, frankly, your users don't have enough time in the day to go through the reports. This is even more true if they have to be tethered to the servers in the office to do so. Luckily, a solution that suits the user with an iPad or iPhone is available.

Introducing Roambi—a mobile business intelligence (BI) platform that runs on Apple's iOS platform and can be easily integrated into your existing SAS® Enterprise BI platform.

No paper was submitted for publication.

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Paper 379-2013

The Dynamic Cube Viewer - OLAP Made Easy

Raymond Ebben, OCS Consulting

ABSTRACT

The Dynamic Cube Viewer is a bespoke browser-based application that offers an intuitive interface for business users to query OLAP cubes, without the need to have an understanding of OLAP cubes.

It has originally been developed as a benchmarking tool for the Association of Dutch Insurers and has been further developed by OCS Consulting to make it more generic.

The application reads only OLAP cube metadata and uses this to build the user interface. An impression can be found in the attached abstract.

No paper was submitted for publication.

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Paper 380-2013

Statistical Graphics for Clinical Research Using ODS Graphics Designer

Wei Cheng, Isis Pharmaceuticals, Inc.

ABSTRACT

Statistical graphics play an important role across various stages in clinical research. In this paper, I will show you the application interface and walk you through creating some commonly used statistical graphs for clinical research. The intended audience doesn't need to know SAS/GRAPH® syntax, but wants to create high-quality statistical graphs for clinical trials. Examples will use scrambled data from real world in CDISC format.

No paper was submitted for publication.

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Paper 381-2013

Visualize Your OLAP Cubes on a Map through a Stored Process

Frank Poppe, PW Consulting
Sjoerd Boogaard, Kiwa Prismant

ABSTRACT

What if you have an OLAP cube with a geo-dimension and you want a map from that, but you don't have ArcGIS? Enter this general stored process.

It can read measures and dimensions from the cube, and it uses SAS/GRAPH® software to combine that with boundary data, creating a color-coded map.

The map is clickable to navigate between the geographical levels.

A selection pane offers measures, and non-geographical dimensions surface as (hierarchical) filters.

Measures and dimensions are read from the metadata; values for the filters are read from the cube, using MDX.

Boundaries are clipped to the right zoom level, and the picture gets a background with roads from a web service.

HTML, CSS, and JS is generated to glue everything together and to deliver it to the portal.

No paper was submitted for publication.

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Paper 518-2013

SAS Metadata Reporting: Extracting Invaluable Information from SAS® Metadata

Jugdish Mistry, J2L Limited

ABSTRACT

We can see a trend in the past few releases of SAS® software; there is a big emphasis on using and moving to using more and more metadata. It is the one-stop place now, for all SAS applications, configuration, SAS® Data Integration Studio, SAS® Business Intelligence, and GRID developments. This wonderful method of storing data and managing SAS has no nice GUI for getting this information out. So if we wanted a user list, the name of the last person to update a SAS Data Integration flow, or list new jobs created in the past week, we have to use the appropriate GUI and manually get this information. This paper discusses how using SAS one could extract and generate useful reports from metadata.

No paper was submitted for publication.

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Paper 404-2013

Consistent and Organized Analysis: Moving Beyond Pie-in-the-Sky to Actual Implementation via SAS® Enterprise Guide®

Amber Schmitz, Prime Therapeutics

ABSTRACT

Consistency and timeliness are two goals that every reporting department strives to achieve. SAS® Enterprise Guide® provides tools that support these goals that many analysts overlook. The goal of this paper is to demonstrate the use of SAS Enterprise Guide to construct a project template that can be used to report standard metrics for various clients. The template is built around SAS Enterprise Guide tools that allow for consistent analysis methods, project organization, and version control documentation.

We explore: 1) Utilizing program code for efficient data pulls, 2) Using SAS Enterprise Guide tasks for analysis, 3) Exploiting built-in tools such as Notes and Process Flows for template organization and version control, 4) Demonstrating business intelligence via built-in graphs.

No paper was submitted for publication.

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Paper 406-2013

Using SAS® Enterprise Guide®: A System Administrator's Perspective

Haibo Jiang, Allergan, Inc.

ABSTRACT

This paper shares our experience of supporting SAS® Intelligence Platform server and client products with other Platform Administrators. We will focus on SAS® Enterprise Guide® as a client application on Windows desktop, and SAS servers (SAS Metadata Server®, Object Spawner, and SAS Application Servers) installed on Hewlett-Packard (HP) UNIX machine. The content of this paper will describe technical details related to user- and system-related activities in the following areas:

- [] Starting SAS servers and checking their status.
- [] Connection to SAS servers, user authorization, and authentication
- [] Initiation of requests from SAS Enterprise Guide, and using SAS Workspace Server and Stored Process Server.
- [] Performance considerations for the processing and presentation of analysis results in SAS Enterprise Guide.

No paper was submitted for publication.

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Paper 408-2013

Destination Known: Programmatically Controlling Your Output in SAS® Enterprise Guide®

Aaron Hill, MDRC

ABSTRACT

In a SAS® Enterprise Guide® project with multiple reports and graphics, you can organize output by selectively sending content to different ODS destinations embedded within the project. For example, within a single program, you can embed tables in HTML format, graphics in a SAS® report, and other output in text. The SAS syntax is simple and gives you programmatic control over all output and destinations. The result: a well-organized project with all results in their preferred format.

No paper was submitted for publication.

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Paper 410-2013

SAS® Enterprise Guide®: More Than a Gift from Outer Space

Tricia Aanderud, And Data Inc

ABSTRACT

SAS® Enterprise Guide® seem alien to you? Let's walk through the many SAS Enterprise Guide features using some UFO sightings data. During the presentation, you will learn some basics, how to change the advanced options, and also explore some newer features of SAS Enterprise Guide. Whether a SAS® programmer or an experienced SAS Enterprise Guide user, you will leave with some practical tips and learn what sightings were reported to the UFO websites.

No paper was submitted for publication.

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Paper 411-2013

Using VBA to Debug and Run SAS® Programs Interactively, Run Batch Jobs, Automate Output, and Build Applications

FENG LIU, Genworth Financial
Ruiwen Zhang, SAS

ABSTRACT

SAS® Enterprise Guide® provides an API that lets users automate almost every aspect of running Enterprise Guide projects or even SAS® programs. Visual Basic for Applications (VBA) under Excel provides a rich environment for debugging and running VBA applications. This paper shows how to use VBA to access the automation API of Enterprise Guide to do sophisticated tasks or build your own applications. VBA lets you create SAS programs on the fly, debug and run programs, analyze SAS “lists,” write logs to files, and examine SAS ODS. You can accomplish tasks like running PROC EXPORT automatically, which is not feasible through Enterprise Guide’s main interface. Advanced SAS users can run batch jobs, schedule jobs in parallel, or use SAS output as input to other applications.

No paper was submitted for publication.

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Paper 413-2013

Finally, a Tool for Business Users! A Step-By-Step Practical Approach to Pharma Sales Reporting Using SAS® Enterprise Guide® 4.3

Ramya Purushothaman, Cognizant Technology Solutions
Airaha Chelvakkanthan Manickam, Cognizant Technology Solutions

ABSTRACT

SAS® Enterprise Guide® can be considered the integrated development environment (IDE) for SAS® users. SAS Enterprise Guide has powerful data management capabilities, a sophisticated Query Builder, and data sampling, ranking, transposing, and even creating and editing data capabilities. This paper presents a real-time case study of reporting Pharma sales using SAS Enterprise Guide. It includes capturing drug sales dollars data and performing business transformations, summarization, and producing summary charts for executive reports and dashboards. The goal of this paper is to educate SAS users on how all of these actions are easily performed by a series of simple clicks in SAS Enterprise Guide 4.3.

No paper was submitted for publication.

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Paper 414-2013

Stealing the Admin's Thunder: SAS® Macros to Interact with the UNIX OS from within SAS® Enterprise Guide®

Thomas Kunselman, Southern California Edison

ABSTRACT

For SAS® users who are unfamiliar with the UNIX environment, simple tasks like copying, renaming, or changing the permission settings on a file can be very non-intuitive. Many of these tasks are not even possible through the SAS® Enterprise Guide® Server List Window. This paper will present several SAS macros that can be used to: view and kill UNIX host processes; display, compare, and manage folders and files, including copying subfolders and changing permissions and owners; display and set default file system permissions for new objects. Please note that for these macros to work, the X command must be allowed on the SAS server.

No paper was submitted for publication.

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Paper 417-2013

Update, Insert, and Carry-Forward Operations in Database Tables Using SAS® Enterprise Guide®

Thomas Billings, Union Bank

ABSTRACT

You want to use SAS® Enterprise Guide® to simulate database logic that includes any of: update, insert, carry-forward operations on old, changed, or new rows between two data sets, to create a new master data set. However, the Query Builder Task GUI does not have an Update/Insert option. Methods for simple types of update, insert, and/or carry-forward operations are described and illustrated using small data sets. First, we review Base SAS® methods, including DATA step and PROC SQL code. Then, two GUI-only/Task-based methods are described: one based on the Sort Data Task GUI; the other on the Query Builder Task GUI. The issue of whether integrity constraints are preserved is also discussed.

No paper was submitted for publication.

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Paper 417-2013

Update, Insert, and Carry-Forward Operations in Database Tables Using SAS® Enterprise Guide®

Sreenivas Mullagiri, iGATE Global Solution

ABSTRACT

You want to use SAS® Enterprise Guide® to simulate database logic that includes any of: update, insert, carry-forward operations on old, changed, or new rows between two data sets, to create a new master data set. However, the Query Builder Task GUI does not have an Update/Insert option. Methods for simple types of update, insert, and/or carry-forward operations are described and illustrated using small data sets. First, we review Base SAS® methods, including DATA step and PROC SQL code. Then, two GUI-only/Task-based methods are described: one based on the Sort Data Task GUI; the other on the Query Builder Task GUI. The issue of whether integrity constraints are preserved is also discussed.

No paper was submitted for publication.

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Paper 418-2013

A Comparison between GUI Prompts of SAS® Enterprise Guide® 4.1 and 4.3 and Approaches for Developing Next-Generation Prompts

Menaga Ponnupandy, Technosoft Corp

ABSTRACT

SAS® codes have to be edited when the criteria of execution changes. The use of GUI Prompts helps in preserving source code from changes and in automation of SAS® Enterprise Guide® Projects by passing run-time parameters to SAS. The main purpose of this paper is to compare the advanced features or functionalities of GUI Prompts between SAS Enterprise Guide 4.1 and SAS Enterprise Guide 4.3. This paper also discusses about the limited ability of prompts and provides tips for handling such situations or highlights the need for development of future generation prompts.

No paper was submitted for publication.

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Paper 419-2013

Making do with less: Emulating Dev/Test/Prod and Creating User Playpens in SAS® Data Integration Studio and SAS® Enterprise Guide®

David Kratz, d-Wise

ABSTRACT

Have you ever required a Dev / Test / Prod environment but found yourself, for whatever reason, unable to lay down another SAS Installation? Have you ever discovered that your results have been overwritten by a team member? Our ability to use SAS is shaped by the environment in which the software is installed, but we often don't have as much control over that environment as we'd like. However, we can often emulate the setup we'd prefer by configuring the one we have. This paper explores this concept using techniques which can be applied to development in SAS Data Integration Studio and SAS Enterprise Guide.

No paper was submitted for publication.

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Paper 425-2013

Price and Cross-Price Elasticity Estimation Using SAS®

Dawit Mulugeta, Cardinal Health
Jason Greenfield, Cardinal Health
Tison Bolen, Cardinal Health
Lisa Conley, Cardinal Health

ABSTRACT

The relationship between price and demand (quantity) has been the subject of extensive studies across many product categories, regions, and stores. Elasticity estimates have also been used to improve pricing strategies and price optimization efforts, promotions, product offers, and various marketing programs. This presentation demonstrates how to compute item-level price and cross-price elasticity values for two products with and without promotions. We used the midpoint formula, the OLS linear model, and the log-log model to measure demand response to change in price using six-month transaction-level data. Limitations and prospects of the methods used are discussed. The inclusion of promotions and prices of other products as covariates provides a better understanding of the dynamics of price-demand relationships.

No paper was submitted for publication.

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Paper 428-2013

Cox Proportional Hazard Model Evaluation in One Shot

Polina Kukhareva, University of North Carolina at Chapel Hill

ABSTRACT

Cox proportional hazard models are often used to analyze survival data in clinical research. This article describes a macro that makes producing the correct diagnostics for Cox proportional hazard models fast and easy. The macro has three advantages over performing all the diagnostics one by one. First, it makes it easy to run diagnostics for a long list of similar models. Second, it allows the specification of the variables for which diagnostics should be run. Third, it produces a comprehensive list of plots and tables necessary for evaluation of the Cox proportional hazard model assumptions as recommended in the SAS® course "Survival Analysis Using the Proportional Hazards Model." This macro can help save hours of code-writing time for a programmer who performs survival analysis.

No paper was submitted for publication.

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Paper 429-2013

Are You Discrete? Patients' Treatment Preferences and the Discrete Choice Experiment

Beeya Na, ICON Late Phase & Outcomes Research
Eric Elkin, ICON

ABSTRACT

The discrete choice experiment (DCE) was designed for use in economics and marketing research to study consumer preferences. DCE has been increasingly used in health care research as a method to elicit patient preferences for characteristics of different types of treatments. In a DCE, attributes with varying levels are defined for treatments. Respondents are presented with pairs of hypothetical treatments that have different combinations of attribute levels and are asked to choose their preferred treatment. Analyzing the responses allows evaluation of the relative importance of the attributes and the trade-offs that respondents are willing to make between the attributes. This paper explains how to set up the data and discusses how to use the PHREG and LOGISTIC procedures to appropriately analyze the conditional logit model.

No paper was submitted for publication.

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Paper 433-2013

A Multilevel Model Primer Using SAS® PROC MIXED

Bethany Bell, University of South Carolina
Mihaela Ene, University of South Carolina
Whitney Smiley, University of South Carolina
Jason Schoeneberger, University of South Carolina

ABSTRACT

This paper provides an introduction to specifying multilevel models using PROC MIXED. After a brief introduction to the field of multilevel modeling, users are provided with concrete examples of how PROC MIXED can be used to estimate (a) two-level organizational models, (b) two-level growth models, (c) three-level organizational models, and (4) three-level growth models. Both random intercept and random intercept and slope models are illustrated. Examples are shown using Early Childhood Longitudinal Study–Kindergarten cohort data. For each example, narrative explanations are accompanied by annotated examples of the PROC MIXED code and corresponding output. Users are also introduced to examining model fit using the SAS® macro MIXED_FIT as well as checking the distributional assumptions for two-level models using the SAS macro MIXED_DX.

No paper was submitted for publication.

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Paper 438-2013

A SAS® Macro for Applying Multiple Imputation to Multilevel Data

Stephen Mistler, Arizona State University

ABSTRACT

Single-level multiple imputation procedures (e.g., PROC MI) are not appropriate for multilevel data sets where observations are nested within clusters. Analyzing multilevel data imputed with a single-level procedure yields variance estimates that are biased toward zero and may yield other biased parameters. Given the prevalence of clustered data (e.g., children within schools; employees within companies; observations within people), a general approach is needed for handling missing data in multilevel data sets. This paper describes a SAS® macro, MMI_IMPUTE, that performs multiple imputation for clustered data sets with two levels. The macro uses a Bayesian implementation of the mixed linear model to generate imputations for lower-level incomplete variables, and uses single-level procedures similar to those used in PROC MI to generate imputations for cluster-level variables.

No paper was submitted for publication.

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Paper 439-2013

Regression of NASCAR: Looking into Five Years of Jimmie Johnson

Yun Gao, California State University Long Beach

ABSTRACT

In this paper, we investigate the winnings associated with different factors for NASCAR drivers. We want to predict the winnings that a driver can earn in a season given other, related factors, such as the number of races the driver competes in, the average finish position, or the make of car. We obtained 190 observations with 15 factors and randomly split the data into learning data and test data. Using the learning data set, we conducted multiple regression analyses to build a predictive model. Then we examined the final model with the test data set to see how well the model would work in the future. The model shows a high degree of accuracy in predicting the future.

No paper was submitted for publication.

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Paper 440-2013

A SAS® Macro for Computing Pooled Likelihood Ratio Tests with Multiply Imputed Data

Stephen Mistler, Arizona State University

ABSTRACT

For multilevel analyses (e.g., linear mixed models), researchers are often interested in pooling, interpreting, and testing both fixed effects and random effects. PROC MIANALYZE has two shortcomings in this regard. First, it cannot easily pool variance estimates. Second, the significance tests of these estimates are Wald-type tests that are inappropriate for testing variance estimates. Likelihood ratio testing is a more flexible approach, as it can be used to compare models that differ in both fixed and random effects. The likelihood ratio test statistic requires a complex calculation that is not included in PROC MIANALYZE. This paper describes a SAS macro, MMI_ANALYZE, that fits two user-specified models in PROC MIXED, pools the estimates from those models (including variance components), and implements a pooled likelihood ratio test.

No paper was submitted for publication.

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Paper 441-2013

Short-Term Costs of Smoking during Pregnancy: A Geometric Multidimensional Approach

Violeta Balinskaite, University of Bologna

ABSTRACT

Smoking during pregnancy imposes a considerable economic burden on society. This phenomenon has been studied fairly extensively in the United States, but little is known about its costs within the European Union. This paper attempts to estimate the additional neonatal costs of a mother in the European Union who smokes during pregnancy compared to the alternative of her not smoking. The geometric multidimensional approach that is used for analysis involves the use of conditional multiple correspondence analysis as a tool for investigating the dependence relationship between covariates and the assignment-to-treatment indicator variable within a strategy whose final aim is to find balanced groups.

No paper was submitted for publication.

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Paper 442-2013

Multilevel Reweighted Regression Models to Estimate County-Level Racial Health Disparities Using PROC GLIMMIX

Melody S. Goodman, Division of Public Health Sciences at Washington University in St. Louis School of Medicine
Lucy D'Agostino, Division of Public Health Sciences, Department of Surgery, Washington University School of Medicine

ABSTRACT

The agenda to reduce racial health disparities has been set primarily at the national and state levels. These levels may be too far removed from the individual level where health outcomes are realized, and this disconnect may be slowing the progress made in reducing these disparities. This paper focuses on establishing county-level prevalence estimates of diabetes among non-Hispanic whites and non-Hispanic blacks. These estimates use multilevel reweighted regression models through the GLIMMIX procedure with 2010 Behavioral Risk Factor Surveillance System data and 2010 census data. To examine whether racial disparities exist at the county level, the paper estimates the risk difference of prevalence estimates between races. It subsequently ranks counties and states by the magnitude of disparities.

No paper was submitted for publication.

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Paper 443-2013

Commuting Time and Accessibility in a Joint Residential Location, Workplace, and Job Type Choice Model

Ignacio A. Inoa, Université de Cergy-Pontoise

ABSTRACT

The effect of an individual-specific measure of accessibility to jobs is analyzed using a three-level nested logit model of residential location, workplace, and job-type choice. This measure takes into account the attractiveness of different job types when the workplace choice is anticipated in the residential location decision. The model allows for variation in the preferences for job types across individuals and accounts for individual heterogeneity of preferences at each choice level in the following dimensions: education, age, gender, and children. Using data from the Greater Paris Area, estimation results indicate that the individual-specific accessibility measure is an important determinant of the residential location choice and its effects strongly differ along the life cycle.

No paper was submitted for publication.

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Paper 444-2013

Examining Mediator and Indirect Effects of Loneliness in Social Support on Social Well-Being Using the Baron and Kenny Method and a Bootstrapping Method

Abbas Tavakoli, University of South Carolina
Sue Heiney, University of South Carolina

ABSTRACT

This study examines the mediator effect and the indirect effect of loneliness in social support on social well-being by using two methods: the Baron and Kenny method and a bootstrapping method. The cross-sectional data come from a longitudinal randomized trial design that had 185 participants. Baron and Kenny steps and Hayes were used to examine the mediator effect. The Baron and Kenny results indicate no mediator effect for loneliness in the relationship between social support and social well-being. Bootstrapping results indicate that the direct effect was 0.591 (95% CI: 0.589-0.593 for normal theory and 0.481- 0.690 for percentile) and the indirect effect was 0.040 (95% CI: 0.039-0.040 for normal theory and 0.006-0.087 for percentile). The results show that both methods have significant indirect effect.

No paper was submitted for publication.

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Paper 445-2013

Models for Ordinal Response Data

Robin High, University of Nebraska Medical Center

ABSTRACT

The types of computations with response data having ordered categories with SAS® procedures are not well known. Various models can be evaluated through programming statements entered into PROC NLMIXED including the partial proportional odds, adjacent logit, continuation ratio, and stereotype models. The process requires no restructuring of the input data set, as required with procedures that can produce a few of these models. The correct interpretation of ordinal logistic regression models depends on how both the response and explanatory data are coded and if any formats are applied. Implementation of these models assumes a background with general linear models and categorical data analysis including maximum likelihood equations and computing odds ratios with binary data.

No paper was submitted for publication.

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Paper 450-2013

Markov Chains and Zeros in My Data: Bayesian Approaches in SAS® That Address Zero Inflation

Matthew Russell, University of Minnesota

ABSTRACT

In recent releases of SAS/STAT® software, a number of procedures that perform Bayesian methodologies have been incorporated. A common modeling problem across many disciplines is that of addressing larger-than-expected proportions of zeros, a problem that is exacerbated when counts and probabilities of zeros are heterogeneous. This paper uses examples from the ecological literature to perform Bayesian analyses on discrete data with zero inflation. We focus primarily on the MCMC procedure, but also address use of Bayesian methods in the FMM and GENMOD procedures. We fit zero-inflated models under conditional binomial, Poisson, and negative binomial assumptions both with and without random intercept effects.

No paper was submitted for publication.

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Paper 451-2013

Exploring Health Trends and Risk Behavior Analysis in American Youth Using PROC SURVEYFREQ and PROC SURVEYLOGISTIC

Deanna Schreiber-Gregory, North Dakota State University

ABSTRACT

This study looks at recent health trends and behavior analyses of youth in America. Data used in this analysis was provided by the Centers for Disease Control and Prevention and gathered using the Youth Risk Behavior Surveillance System (YRBSS). This study outlines demographic differences in risk behaviors, health issues, and reported mental states. Interactions between risk behaviors and reported mental states were also analyzed. Visual representations of frequency data for the national results are also provided and discussed. A final regression model including the most significant contributing factors to suicidal ideation is provided and discussed. Results included reporting differences between the years 1991 and 2011. All results are discussed in relation to current youth health trend issues. Data was analyzed using SAS® 9.3.

No paper was submitted for publication.

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Paper 452-2013

Modeling Change over Time: A SAS® Macro for Latent Growth Curve Modeling

Pei-Chin Lu, University of Northern Colorado
Robert Pearson, University of Northern Colorado

ABSTRACT

In recent years, latent growth curve (LGC) modeling has become one of the most promising statistical techniques for modeling longitudinal data. The CALIS procedure in SAS® 9.3 could be used to fit an LGC model. As one application of structural equation modeling (SEM), LGC modeling relies on indices to evaluate model fit. However, it has been pointed out that when you are obtaining incremental fit indices, the default baseline model used in many popular SEM software packages, including PROC CALIS, is generally not appropriate for LGC models (Widaman and Thompson 2003). This paper illustrates the basic framework of an LGC model and introduces a SAS macro, %LGCM, that fits a latent growth model and computes incremental fit indices based on more appropriate baseline models.

No paper was submitted for publication.

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Paper 453-2013

Forecasting Net Job Creation Using SAS®

Casey Sperrazza, University of Alabama

ABSTRACT

Using data from the U.S. Census Bureau's Business Dynamics Statistics, net job creation is forecast economywide and by sector. Forecasts are carried out economywide using exponential smoothing and ARIMA models. Forecasting is carried out by Census Bureau-defined sectors using ARIMA models. Data are from 1977–2010, and net job creation is forecast through 2020.

This was a late withdrawal and was not presented.

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Paper 454-2013

The Box-Jenkins Methodology for Time Series Models

Theresa Ngo, Warner Bros. Home Entertainment

ABSTRACT

A time series is a set of values of a particular variable that occur over a period of time in a certain pattern. The most common patterns are increasing or decreasing trend, cycle, seasonality, and irregular fluctuations (Bowerman, O'Connell, and Koehler 2005). To model a time series event as a function of its past values, analysts identify the pattern with the assumption that the pattern will persist in the future. Applying the Box-Jenkins methodology, this paper emphasizes how to identify an appropriate time series model by matching behaviors of the sample autocorrelation function (ACF) and partial autocorrelation function (PACF) to the theoretical autocorrelation functions. In addition to model identification, the paper examines the significance of the parameter estimates, checks the diagnostics, and validates the forecasts.

No paper was submitted for publication.

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Paper 456-2013

Exploring Time Series Data Properties in SAS®

David Maradiaga, Louisiana State University
Aude Pujula, Louisiana State University
Hector Zapata, Louisiana State University

ABSTRACT

Box and Jenkins popularized graphical methods for studying time series properties of time series data. Dickey and Fuller did the same for unit root tests. Both methods seek to understand the nonstationary properties of data, and SAS® software is a popular tool used by applied researchers. The purpose of this paper is to provide a series of steps using the SAS macro language, PROC SGPLOT, PROC ARIMA, PROC AUTOREG, and the %dfstest macro to diagnose nonstationary properties of data. A comparison of three competing SAS procedures is presented, with SAS capabilities highlighted using simulated time series.

No paper was submitted for publication.

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Paper 491-2013

DICHOTOMIZED_D: A SAS® Macro for Computing Effect Sizes for Artificially Dichotomized Variables

Patrice Rasmussen, 5336 Clover Mist Drive
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Patricia Rodriguez de Gil, University of South Florida
Jeanine Romano, University of South Florida
Aarti Bellara, University of South Florida
Harold Holmes, University of South Florida
Yi-Hsin Chen, University of South Florida

ABSTRACT

Measures of effect size are recommended to communicate information about the strength of relationships between variables, providing information to supplement the reject/fail-to-reject decision obtained in statistical hypothesis testing. With artificially dichotomized response variables, seven methods have been proposed to estimate the standardized mean difference effect size that would have been realized before dichotomization. This paper provides a SAS® macro, DICHOTOMIZED_D, for computing these seven effect size estimates by utilizing data from FREQ procedure output data sets. The paper provides the macro programming language, as well as results from an executed example of the macro.

No paper was submitted for publication.

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Paper 504-2013

Estimating Harrell's Optimism on Predictive Indices Using Bootstrap Samples

Yinghui Miao, NCIRE
Irena Cenzer, UCSF
Katharine Kirby, UCSF
John Boscardin, UCSF

ABSTRACT

In aging research, it is important to develop and validate accurate prognostic models whose predictive accuracy will not degrade when applied in external data sources. While the most common method of validation is split sample, alternative methods such as cross-validation and bootstrapping have some significant advantages. The macro that we present calculates Harrell's optimism for logistic and Cox regression models based on either the c-statistic (for logistic) or Harrell's c (for Cox). It allows for both stepwise and best subset variable selection methods, and for both traditional and .632 bootstrapping methods.

No paper was submitted for publication.

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Paper 460-2013

Building a SAS® Grid Support Capability in the Enterprise

Andy Birds, The Co-operative Banking Group
Chris Rigden, SAS

ABSTRACT

Building SAS® Grid support capability within an organization's IT support function requires IT managers to consider many different aspects. There is a need for SAS support to fit seamlessly into the Enterprise IT support model and comply with IT policies based on standard frameworks such as ITIL, while maintaining a level of business engagement that is far beyond that which is required of traditional IT support teams.

We will outline a practical framework including the policies and procedures required to support a SAS Grid in a way that provides a solid foundation that meets the immediate and ongoing business requirements. We will discuss how to embed SAS into an organization's standard IT processes and how to ensure that active business engagement is a standard activity.

No paper was submitted for publication.

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Paper 467-2013

SAS® Release Management and Version Control

John Heaton, Heritage Bank

ABSTRACT

Release Management or Application Lifecycle Management is the process of versioning and migrating code from one environment to another in a controlled, auditable, and repeatable process. This paper looks at the capabilities of the current SAS® 9.3 toolset to build an effective Release Management process within your organization.

No paper was submitted for publication.

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Paper 471-2013

Creating metadata environment from existing one for testing purpose

Jouni Javanainen, Aureolis

ABSTRACT

Most organizations have a need for the development, test and production environments, either in the same physical platform or on separate platforms. Separate environments may not use the same ports of communication. Using package of migration from existing metadata, it is possible to define specific communication ports, so that it does not disturb the other environments. In addition to this it is needed very little extra finishing steps, such as paths of directories or libraries.

It is important that this type of environment can be created through a formal process quickly, reliably and efficiently. SAS has a good set of tools to create this a well-documented method for creating environments. This paper covers how easily you can create identical environments for development and testing purposes.

No paper was submitted for publication.

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Paper 479-2013

Benchmarking SAS® I/O: Verifying I/O Performance Using fio

Spencer Hayes, J. S. Hayes, Inc.

ABSTRACT

Input/Output (I/O) throughput is typically the most important computing aspect of a SAS® environment. Bandwidth requirements ranging from 25MB/sec/core to 135MB/sec/core are common in a high-performance SAS system. Insuring that the storage subsystem can meet the demands of SAS is critical to delivering the performance required by the business and user community. Ideally, SAS administrators could run real-world SAS jobs to benchmark the I/O subsystem. However, technical and logistical challenges frequently make that option impractical. The open source software tool called "fio" provides a method for accurately simulating I/O workloads. It is configurable to match closely the existing or expected I/O profile for a SAS environment.

No paper was submitted for publication.

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Paper 481-2013

Hardening a SAS® Installation on a Multi Tier installation on Linux

Jan Bigalke, Allianz Managed Operations & Services SE

ABSTRACT

The security requirements of today require in some use cases the hardening of a SAS® Installation. This paper describes the practical steps of securing the SAS web applications and the impact to the Base SAS® Services on the SAS computer tiers. The SAS® Enterprise BI Server will be the object of this explanation. The principles of a secure architecture will be described and the options to secure the individual components presented.

No paper was submitted for publication.

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Paper 485-2013

Bridging the Gap Between SAS® Applications Developed by Business Units and Conventional IT Production

Thomas Billings, Union Bank
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ABSTRACT

Multiple factors are involved in the decision by an enterprise to decide whether to allow a business unit to run its own production versus having SAS® applications developed by business units run in conventional IT production. There can be a wide gap between the business unit view of "production-ready" programs vs. core IT standards for production systems. The nature of the gap is discussed here, and also the risks of business-run production. Specific suggestions are made regarding whether IT and business should have joint ownership of critical SAS applications vs. segregated roles, and when/how should SAS-based systems be migrated into a fully controlled IT production environment.

No paper was submitted for publication.

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Paper 490-2013

SAS® Virtual Desktop Deployment at the U.S. Bureau of the Census

Lori Guido, US Census Bureau
Michael Bretz, SAS
Stephen Moore, US Census Bureau

ABSTRACT

The U.S. Census Bureau has a SAS® user base of approximately 2600 users requiring deployment of many SAS client solutions on individual desktops. Using new deployment strategies, we reduced deployment delivery time while increasing installation quality and standardization.

Census investigated and implemented client virtualization to simplify the configuration, deployment and support of their end-user computers. Client virtualization looks at changing the 1 end-user to 1 desktop computer paradigm for SAS software installation and finding ways of reducing the administrative burden associated with the one end user desktop computer while gaining operational efficiencies and a more robust deployment model. This paper will focus on the following topics: Primary drivers for adopting this technology; Census SAS support model; Client virtualization architecture; Deployment best practices.

No paper was submitted for publication.

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Paper 493-2013

Writing a Useful Groovy Program When All You Know about Groovy Is How to Spell It

Jack Hamilton, Kaiser Foundation Hospitals

ABSTRACT

SAS® is a powerful programming system, but it can't do everything. Sometimes you have to go beyond what SAS provides. There are several built-in mechanisms for doing this, and one of the newest is PROC GROOVY. It sounds like a product of San Francisco's Haight-Ashbury, but it's actually a programming language based on another product with San Francisco Bay area roots, Java. You can think of it as a simplified, easier to use version of Java -- simplified enough that you can put together a useful PROC GROOVY program from Internet examples without knowing anything about the language. This presentation focuses on handling directories and ZIP files, but many other things are possible.

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Paper 494-2013

Pi in the Sky: Building a Private SAS® Cloud

Andrew Macfarlane, SAS
Frank Schneider, Allianz Managed Operations and Services SE

ABSTRACT

In today's climate, cloud computing is a de facto term used in IT and cloud capability a mandatory requirement for all software vendors. Based on real-life experience, this paper will discuss challenges, opportunities, and options for developing and implementing a private SAS® cloud using SAS® 9.3.

For the purposes of this paper, we focus on some essential concepts of cloud computing including Multi Tenancy (Resource pooling); Scalability and rapid elasticity of resources, Shared Services and the building blocks of Platform as a Service, and suggest approaches for applying these concepts within the SAS platform.

No paper was submitted for publication.

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Paper 016-2013

Set Yourself Free: Use ODS Report Writing Technology in SAS® Enterprise Guide® Instead of Dynamic Data Exchange in PC SAS®, Part II SAS Code Revealed

Robert Springborn, Office of Statewide Health Planning & Development

ABSTRACT

The ability to prepare custom designed reports and convey your message in a clear and concise manner is very important in today's sophisticated business environment. Traditional use of Dynamic Data Exchange (DDE) in PC SAS® to produce custom designed reports is the result of widespread and popular use of Microsoft Excel. However with most business organizations transitioning to SAS® Enterprise Business Intelligence (EBI), where DDE is not compatible, ODS Report Writing technology is a powerful alternative to create custom designed reports in SAS® Enterprise Guide®. The driving force for this topic was the need to create hospital-level data discrepancy reports which compare clinical data to administrative data to verify risk factors used in a risk-adjusted operative mortality model

No paper was submitted for publication.

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Paper 539-2013

SAS® Analytics Optimized with Intel Technologies

Mark Pallone, Intel Corporation

ABSTRACT

Several server platform configurations and technologies have a direct impact on performance and scalability that are critical for SAS® workloads. Intel Cache Acceleration Solution (iCAS) reduces storage latency and transparently accelerates Applications, Servers, and Virtual Machines. iCAS was used to measure IO performance improvements for SAS mixed analytics workload. Resulting IO performance metrics will be shared. Performance testing was conducted on 3rd Generation Intel Core processor family server platform that is expected to ship in Q3 2013. Comparison of performance metrics between 2nd and 3rd Generation Intel Core processor families based on mixed analytics workload will be reviewed. In addition, some preliminary performance metrics on 4th generation Intel iCore processor will be shared as well.

No paper was submitted for publication.

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Paper 020-2013

Using the SAS® Data Step to Generate HTML or Text-Based Mark-Up

Matt Karafa, The Cleveland Clinic

ABSTRACT

The author presents macros which produce reports direct to MS Word-compliant HTML, thus demonstrating an alternative method to create MS Word documents from SAS®. The first step is to create a mock-up of the table in an external mark-up editor, then use SAS to produce the text that creates the file, interspersing the required data between the mark-up tags. These macros demonstrate a way to increase the control and flexibility over what is available via the traditional ODS RTF or HTML mechanism. Further, via this method, any text-based mark-up language (HTML, RTF, LaTeX, etc.) can be produced with a minimal effort.

No paper was submitted for publication.

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Paper 023-2013

Using Mail Functionality in SAS®

Erik Tilanus, Synchrona

ABSTRACT

The DATA step can write information to virtually any destination. You are probably familiar with writing to SAS data sets and external files. But also email can function as a destination.

The paper will discuss how to configure the email features in the system options and share practical hints how to use them. Then we will proceed with sending a simple email from the DATA step, with or without attachments. Then we will use extensions to the standard PUT statement to support the email facility to send personalized mass-mailings. Finally, we will show how to send procedure output that has been created using ODS.

No paper was submitted for publication.

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Paper 026-2013

ISO 101: A SAS® Guide to International Dating

Peter Eberhardt, Fernwood Consulting Group Inc
Xiaojin Qin, Covance Pharmaceutical Research and Development CO., Ltd.

ABSTRACT

For most new SAS® programmers, SAS dates can be confusing. Once some of this confusion is cleared, the programmer might then come across the ISO date formats in SAS, and another level of confusion sets in. This paper reviews SAS date, SAS datetime, and SAS time variables and some of the ways they can be managed. It then turns to the SAS ISO date formats and shows how to make your dates international.

No paper was submitted for publication.

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Paper 028-2013

Be Prompt: Do it Now! Creating and Using Prompts in SAS® Enterprise Guide®

Ben Cochran, The Bedford Group

ABSTRACT

Prompts are a quick and powerful way to give your programs, tasks, and projects in SAS® Enterprise Guide® interactive capabilities. By putting prompts in your code, you increase your ability to reuse code and also enable the code to be customized using the value that is entered through the prompt. Prompts are fairly easy to create, and this paper takes a step-by-step approach that explains how to create and use prompts.

No paper was submitted for publication.

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Paper 029-2013

"How Do I ...?" There Is More Than One Way to Solve That Problem; Why Continuing to Learn Is So Important

Art Carpenter, CA Occidental Consultants

ABSTRACT

In the SAS® forums, questions are often posted that start with "How do I . . . ?". Generally, there are multiple solutions to the posted problem, and these vary from simple to complex. All too often, the simple solution is both inefficient and reflects a naive understanding of the SAS language. This would not be so very bad except sometimes the responder thinks that their response is the best solution or, perhaps worst, the only solution.

No paper was submitted for publication.

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Paper 030-2013

Inventory Your Files Using SAS®

Brian Varney, Experis Business Analytics

ABSTRACT

Whether you are attempting to figure out what you have when preparing for a migration or you just want to find out which files or directories are taking up all of your space, SAS® is a great tool to inventory and report on the files on your desktop or server. This paper presents SAS code to inventory and report on the location you want to inventory.

No paper was submitted for publication.

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Paper 031-2013

This Is the Modern World: Simple, Overlooked SAS® Enhancements

Bruce Gilson, Federal Reserve Board

ABSTRACT

Some smaller, less dramatic SAS® enhancements seem to fall through the cracks. Users continue to employ older, more cumbersome methods when simpler solutions are available. This includes enhancements introduced in SAS 9.2, SAS 9, SAS 8, or even SAS 6! This paper reviews underutilized enhancements that allow you to more easily

1. Write date values in the form yyyymmdd.
2. Increment date values with the INTNX function.
3. Create transport files: PROC CPORT/CIMPORT versus PROC COPY with the XPORT engine.
4. Count the number of words or the number of occurrences of a character or substring in a character string.
5. Concatenate character strings.
6. Check if any of a list of variables contains a value.
7. Sort by the numeric portion of character values.
8. Retrieve DB2 data on z/OS mainframes.

No paper was submitted for publication.

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Paper 037-2013

Maximizing the Power of Hash Tables

David Corliss, Magnify Analytic Solutions

ABSTRACT

Hash tables provide a powerful methodology for leveraging big data by formatting an n-dimensional array with a single, simple key. This advancement has empowered SAS® programmers to compile exponentially more missing data points than ever before, creating tables with hundreds of fields of all types in which the majority of data in this vast array is empty. However, the hash structure also supports analytics to calculate maximum likelihood estimates for missing values, leveraging extensive data resources available for each individual. An important application of this is in sentiment analysis, where social media text expresses likes or dislikes for particular products. Customer data, including sentiments for other products, are used to model sentiment where an individual's preference has not been made known.

No paper was submitted for publication.

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Paper 038-2013

Creating Graph Collections with Consistent Colors Using ODS Graphics?

Philip Holland, Holland Numerics Ltd

ABSTRACT

Collections of line graphs or bar charts, where the graph data is grouped by the same value, are frequently used to identify differences and similarities in behavior. Unfortunately, by default, the colors used for each line can change across the graph collection if some group values are not present in every graph. In SAS/GRAPH®, this problem has been solved by generating SYMBOL or PATTERN statements based on the data, or using annotation to create all of the graph lines, bars and legends. Neither of these solutions is readily available in ODS Graphics. This paper will solve this problem using macros with PROC SGPLOT and PROC TEMPLATE, giving the user complete control over how every graph looks.

No paper was submitted for publication.

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Paper 040-2013

Have it Your Way: Creating Reports with the DATA Step Report Writing Interface

Pete Lund, Looking Glass Analytics

ABSTRACT

SAS provides powerful, flexible reporting procedures. ODS provides enormous control over the appearance of procedure output. Still, for times where you need more, the Report Writing Interface can help. "Report Writing Interface" simply refers to using the ODSOUT object in a DATA step. This allows you to lay out the page, create tables, embed images, add titles, and more using any desired DATA step logic. Most style capabilities of ODS are available, so your output can have fonts, colors, backgrounds, and borders to customize your report. This presentation will cover the basics of the ODSOUT object and then walk through techniques to create four "real world" examples. You might even go home and replace some PROC REPORT code!

No paper was submitted for publication.

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Paper 043-2013

Stop your 'Wine"-ing: Use a Stored Process!

Tricia Aanderud, And Data Inc
Angela Hall, SAS

ABSTRACT

One of the major benefits of using SAS® Stored Processes is extendibility. SAS® stored processes are one of the most customizable products; there are several advantages, such as the ability to set up reports that can run in various locations, enhance out-of-the box functionality with custom widgets, and leverage all of the stored process server options. In this discussion, you will learn advanced tips and tricks for using stored processes within SAS BI clients.

No paper was submitted for publication.

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Paper 056-2013

How Am I Driving - My Business? (Techniques, from the Insurance Industry That Can Be Applied to Other Business Areas to "Drive" Better Performance)

Guy Garrett, Achieve Intelligence
Steve Morton, Applied System Knowledge Ltd

ABSTRACT

This paper runs through the high level strategic measurements that general insurance companies need to routinely monitor, looking at the technical solutions available today using SAS® software. The techniques used in this paper can also be applied to other industries helping executives and managers to measure and monitor their businesses' performance.

No paper was submitted for publication.

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Paper 064-2013

SAS® High-Performance Analytics: Big Data Brought to Life on the EMC Greenplum Data Computing Appliance

Paul Cegielski, Greenplum

ABSTRACT

This presentation will describe the proof-of-concept project to apply high-performance analytics (HPA) to call center and other data in an effort to quickly identify and act on customer service opportunities. Discussion will include functionality and performance metrics of SAS® High-Performance Analytics procedures, the new SAS® DS2 language, the fast-loading capability of the Greenplum DCA, and the ability to deploy models built on the DCA to other databases. Since some of the most valuable data is unstructured, such as the free-form text notes entered by call center staff, the presentation will describe how SAS® Text Miner is used in conjunction with the HPA DCA to include unstructured data in analyses and modeling.

No paper was submitted for publication.

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Paper 488-2013

Big Data - Dream IT. Build IT. Realize IT.

Paul Kent, SAS
Andy Mendelsohn, Oracle Corporation
Maureen Chew, Oracle Corporation
Steven Holmes, Bureau of Labor Statistics

ABSTRACT

This session will present unique perspectives on building solutions for Big Data architectures to enable turning the vision into reality. Guest speakers Andrew Mendelsohn, Senior Vice President, Oracle Database Server Technologies, and Paul Kent, SAS Vice President, Big Data, will discuss collaborative efforts towards best-of-breed Big Data analytic solutions and convergence of game-changing IT strategies. We'll also hear from the Bureau of Labor & Statistics on how their SAS® usage produces one of the mostly watched economic series (U.S. employment) each month.

No paper was submitted for publication.

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Paper 072-2013

SAS-Oracle Options and Efficiency: What You Don't Know Can Hurt You

John Bentley, Wells Fargo Bank

ABSTRACT

SAS/Access engines allow SAS to read, write, and alter almost any relational database. Using the engine right out of the box works OK, but there are a host of options that if properly used can improve performance, sometimes greatly. In some cases though an incorrect option value will degrade performance. This paper will review cross-database SAS/Access engine options that can impact performance. Examples and test cases using an Oracle database will be provided. All levels of SAS programmers, Enterprise Guide users, and non-Oracle database users will find the paper useful.

No paper was submitted for publication.

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Paper 075-2013

Data Fitness: A SAS® Macro-based Application for Data Quality of Large Health Administrative Data

Mahmoud Azimae, Institute for Clinical Evaluative Sciences

ABSTRACT

This paper introduces a SAS® macro-based application package as a solution for creating automated data quality assurance reports for large health administrative data. It includes methods and tools for developing metadata for a SAS data holding, for measuring different data quality indicators using a Data Quality Framework, and for generating automated visual data quality reports. Because quality of data documentation should be considered as a usability and interpretability factor for good quality data, this application uses the same metadata developed for data quality purposes to generate an automated web-based data dictionary as well.

No paper was submitted for publication.

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Paper 082-2013

Sharpening Your Skills in Reshaping Data: PROC TRANSPOSE vs. Array Processing

Arthur Li, City of Hope

ABSTRACT

A common data managing task for SAS® programmers is transposing data. One of the reasons for performing data transformation is that different statistical procedures require different data shapes. In SAS, two commonly used methods for transposing data are using either the TRANPOSE procedure or array processing in the DATA step. Using PROC TRANSPOSE mainly requires grasping the syntax and recognizing how to apply different statements and options in PROC TRANSPOSE to different types of data transposition. On the other hand, utilizing array processing in the DATA step requires programmers to understand how the DATA step processes data during the DATA step execution. In this talk, these two methods will be reviewed and compared through various examples.

No paper was submitted for publication.

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Paper 085-2013

Using Data Mining in Forecasting Problems

Timothy Rey, Dow Chemical Company
Chip Wells, SAS
Justin Kauh, Tata Consulting

ABSTRACT

In today's ever-changing economic environment there is ample opportunity to leverage the numerous sources of time series data now readily available to the savvy business decision maker. Time series data can be used for business gain if the data is converted to information and then knowledge. Data mining processes, methods, and technology oriented to transactional-type data (data not having a time series framework) have grown immensely in the last quarter century. There is significant value in the interdisciplinary notion of data mining for forecasting when used to solve time series problems. The presentation describes how to get the most value out of the myriad of available time series data by utilizing data mining techniques specifically oriented to data collected over time.

No paper was submitted for publication.

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Paper 093-2013

Using the Boosting Technique to Improve the Predictive Power of a Credit Risk Model

Andres Gonzalez, Colpatria / Scotia Bank
Darwin Amezcuita, Colpatria-Scotia Bank
Alejandro Correa Bahnsen, Luxembourg University

ABSTRACT

In developing a predictive model, the complexity of the population used to build the model can lead to very weak scorecards when a traditional technique such as logistic regression or an MLP neural network is used. For these cases some nontraditional methodologies like boosting could help improve the predictive power of any learning algorithm. The idea behind this technique is to combine several weak classifiers to produce a much more powerful model. In this paper, boosting methodology is used to enhance the development of a credit risk scorecard in combination with several different techniques, such as logistic regression, MLP neural networks, and others, in order to compare the results of all methodologies and determine in which cases the boosting algorithm increases model performance.

No paper was submitted for publication.

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Paper 099-2013

Replacing Manual Coding of Customer Survey Comments with Text Mining: A Story of Discovery with Textual Data in the Public Sector

Jared Prins, Alberta Tourism, Parks and Recreation

ABSTRACT

A common approach to analyzing open-ended customer survey data is to manually assign codes to text observations. Basic descriptive statistics of the codes are then calculated. Subsequent reporting is an attempt to explain customer opinions numerically. While this approach provides numbers and percentages, it offers little insight. In fact, this method is tedious and time-consuming and can even misinform decision makers.

As part of the Alberta government's continual efforts to improve its responsiveness to the public, the Alberta Parks division transitioned from manual categorization of customer comments to a more automated method that uses SAS® Text Miner. This switch allows for faster analysis of unstructured data, and results become more reliable through the consistent application of text mining.

No paper was submitted for publication.

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Paper 106-2013

How to Improve Your Risk-Adjusted Return on Capital: Pricing Optimization in Lending

Boaz Galinson, LEUMI

ABSTRACT

Lending is the core business of most banks. One may think that a bank should opt for a lending pricing strategy of seeking the highest price that the credit officer can obtain from his borrower. This paper claims that following a "maximal price" strategy will eventually lead to an inferior credit portfolio.

I describe how to price a loan to meet at least the return required by the stock holders and to improve RAROC. The strategy may be a challenge in some assets classes. It can be difficult to agree on a price which includes the minimal credit risk premium which compensates the risks. A solution which accounts for all borrower activities with the bank is presented.

No paper was submitted for publication.

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Paper 111-2013

A Case Study in Firmwide Stress Testing: Engineering the CCAR Process

Carsten Heiliger, Sun Trust

ABSTRACT

Stress testing has become pervasive. The trouble lies in isolating the substantive, insightful activity from the overwrought chaff. Almost an overused platitude, the term “stress testing” can be inserted into just about any process in a financial institution, and there will be an army of consultants claiming to have a best-practice opinion on the topic. The reality is far more convoluted. Often, what is referred to as a stress test is simply a sensitivity analysis with a focus on a suboptimal outcome. Other times, an operationally focused risk assessment is termed a stress test, as it is analyzing processes performing below an optimal level.

No paper was submitted for publication.

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Paper 116-2013

A Day in the Life of Data - Part 1

Brian Bee, The Knowledge Warehouse Ltd

ABSTRACT

As a new SAS® programmer, you may be overwhelmed with the variety of tricks and techniques that you see from experienced SAS programmers; as you try to piece together some of these techniques you get frustrated and perhaps confused because the data showing these techniques are inconsistent. That is, you read several papers and each uses different data.

This series of four papers is different. They will step you through several techniques but all four papers will be using the same data. The authors will show how value is added to the data at each of the four major steps: Input, Data Manipulation, Data and Program Management, and Graphics and Reporting.

No paper was submitted for publication.

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Paper 117-2013

A Day in the Life of Data - Part 2

Harry Droogendyk, Stratia Consulting Inc.

ABSTRACT

As a new SAS® programmer, you may be overwhelmed with the variety of tricks and techniques that you see from experienced SAS programmers; as you try to piece together some of these techniques you get frustrated and perhaps confused because the data showing these techniques are inconsistent. That is, you read several papers and each uses different data.

This series of four papers is different. They will step you through several techniques but all four papers will be using the same data. The authors will show how value is added to the data at each of the four major steps: Input, Data Manipulation, Data and Program Management, and Graphics and Reporting.

No paper was submitted for publication.

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Paper 118-2013

A Day in the Life of Data - Part 3

Peter Crawford, Crawford Software Consultancy Limited

ABSTRACT

As a new SAS® programmer, you may be overwhelmed with the variety of tricks and techniques that you see from experienced SAS programmers; as you try to piece together some of these techniques you get frustrated and perhaps confused because the data showing these techniques are inconsistent. That is, you read several papers and each uses different data.

This series of four papers is different. They will step you through several techniques but all four papers will be using the same data. The authors will show how value is added to the data at each of the four major steps: Input, Data Manipulation, Data and Program Management, and Graphics and Reporting.

No paper was submitted for publication.

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Paper 123-2013

PROC DATASETS: The Swiss Army Knife of SAS® Procedures

Michael Raithel, Westat

ABSTRACT

This paper highlights many of the major capabilities of PROC DATASETS. It discusses how it can be used as a tool to update variable information in a SAS data set; provide information on data set and catalog contents; delete data sets, catalogs, and indexes; repair damaged SAS data sets; rename files; create and manage audit trails; add, delete, and modify passwords; add and delete integrity constraints; and more. The paper contains examples of the various uses of PROC DATASETS that programmers can cut and paste into their own programs as a starting point. After reading this paper, a SAS programmer will have practical knowledge of the many different facets of this important SAS procedure.

No paper was submitted for publication.

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Paper 125-2013

Essentials of the Program Data Vector (PDV): Directing the Aim to Understanding the DATA Step

Arthur Li, City of Hope

ABSTRACT

Beginning programmers often focus on learning syntax without understanding how SAS® processes data during the compilation and execution phases. SAS creates a new data set, one observation at a time, from the program data vector (PDV). Understanding how and why each automatic or user-defined variable is initialized and retained in the PDV is essential for writing an accurate program. Among these variables, some variables deserve special attention, including variables that are created in the DATA step, by using the RETAIN or the SUM statement, and via BY-group processing (FIRST.VARIABLE and LAST.VARIABLE). In this paper, you are exposed to what happens in the PDV and how these variables are retained from various applications.

No paper was submitted for publication.

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Paper 126-2013

The Magnificent DO

Paul Dorfman, Dorfman Consulting

ABSTRACT

Any high-level computer program can be written using just three fundamental constructs: Sequence, Selection, and Repetition. The latter forms the foundation of program automation, making it possible to execute a group of instructions repeatedly, modifying them from iteration to iteration. In SAS® language, explicit repetition is implemented as a stand-alone structural unit via the DO loop - a powerful construct laden with a myriad of features. Many of them still remain overshadowed by the tendency to structure code around the implied loop - even when it makes the program more complex or error-prone. We will endeavor to both straighten out some such incongruities and give the sense of depth and breadth of the magnificent SAS construct known as the DO loop.

No paper was submitted for publication.

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Paper 127-2013

Errors, Warnings, and Notes (Oh My): A Practical Guide to Debugging SAS® Programs

Susan Slaughter, Avocet Solutions
Lora Delwiche, Univeristy of California, Davis

ABSTRACT

This paper is based on the belief that debugging your programs is not only necessary, but also a good way to gain insight into how SAS® works. Once you understand why you got an error, a warning, or a note, you'll be better able to avoid problems in the future. In other words, people who are good debuggers are good programmers. This paper covers common problems including missing semicolons and character-to-numeric conversions, and the tricky problem of a DATA step that runs without suspicious messages but, nonetheless, produces the wrong results. For each problem, the message is deciphered, possible causes are listed, and how to fix the problem is explained.

No paper was submitted for publication.

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Paper 132-2013

Three Easy Ways to Create Customized SAS® Graphs

Qinghua (Kathy) Chen, Gilead sciences Inc,

ABSTRACT

We often hear people saying that "a picture is worth a thousand words". With that in mind, it basically tells us how powerful graphics can be when used properly. Ways to make graphs with great visual impact has drawn a great deal of attention from people in many fields and impactful graphics help reviewers interpret the data. SAS® has made significant improvement in graphs software over the past few years. With new features rolled out such as Output Delivery System (ODS) graphics, Graphic Template Language (GTL) and annotated data sets, creating customized graphics is as easy as creating a simple plot. This paper will describe three easy ways to create customized graphs in SAS.

No paper was submitted for publication.

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Paper 136-2013

The Armchair Quarterback: Writing SAS® Code for the Perfect Pivot (Table, That Is)

Peter Eberhardt, Fernwood Consulting Group Inc

ABSTRACT

“Can I have that in Excel?” This is a request that makes many of us shudder. Now your boss has discovered Microsoft Excel pivot tables. Unfortunately, he has not discovered how to make them. So you get to extract the data, massage the data, put the data into Excel, and then spend hours rebuilding pivot tables every time the corporate data are refreshed. In this workshop, you learn to be the armchair quarterback and build pivot tables without leaving the comfort of your SAS® environment. You learn the basics of Excel pivot tables and, through a series of exercises, how to augment basic pivot tables first in Excel, and then using SAS. No prior knowledge of Excel pivot tables is required.

No paper was submitted for publication.

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Paper 137-2013

Adding New Rows in the ADaM Basic Data Structure: When and How

Mario Widel, Roche Molecular Systems
Sandra Minjoe, Octagon Research Solutions

ABSTRACT

The ADaM (Analysis Data Model) BDS (Basic Data Structure) has specific rules to follow when adding columns or rows. Because there are limitations to what can be added as a column, much of our derived content must be added as rows.

This HOW uses a Vital Signs example, demonstrating the common BDS need of adding analysis parameters and visits. Attendees will use a general specification and mock-up to create metadata content that can be used for both a detailed specification and within a define document. The resulting content will include variable-level metadata, parameter-level metadata, and SAS® code snippets.

This is an intermediate-level HOW. Attendees are expected to be familiar with the analysis needs of clinical trials, CDISC, and submissions to FDA.

No paper was submitted for publication.

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Paper 138-2013

SAS® Enterprise Guide® 5.1: A Powerful Environment for Programmers, Too!

Marje Fecht, Prowerk Consulting
Rupinder Dhillon, Dhillon Consulting Inc

ABSTRACT

Have you been programming in SAS® for a while and just aren't sure how SAS® Enterprise Guide® can help you? This presentation demonstrates how SAS programmers can use SAS Enterprise Guide 5.1 as their primary interface to SAS, while maintaining the flexibility of writing their own customized code.

We explore:

- * navigating and customizing the SAS Enterprise Guide environment
- * using SAS Enterprise Guide to access existing programs and enhance processing
- * exploiting the enhanced development environment including syntax completion and built-in function help
- * using SAS® Code Analyzer, Report Builder, and Document Builder
- * adding Project Parameters to generalize the usability of programs and processes
- * leveraging built-in capabilities available in SAS Enterprise Guide to further enhance the information you deliver.

No paper was submitted for publication.

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Paper 139-2013

Using PROC FCMP to the Fullest: Getting Started and Doing More

Art Carpenter, CA Occidental Consultants

ABSTRACT

The FCMP procedure is used to create user-defined functions. Many users have yet to tackle this fairly new procedure, while others have attempted to use only its simplest options. As with many tools within SAS®, the true value of this procedure is appreciated only after the user has started to learn and use it. The basics can quickly be mastered, and this allows the user to move forward to explore some of the more interesting and powerful aspects of the FCMP procedure.

The use of PROC FCMP should not be limited to the advanced SAS user. Even those fairly new to SAS should be able to appreciate the value of user-defined functions.

No paper was submitted for publication.

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Paper 140-2013

How to Use ARRAYS and DO Loops: Do I DO OVER or Do I DO i?

Jennifer Waller, Georgia Health Sciences University

ABSTRACT

Do you tend to copy DATA step code over and over and change the variable name? Do you want to learn how to take those hundreds of lines of code that do the same operation and reduce them to something more efficient? Then come learn about ARRAY statements and DO loops, powerful and efficient data manipulation tools. This workshop covers when ARRAY statements and DO loops can and should be used, how to set up an ARRAY statement with and without specifying the number of array elements, and what type of DO loop is most appropriate to use within the constraints of the task you want to perform. Additionally, you will learn how to restructure your data set using ARRAY statements and DO loops.

No paper was submitted for publication.

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Paper 141-2013

Introduction to ODS Graphics

Chuck Kincaid, Experis Business Intelligence and Analytics

ABSTRACT

SAS® has a new set of graphics procedures called ODS Graphics. They are built on the Graph Template Language (GTL) in order to make the powerful GTL easily available to the user. PROC SGPLOT and PROC SGPANEL are two of the procedures that can be used to produce powerful graphics that previously required a lot of work. This upgrade is similar to the ease-of-use upgrade in output manipulation when ODS was first published. This hands-on workshop teaches you how to use PROC SGPLOT and PROC SGPANEL and the new capabilities they provide beyond the standard plot. By using these new capabilities, anyone can tell the story better.

No paper was submitted for publication.

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Paper 142-2013

A Row Is a Row Is a Row, or Is It? A Hands-On Guide to Transposing Data

Christianna Williams, Independent Consultant

ABSTRACT

Sometimes life would be easier for the busy SAS® programmer if information stored across multiple rows were all accessible in one observation, using additional columns to hold that data. Sometimes it makes more sense to turn a short, wide data set into a long, skinny one—convert columns into rows. Base SAS® provides two primary methods for converting rows into columns or vice versa: PROC TRANSPOSE and the DATA step. How do these methods work? Which is best suited to different transposition problems? The purpose of this hands-on workshop is to demonstrate various types of transpositions using the DATA step and to unpack the TRANSPOSE procedure. Afterward, you should be the office go-to gal/guy for reshaping data.

No paper was submitted for publication.

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Paper 145-2013

Know Thy Data: Techniques for Data Exploration

Andrew Kuligowski, HSN
Charu Shankar, SAS Institute Toronto

ABSTRACT

Get to know the #1 rule for data specialists: Know thy data. Is it clean? What are the keys? Is it indexed? What about missing data, outliers, and so on? Failure to understand these aspects of your data will result in a flawed report, forecast, or model. In this hands-on workshop, you learn multiple ways of looking at data and its characteristics. You learn to leverage PROC MEANS and PROC FREQ to explore your data, and how to use PROC CONTENTS and PROC DATASETS to explore attributes and determine whether indexing is a good idea. And you learn to employ powerful PROC SQL's dictionary tables to explore and even change aspects of your data.

No paper was submitted for publication.

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Paper 146-2013

Hands-On SAS® Macro Programming Tips and Techniques

Kirk Paul Lafler, Software Intelligence Corporation

ABSTRACT

The SAS® macro language is a powerful tool for extending the capabilities of SAS. This hands-on workshop presents numerous tips and tricks related to the construction of effective macros through the demonstration of a collection of proven macro language coding techniques. Attendees learn how to process statements containing macros; replace text strings with macro variables; generate SAS code using macros; manipulate macro variable values with macro functions; handle global and local variables; construct arithmetic and logical expressions; interface the macro language with the DATA step and SQL procedure; store and reuse macros; troubleshoot and debug macros; and develop efficient and portable macro language code.

No paper was submitted for publication.

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Paper 147-2013

Taking Full Advantage of sasCommunity.org: Your SAS® Site

Don Henderson, Henderson Consulting Services
Art Carpenter, CA Occidental Consultants

ABSTRACT

sasCommunity.org, a clearinghouse for technical information related to the use of SAS® software, is managed and run by SAS users; free and open to all SAS users to browse; contributed to by any SAS user once they create an ID; and built on top of the same software as Wikipedia. So if you know how to use Wikipedia, you have a head start on using sasCommunity.org.

Learn how to navigate the information contained on the site; discover the wealth of its hidden treasures; and make even small contributions to enhance the site for everyone.

Find out the number of ways you can contribute, and discover how you too can quickly make a difference in this worldwide community of SAS users.

No paper was submitted for publication.

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Paper 149-2013

So You're Still Not Using PROC REPORT. Why Not?

Ray Pass, PharmaNet/i3
Daphne Ewing, Auxilium Pharmaceuticals, Inc.

ABSTRACT

Everyone who can spell SAS® knows how to use PROC PRINT, and it certainly has its place as a simple listing generator and as a debugging aid. However, if a report generation/delivery tool with powerful formatting, summarizing, and analysis features is called for, then PROC REPORT is the solution. PROC REPORT can provide the standard PROC PRINT functionality, but in addition, it can easily perform many of the tasks that you would otherwise have to use the SORT, MEANS, FREQ, and TABULATE procedures to accomplish. PROC REPORT is part of the Base SAS® product and can run in either an interactive screen-painting mode or a batch mode. This hands-on workshop presents the basics of the batch (non-interactive) version of PROC REPORT.

No paper was submitted for publication.

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Paper 150-2013

Ready to Become Really Productive Using PROC SQL?

Sunil Gupta, Gupta Programming

ABSTRACT

Using PROC SQL, can you identify at least four ways to select and create variables, create macro variables, create or modify table structure, and change table content? Learn how to apply multiple PROC SQL programming options through task-based examples. This hands-on workshop reviews topics in table access, retrieval, structure, and content, as well as creating macro variables. References are provided for key PROC SQL books, relevant webinars and podcasts, and key SAS technical papers.

No paper was submitted for publication.

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Paper 151-2013

FREQ Out: Exploring Your Data the Old-School Way

Stephanie Thompson, Datamum

ABSTRACT

The tried-and-true FREQ procedure just doesn't get the attention it deserves. But, as they say, it is an oldie but a goodie. Sometimes you just need a quick look at your data and a few simple statistics. PROC FREQ is a great way to get an overview of your data with a limited amount of code. This hands-on workshop explores everything from the basic framework of the procedure to how to customize the output. It also presents an overview of some of the options that are available.

No paper was submitted for publication.

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Paper 506-2013

Manage Your Data as a Strategic Asset

Khaled Ghadban, Canada Post
Richard Beaver, United Natural Foods, Inc
Bill Ford, Vail Resorts

ABSTRACT

No paper was submitted for publication.

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Paper 507-2013

Searching for Business Value in Big Data with Hadoop

Mike Olson, Cloudera
Paul Kent, SAS
Gavin Day, SAS

ABSTRACT

While some well-resourced organizations can simply throw technical talent at uncovering the value in their big data, others struggle to find analytic technology that takes full advantage of the richness and scale of the Hadoop ecosystem. Join industry thought leaders from Cloudera, Intel and SAS for a discussion of how the Hadoop community is using analytics to derive critical insights that drive significant business impact from their big data assets

No paper was submitted for publication.

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Paper 508-2013

How IT Completes the Big Data Puzzle with Hadoop

Mike Olson, Cloudera

Pauline Nist, Intel

Paul Kent, SAS

Gavin Day, SAS

ABSTRACT

It's easy to become overwhelmed by the increasing volume, velocity and variety of big data – and miss the value that it holds to uncovering profitable insights and answering complex questions. So what's the missing piece to solving the big data puzzle? Hadoop. IT organizations are rapidly leveraging Hadoop to quickly derive a more complete picture and analysis of all their data. Before you can get value from your data, it has to be well organized, managed and governed. Thought leaders from Cloudera, Intel and SAS will share key insights on how IT can solve the big data puzzle with Hadoop.

No paper was submitted for publication.

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Paper 152-2013

Using SAS® to Measure Airport Connectivity: An Analysis of Airport Centrality in the US Network with SAS/IML® Studio

Hector Rodriguez-Deniz, University of Las Palmas de Gran Canaria
Pere Suau-Sanchez, Cranfield University
Augusto Voltes-Dorta, Universitat de Barcelona

ABSTRACT

The U.S. Federal Aviation Administration (FAA) estimates that \$52.2 billion will be available over the years 2011–2015 to fund airport infrastructure developments. Because one of the main objectives is to reduce congestion and delays, there is a need to acknowledge the importance of connectivity (measured with a centrality indicator) when establishing funding priorities. Currently, the FAA does not do this. In this paper, we exploit the capabilities of SAS/IML® Studio to implement a range of centrality measures, construct a graphical representation of the U.S. air transport network from airline ticketing data, test the algorithms to identify hub airports, and study the evolution of these indicators during the last decades in order to analyze the impact of airline decisions on airport connectivity.

No paper was submitted for publication.

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Paper 161-2013

Is the Legend in Your SAS/Graph® Output Still Telling the Right Story?

Alice Cheng, Chiltern Inc.
Justina Flavin, self employed

ABSTRACT

In clinical studies, researchers are often interested in the effect of treatment over time for multiple treatments or dosing groups. Usually, in a graphical report, the measurement of treatment effect is on the vertical axis and a second factor, such as time or visit, on the horizontal axis. Multiple lines are displayed in the same figure; each line represents a third factor, such as treatment or dosing group. It is critical that the line appearance (color, symbol and style) is consistent throughout the entire clinical report as well as across clinical reports from related studies.

No paper was submitted for publication.

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Paper 173-2013

Modern SAS® Programming: Using SAS® Grid Manager and SAS® Enterprise Guide® in a Global Pharmaceutical Environment

David Edwards, Amgen
Greg Nelson, ThotWave Technologies, LLC.

ABSTRACT

Amgen, like most large biotechnology companies, uses SAS® to support the drug discovery process. Equipped with a vision to fully leverage its global workforce and to maximize its IT investments, Amgen developed a research informatics infrastructure based on SAS to deliver value around the globe.

This paper will highlight many aspects of this project including business justification, requirements, design, verification and validation, and production migration for over 1500 programmers and statisticians spread across three continents. We will highlight some of the challenges we faced and how these were overcome using improved processes, modern technologies such as SAS® Grid Manager and SAS® Enterprise Guide® and the combined efforts of a global project team.

No paper was submitted for publication.

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Paper 177-2013

Using the ADaM ADAE Structure for Non-AE Data

Sandra Minjoe, Octagon Research Solutions
Mario Widel, Roche Molecular Systems

ABSTRACT

The final and official ADaM ADAE structure titled "Analysis Data Model (ADaM) Data Structure for Adverse Event Analysis" was developed as an appendix to the ADaM v2.1 to allow simple production of standard Adverse Event tables.

An ADaM sub-team is expanding this structure to cover other data analyzed in a similar fashion, such as Concomitant Medications. The basic premise is that data with the same analysis needs as the standard adverse events tables can and should use this structure.

This presentation, by members of that ADaM sub-team, describes the AE analysis need and shows to apply it for other data, such as Concomitant Medications, Medical History, and even Laboratory Events. Examples of ADaM SAS data sets, and useful SAS® program code are included.

No paper was submitted for publication.

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Paper 503-2013

To Infinity and Beyond: Current and Future State of Big Data and Analytics in Life Sciences

Matthew Becker, inVentiv Health Clinical

ABSTRACT

Our biggest asset is our data. We have all heard a semblance of these words in the Life Sciences industry. The questions many of us ask are: Are we tapping into the data as we should? Are we pulling the multiple avenues of data together with all the parameters that could be analyzed? Are we providing analytics in an educational way to our end-user(s)? In this keynote, we will look at the current state of big data in the Life Sciences industry and share a glimpse into the future of big data and analytics.

No paper was submitted for publication.

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Paper 190-2013

Managing and Monitoring Statistical Models

Nate Derby, Stakana Analytics

ABSTRACT

Managing and monitoring statistical models can present formidable challenges when you have multiple models used by a team of analysts over time. How can you efficiently ensure that you're always getting the best results from your models? In this paper, we'll first examine these challenges and how they can affect your results. We'll then look into solutions to those challenges, including lifecycle management and performance monitoring. Finally, we'll look into implementing these solutions both with an in-house approach and with SAS® Model Manager.

No paper was submitted for publication.

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Paper 210-2013

With a Trace: Making Procedural Output and ODS Output Objects Work for You

Louise Hadden, Abt Associates Inc.

ABSTRACT

The Output Delivery System (ODS) delivers what used to be printed output in many convenient forms. What most of us don't realize is that "printed output" from procedures (whether the destination is PDF, RTF, or HTML) is the result of SAS® packaging a collection of items that come out of a procedure that most people want to see in a predefined order (aka template). With tools such as ODS TRACE, PROC CONTENTS, and PROC PRINT, this paper explores the many buried treasures of procedural output and ODS output objects and demonstrates how to use these objects to get exactly the information that is needed, in exactly the format wanted.

No paper was submitted for publication.

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Paper 211-2013

Analyzing the Safewalk Program with SAS®: Saving Shelter Dogs One Walk at a Time

Louise Hadden, Abt Associates Inc.
Terri Bright, MSPCA Boston

ABSTRACT

The MSPCA in Boston initiated the Safewalk Program in January 2009. This program was designed to enrich the experience of shelter dogs by providing training to volunteers and staff that allow dogs of varied backgrounds and temperaments to be exercised safely, as well as promoting behaviors encouraging adoption on the adoption floor. A data extract from the MSPCA's Chameleon data base was analyzed using multiple SAS® procedures in SAS/STAT®. This paper will demonstrate how SAS analysis, output, and statistical graphs allowed us to assess the effects of the Safewalk Program and which populations it most affected.

No paper was submitted for publication.

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Paper 212-2013

Behind the Scenes with SAS®: Using Custom Graphics in SAS Output

Louise Hadden, Abt Associates Inc.

ABSTRACT

SAS® provides many opportunities to add customized images to SAS ODS output. This presentation will demonstrate various ways to add custom backgrounds to tabular and graphic output; add custom images to titles, footnotes, ODS text fields and tabular output; and add custom "fills" to SAS/GRAPH® maps and graphs. Some possible uses of custom images include a company logo embedded in SAS output, graphic displays of positive or negative outcomes, and watermarks containing "draft" or "confidential". The SAS code to accomplish all these potential uses, and more, will be shown.

No paper was submitted for publication.

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Paper 214-2013

Creating ZIP Code-Level Maps with SAS®

Barbara Okerson, WellPoint

ABSTRACT

SAS®, SAS/GRAPH®, and ODS graphics provide SAS programmers with the tools to create professional and colorful maps. Provided with SAS/GRAPH are boundary files for U.S. states and territories, as well as internal boundaries at the county level. While much data and results can be displayed at this level, often a higher degree of granularity is needed. The U.S. Census Bureau provides ZIP code boundary files in ESRI shape file format (.shp) by state for free download and import into SAS using SAS PROC DATAIMPORT. This paper illustrates the use of these ZIP code tabulation area (ZCTA) files with SAS to map data at a ZIP code level. Example maps include choropleth, distance, and heat maps.

No paper was submitted for publication.

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Paper 248-2013

SAS® ODS Graphics Designer - The Next Step in Amazing Data Visualization

Christopher Battiston, Hospital For Sick Children

ABSTRACT

Admit it. You are swamped, overwhelmed, and desperate to find more efficient ways of doing things. But who has the time to learn something new? This poster won't be able to help for the majority of these issues. It will help you become a more effective and efficient data visualization expert, freeing up at least enough of your time to get a sandwich (and maybe even eat it). SAS® ODS Graphics Designer is highlighted, showing various examples with a generic step-by-step approach. Not as basic as Graph-N-Go and not nearly as complex as SAS® Enterprise Guide®, ODS Graphics Designer is a tool that appeals to both novice and expert users.

No paper was submitted for publication.

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Paper 373-2013

Visual Techniques for Problem Solving and Debugging

Andrew Ratcliffe, RTSL.eu

ABSTRACT

No matter how well we plan, issues and bugs inevitably occur. Some are easily solved, but others are far more difficult and complex. This paper presents a range of largely visual techniques for understanding, investigating, solving, and monitoring your most difficult problems. Whether you have an intractable SAS® coding bug or a repeatedly failing SAS server, this paper offers practical advice and concrete steps to get you to the bottom of the problem. Tools and techniques discussed in this paper include Ishikawa (fishbone) diagrams, sequence diagrams, tabular matrices, and mind maps.

No paper was submitted for publication.

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Paper 383-2013

Who Said Change Was Easy

Scott Sanders, Sears
Allan Beaver, Soebeys
Margaret Pelan, Hudson Bay Company
Marty Anderson, Belk

ABSTRACT

In the modern business environment, organizations face rapid change like never before. Due to the growth of technology, modern organizational change is largely motivated by exterior innovations rather than internal moves. When these developments occur, the organizations that adapt quickest create a competitive advantage for themselves, while the companies that refuse to change get left behind. Hear how 3 companies have dealt with Change management and the lessons learned!

No paper was submitted for publication.

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Paper 385-2013

Revenue Optimization: How Do You Price?

Brenda Carr, Hudson's Bay Company Canada

ABSTRACT

Hudson's Bay Company, Markdown Optimization – Our Implementation and Roll-Out Experience, a case study. To further optimize our markdown spend and benefit from markdown optimization at a style/store level, HBC upgraded to SAS® Markdown Optimization 4.3. Selling at full price longer where we can, while still ensuring we achieve our overall seasonal sell through target allows HBC to fully maximize their markdown spend and reap the benefits of increased sales and gross margin in better trending stores.

In this session, you will hear about the path HBC took to roll out this top initiative, how we gained top-down support of the process, and how we interacted with our business partners to make this tool one that could be utilized by all areas.

No paper was submitted for publication.

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Paper 388-2013

Sobeys and SAS - How Do You Talk to Your Customer?

Ashok Setty, Sobeys Inc.
Wanda Shive, SAS

ABSTRACT

For years, retailers have struggled with measuring the effectiveness of their promotional advertising efforts. Harnessing the “big data” within their customer and transaction files continues to be a major challenge. Approaches for gleaning actionable customer insights from that data are becoming more common. Measuring total shopping behavior in conjunction with specific promotion offers provides a better understanding of the overall impact on profitability. This paper describes how retailers are utilizing customer analytics to measure the effect that mass promotions have on the total basket spend of customers and to identify the most relevant offers for each individual customer.

No paper was submitted for publication.

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Paper 390-2013

Roundtable Discussion: SAS® Integrated Merchandise Planning

Amy Clouse, Dick's Sporting Goods

ABSTRACT

This session is designed to be a general discussion with the SRUG membership on the SAS® Integrated Merchandise Planning Solution. We will provide an opportunity to ask questions and learn how your peers are gaining the most value from this SAS® solution.

No paper was submitted for publication.

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Paper 392-2013

Location Planning: A Look into Location Planning - Best Practices for Resolving

Ann Ferguson, SAS Institute

ABSTRACT

Location planning is a struggle to balance the trends of the merchandise and stores while meeting the financial objectives of the company. The Store Planner, plans the sales forecast and sales growth for the each and every category available in the store or location. The number of stores in most retail organizations is typically large and developing the store level plans is a voluminous task. This panel discussion features recent retail trends and efforts to maximize profits and drive improvements. Hear how these retailers are using SAS and innovative methods and tools to develop plans tailored for merchandise and location trends.

No paper was submitted for publication.

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Paper 393-2013

Implementing Assortment Planning and the challenge of User Adoption

Ann Ferguson, SAS Institute

ABSTRACT

Merchandise Assortment planning plays a pivotal role in creating and maintaining profitability. No other area within a retail business has such a direct impact on bottom line profit (or loss). It is, therefore, crucial that merchandisers have a broad understanding of the best practice approaches that have evolved and continue to evolve in order that they are able to optimize the financial return on the investment that is under their control.

No paper was submitted for publication.

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Paper 394-2013

Reclass: What Does It Mean to You!

Amy Clouse, Dick's Sporting Goods

ABSTRACT

Reclass: What does it mean to you! Reclass can be a daunting task to take on in your organization. This session will focus on best practices for preparation and execution, compiled from several SAS® customers.

No paper was submitted for publication.

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Paper 395-2013

Forecasting to Support Planning

Julie Rankin, Belk

ABSTRACT

Strength in Numbers: Using Demand Forecasting to Drive Merchandise and Store Performance
Hear how these retailers are using SAS Demand Forecasting for Retail to strengthen their numbers through advanced retail management from the SAS forecast engine in their planning processes. With broad assortment and locations, diverse consumer behavior and price fluctuations, predicting demand and performance can be quite a challenge in the pre-season and in-season planning processes. These retailers are using analytics to drive results and supplement the art of the merchant expertise to generate efficiencies via a scientific approach to forecasting demand. Forecast results drive better business decisions, improved planning processes and forecast accuracy. The user experiences reflect streamlined processes, improved productivity and better demand patterns.

No paper was submitted for publication.

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Paper 405-2013

The Concepts and Practice of Analysis with SAS® Enterprise Guide®

Chris Schacherer, Clinical Data Management Systems, LLC

ABSTRACT

Due in part to its success helping SAS® programmers leverage their development skills against the challenges of creating analytic solutions in a new environment, SAS® Enterprise Guide® continues to gain acceptance as an enterprise solution for reporting and analytic applications. For organizations to realize maximum benefit from their investment in SAS Enterprise Guide, subject-matter experts and a new generation of "SAS naive" analysts also need to be trained in the use of this tool. The current work provides a framework for this training by explaining the relationship between SAS Enterprise Guide and traditional SAS programming, introducing the basic SAS Enterprise Guide concepts necessary to function in this environment, and presenting examples of common tasks that will help these users become immediately productive.

No paper was submitted for publication.

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Paper 407-2013

Statistical Analyses Using SAS® Enterprise Guide®

Scott Leslie, MedImpact Healthcare Systems, Inc.

ABSTRACT

Conducting statistical analyses involves choosing proper methods, understanding model assumptions and displaying clear results. The latest releases of SAS® Enterprise Guide® offer conveniences, such as point-and-click wizards and integrated syntax help, to ease the burden on users. This tutorial demonstrates how to perform statistics quickly and easily using some handy features of SAS Enterprise Guide. Examples of multiple linear regression, logistic regression, and survival analysis are covered as well as some hints on how to navigate SAS Enterprise Guide menus. This tutorial is intended for SAS® users with beginning to intermediate experience with the above-mentioned statistics or those with little SAS Enterprise Guide experience.

No paper was submitted for publication.

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Paper 416-2013

SAS® Enterprise Guide®, Best of Both Worlds: Is it Right for You?

Sunil Gupta, Gupta Programming

ABSTRACT

Whether you are new to SAS® or a seasoned SAS Programmer, you still face the same dilemma. Does SAS® Enterprise Guide® represent the best of both worlds to make the transition to SAS easier with a point-n-click interface or enhance your productivity with over 90 tasks? Do you follow the same traditional path taken by millions who learned SAS many decades ago or do you take the yellow brick road to directly analyze your data? This presentation explores the vast differences between these two cultures and how they impact your programming environment. While there are numerous benefits to using SAS Enterprise Guide, there are also some caveats to keep in mind to make the transition smoother.

No paper was submitted for publication.

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Paper 422-2013

Being Continuously Discrete (or Discretely Continuous): Understanding Models with Continuous and Discrete Predictors and Testing Associated Hypotheses

David Pasta, ICON Late Phase & Outcomes Research

ABSTRACT

Often a general (or generalized) linear model has both discrete predictors (included in the CLASS statement) and continuous predictors. Binary variables can be treated either as continuous or discrete; the resulting models are equivalent but the interpretation of parameters differs. In many cases, interactions between discrete and continuous variables are of interest. This paper provides practical suggestions for building and interpreting models with both continuous and discrete predictors. It includes some examples of the use of the STORE statement and PROC PLM to understand models and test hypotheses without repeating the estimation step.

No paper was submitted for publication.

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Paper 430-2013

Chi-Square and t-Tests Using SAS®: Performance and Interpretation

Jennifer Waller, Georgia Health Sciences University
Maribeth Johnson, Georgia Health Sciences University

ABSTRACT

Data analysis begins with data cleanup, calculation of descriptive statistics, and the examination of variable distributions. Before more rigorous statistical analysis begins, many statisticians perform basic inferential statistical tests such as chi-square and t tests to assess unadjusted associations. These tests help guide the direction of the more rigorous analysis. This paper uses example data to show how to perform chi-square and t tests, how to interpret the output, where to look for the association or difference based on the hypothesis being tested, and which next steps can be proposed for further analysis.

No paper was submitted for publication.

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Paper 431-2013

Assessing Model Adequacy in Proportional Hazards Regression

Michael G. Wilson, Biostatistical Communications, Inc.

ABSTRACT

Proportional hazards regression has become an exceedingly popular procedure for conducting analysis on right-censored, time-to-event data. A powerful, numerically stable, easily generalizable model can result from careful development of the candidate model, assessment of model adequacy, and final validation. Model adequacy focuses on overall fitness, validity of the linearity assumption, inclusion (or exclusion) of a correct (or an incorrect) covariate, and identification of outlier and highly influential observations. Due to the presence of censored data and the use of the partial maximum likelihood function, diagnostics to assess these elements in proportional hazards regression compared to most modeling exercises can be slightly more complicated. In this paper, graphical and analytical methods using a rich supply of distinctive residuals to address these model adequacy challenges are compared.

No paper was submitted for publication.

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Paper 435-2013

Joint Modeling of Mixed Outcomes in Health Services Research

Joseph Gardiner, Michigan State University

ABSTRACT

Outcomes with different attributes, of continuous, count, and categorical types, are often encountered jointly in many settings. For example, two widely used measures of healthcare utilization, length of stay (LOS) and cost, can be analyzed jointly with LOS as a count and cost as continuous. Occurrence of an adverse event (binary) would impact both outcomes. For fitting marginal distributions and assessing the impact of explanatory variables on outcome, SAS offers a number of procedures. Correlation and clustering are additional features of these outcomes that must be addressed in analyses. This paper surveys the GLIMMIX, COPULA, PHREG, and QLIM procedures, which can be applied to modeling multivariate outcomes of mixed types. Examples from the literature are used to demonstrate the application of these procedures.

No paper was submitted for publication.

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Paper 447-2013

Segmentation and Classification Analysis Using SAS®

Rachel Poulsen, TiVo

ABSTRACT

An idiom in the customer service industry is “the customer is always right”. However, in many instances the customer will not speak up and another popular idiom must be used “Actions speak louder than words”. Customer actions can be measured to infer what they will not say. Once measured, segmentation analysis can be used to make sense of the large amount of behavioral data by placing customers into various segments. Classification models are then used to assign new customers to a segment. Statistical algorithms used to segment and classify observations include Collaborative Filtering and Machine Learning Models. This paper will illustrate how SAS® can be used to segment and classify observations using the FASTCLUS and DISCRIM procedures.

No paper was submitted for publication.

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Paper 449-2013

Considerations and Techniques for Analyzing Domains of Complex Survey Data

Taylor Lewis, U.S. Office of Personnel Management

ABSTRACT

Despite sounding like a straightforward task, making inferences on a domain, or subset, of a complex survey data set is something that is often done incorrectly. After briefly discussing the features constituting complex survey data, this paper explains the risks behind simply filtering the full data set for cases in the domain of interest prior to running a SAS/STAT® survey procedure such as PROC SURVEYMEANS or PROC SURVEYREG. Instead, it shows how one should use the DOMAIN statement or create a domain-specific analysis weight. Also discussed in detail are considerations and approaches to the very common objective of testing whether the difference between two domain means is statistically significant.

No paper was submitted for publication.

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Paper 458-2013

Nontemporal ARIMA Models in Statistical Research

David Corliss, Magnify Analytic Solutions

ABSTRACT

Mathematical models employing an autoregressive integrated moving average (ARIMA) have found very wide applications following work by Box and Jenkins in 1970, especially in time series analysis. ARIMA models have been very successful in financial forecasting, forming the basis of such things as predicting how much gas prices will rise. However, no mathematical requirement exists requiring the data to be a time series: only the use of equally spaced intervals for the independent variable is necessary. This can be done by binning data into standard ranges, such as income by \$10,000 intervals. This paper reviews the fundamental statistical concepts of ARIMA models and applications of non-temporal ARIMA models in statistical research. Examples and applications are given in biostatistics, meteorology, and econometrics as well as astrostatistics.

No paper was submitted for publication.

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Paper 492-2013

The Value of Neighborhood Information in Prospect Selection Models: Investigating the Optimal Level of Granularity

Philippe Baecke, Vlerick Business School
Dirk Van den Poel, Ghent University

ABSTRACT

Within analytical customer relationship management (CRM), customer acquisition models suffer the most from a lack of data quality because the information of potential customers is mostly limited to socio-demographic and lifestyle variables obtained from external data vendors. Particularly in this situation, taking advantage of the spatial correlation between customers can improve the predictive performance of these models. This study compares the predictive performance of an autoregressive and hierarchical technique in an application that identifies potential new customers for 25 products and brands. In addition, this study shows that the predictive improvement can vary significantly depending on the granularity level on which the neighborhoods are composed. Therefore, a model is introduced that simultaneously incorporates multiple levels of granularity resulting in even more accurate predictions.

No paper was submitted for publication.

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Paper 501-2013

Finding the Gold in Your Data: An Overview of Data Mining

David Dickey, NC State University

ABSTRACT

"Data mining" has appeared often recently in analytic literature and even in popular literature, so what exactly is data mining and what does SAS® provide in terms of data mining capabilities? The answer is that data mining is a collection of tools designed to discover useful structure in large data sets. With an emphasis on examples, this talk gives an overview of methods available in SAS® Enterprise Miner™ and should be accessible to a general audience. Topics include predictive modeling, decision trees, association analysis, incorporation of profits, and neural networks. We'll see that some basic ideas underlying these techniques are related to standard statistical techniques that have been around for some time but now have been automated to become more user friendly.

No paper was submitted for publication.

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Paper 502-2013

What Is Business Analytics?

J. Michael Hardin, University of Alabama

ABSTRACT

Analytics has become the hot, “sexy” job of the new century. The demand for individuals with skills and expertise in the area are in great demand, with feature articles appearing in publications ranging from The New York Times to The Harvard Business Review to The Wall Street Journal. However, the area has not always been so well received, especially within some academic areas. And, even today there still remains confusion and disagreements over the implementation and interpretation of results obtained from the “analytic process.”

This presentation will examine the history, development, and particularly the philosophy underlying the analytic process. Insights will be provided as to theories to understanding and interpreting the analysis process and the associated results.

No paper was submitted for publication.

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Paper 466-2013

SAS Visual Analytics (SASVA) and SAS High-Performance Analytics Server (SASHPAS) - Network Considerations and Data Management/Governance

Nicholson (Nick) Warman, Hewlett-Packard (onsite @ SAS)

ABSTRACT

SAS Visual Analytics (SASVA) and SAS High-Performance Analytics Server (SASHPAS) are an entirely new approach to information analysis and management. With these products come data network challenges/issues and data provisioning/strategy issues. This paper begins that focused dialogue based on over 20 years of experience with SAS and as the engineer responsible for the world-wide configurations used by the HP(TM) sales force, one of only two companies authorized to sell hardware to support SASVA/SASHPAS.

No paper was submitted for publication.

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Paper 472-2013

Configure Your Foundation SAS® Client Easily and without Risk

Peter Crawford, Crawford Software Consultancy Limited

ABSTRACT

For your client install of Base SAS®, don't use the default provided. Instead, use the simple features in this paper and presentation to support the flexibility you want. This method of applying options as SAS starts, eliminates risky techniques of the past when developers would update the configuration file provided by SAS. The technique is described and demonstrated with examples for the Microsoft Windows environment for Base SAS, but the issues are very similar if launching SAS clients and servers on UNIX (including UNIX on z/OS). There is a small overhead with this proposal, but if you review the paper, I'm sure you will consider it worthy enough to give it a try.

No paper was submitted for publication.

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Paper 473-2013

SAS Administration: The State of the Art (Panel Discussion)

Greg Nelson, ThotWave Technologies, LLC.
Michael Raithel, Westat
Paul Homes, Metacoda
Jennifer Parks, CSC Inc

ABSTRACT

The implementation of SAS can take on many forms in organizations around the globe - from single-server SAS Foundation installs to multi-tenant SAS solutions. Similarly the role of the SAS administrator has evolved significantly - especially since the introduction of SAS 9.

Join us for this panel discussion for an in-depth conversation on SAS Administration.

Topics covered will include:

- * SAS administrator roles and responsibilities
- * Best practices in data management, governance, architecture and business process integration
- * Adoption of new technologies including upgrades and maintenance
- * Backup, Recovery, Disaster Recovery
- * Multi-tenant architectures
- * Optimizing SAS.

Panelists will include experts in capacity planning, SAS metadata, security, optimizing operating environments, system design and architecture. Panelists will include personnel from SAS, system integrators and various industry organizations.

No paper was submitted for publication.

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Paper 478-2013

SAS® Enterprise Business Intelligence Deployment Projects in the Federal Sector: Best Practices

Jennifer Parks, CSC Inc

ABSTRACT

Systems engineering life cycles (SELC) in the federal sector embody a high level of complexity due to legislative mandates, agency policies, and contract specifications layered over industry best practices, all of which must be taken into consideration when designing and deploying a system release. Additional complexity stems from the unique nature of ad-hoc predictive analytic systems that are at odds with traditional, unidirectional federal production software deployments to which many federal sector project managers have grown accustomed. This paper offers a high-level roadmap for successful SAS® EBI design and deployment projects within the federal sector. It's addressed primarily to project managers and SAS administrators engaged in the SELC process for a SAS EBI system release.

No paper was submitted for publication.

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Paper 480-2013

eBay Quadruples Processing Speed with SAS® In-Database Analytics for Teradata

John Scheibmeir, eBay

ABSTRACT

Working efficiently with HUGE data sets consisting of millions of rows and hundreds of columns summing up to gigabytes of storage is a challenge that many users and organizations face today. In addition to processing large amounts of data, additional constraints include end-to-end processing time, implications of transfer of processing to the database, storage space, system resources, data transfer, etc. Utilizing SAS® in-database processing on eBay's Teradata based Singularity Platform has reduced end-to-end processing time by a factor of 4 at eBay Inc. This improvement in overall throughput and has allowed eBay Inc in ~30% additional processing capacity, and thereby enabled evaluating more experiments.

No paper was submitted for publication.

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Paper 486-2013

Best Practices for Deploying SAS® on Red Hat Enterprise Linux

TB D, Global Forum

ABSTRACT

The number of SAS deployments on Red Hat Enterprise Linux (RHEL) continues to increase in recent years because more and more customers have found RHEL to be the best price/performance choice for new and/or updated SAS deployments on x86 systems.

Back for the third year at SGF, Shak and Barry will share new performance findings and best practices for deploying SAS on Red Hat Enterprise Linux and will discuss topics such as virtualization, GFS2 shared file system, SAS Grid Manager and more. This session will be beneficial for SAS customers interested in deploying on Red Hat Enterprise Linux, or existing SAS-on-RHEL customers who want to get more out of their deployments.

No paper was submitted for publication.

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