Paper 145

# An Introduction to SAS/ASSIST[7] Software
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INTRODUCTION

SAS/ASSIST software is a user-friendly front-end to the SAS System. Its Apush-button@ menus provide options for many of the tasks you would want to perform. Selections are made and acted upon without the user having to write any SAS code. Programs can be saved that will be run repetitively. The SAS/ASSIST interface can be customized to better suit the needs of the user and the environment of the work to be accomplished.

ASSIST is designed to be self-explanatory; however, some hands-on experience can be a helpful training aid for the novice user.

SAS/ASSIST can be invoked by typing **assist** on the command line or by selecting **Solutions** and **ASSIST** from the pull-down or pop-up menus (or from the SAS Environment window). We will start with the Block Menu Startup Mode.
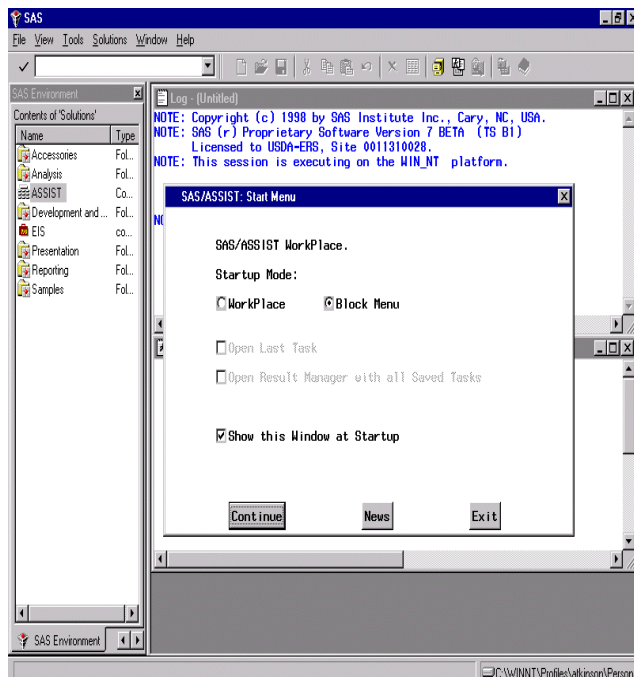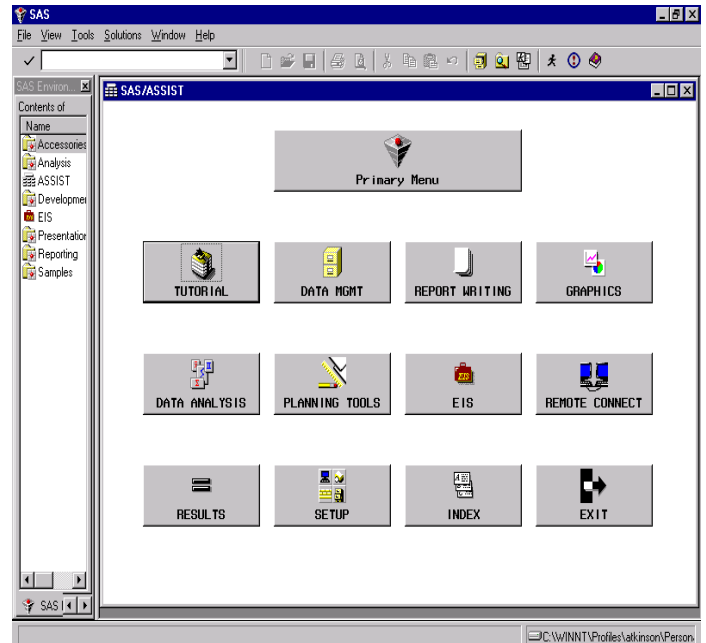

The default Primary Menu will appear.

SETUP

Beginning with Release 6.12 of the SAS System, SAS/ASSIST no longer automatically creates sample data sets when you invoke it. To have these available requires a one-time step. Click on the **SETUP** button on the Main Menu. Next choose **Sample tables**…under File management: and **Create sample tables**… Click on the box to the left of each of the data sets to select them all, then click on the **OK** button. After the sample data sets are created click on **GOBACK** three times to return to the Primary Menu.

DATA MANAGEMENT

One of the first things you might want to do in the SAS System is browse or edit a set of data. Click on the **DATA MGMT** button in ASSIST. A wide range of tasks can be specified from the following menu, including doing SQL queries on the data, importing data from other formats, creating subsets, and so on. Some of the options require specific SAS products to be licensed in order to be enabled, such as SAS/FSP[7] to do full-screen browsing or editing of SAS data sets and SAS/ACCESS[7] to access external database files. An INDEX button can help you get to a specific task easily if you are unsure as

to which path would get you to it, and a HELP button is provided as standard on most ASSIST screens.
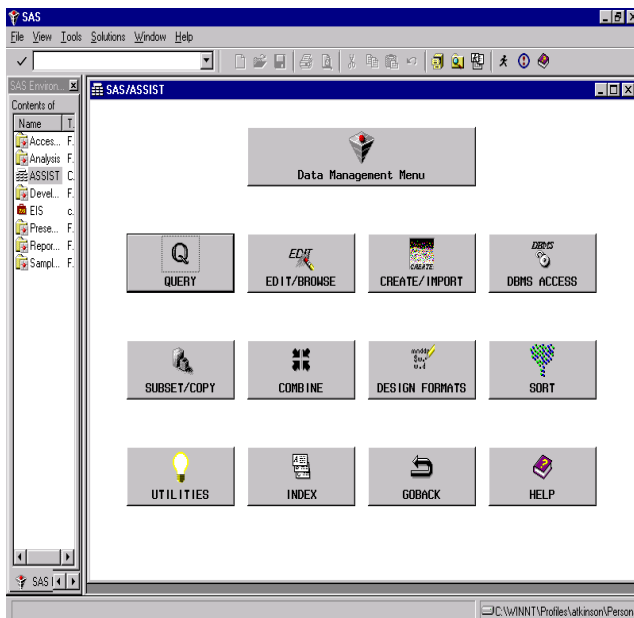
Click on **EDIT/BROWSE**, **Edit data** and **Tabular format** to view the data as a table where the rows are observations and the columns are variables. Select **Table:** and from the choices that are presented, use **SASUSER.ORANGES**, which is distributed with SAS/ASSIST.
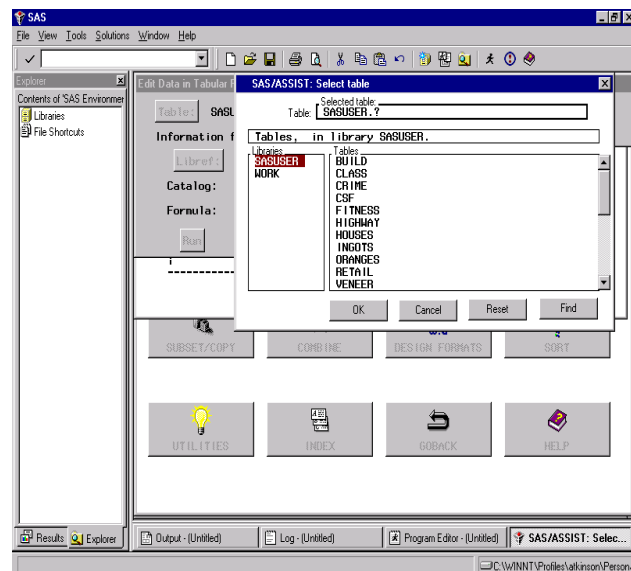

Then click on the **RUN** button. The screen which appears shows the data, which you can scroll around in and make changes to.

Note that if you use the arrow keys on the keyboard

to move to a data value, you must press **Enter** or click on the line for that observation with the mouse to select it before you can make any changes to the data. This is because the AUpdate Mode@ is initially set to record-locking, to prevent you from accidentally editing the wrong observation. To switch to member-locking, which allows you to edit a record without selecting it first, click on **Edit** from the pull-down menu, select **Update** and then change the Update Mode to **member** and click on **OK**. You can then make changes to the data by scrolling around with the arrow keys.

Sometimes it may be more convenient to edit one observation at a time. Select **File** and **Close** to exit from the tabular display editor, and **Goback**, then select **Single row** and **Run**.
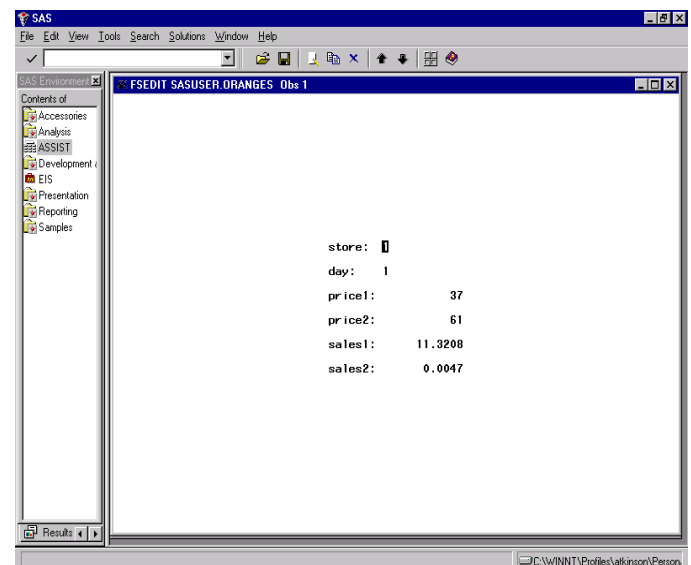

Make changes to the data by moving the cursor to the data value you want to edit and typing the appropriate new value. Scroll through the data set by selecting **View** from the pull-down menu, then either **Next observation**, **Previous observation**, or **Go to observation number**. You can also use the **Page Up** and **Page Down** keys.

Browsing a data set would look similar on the screen, with a choice of either tabular or single-observation display. The only difference is that changes could not be made to the data.

To create a new variable, you must store the data in a new data set. Use **File**, **Close** and then **Goback** (three times) to get to the Data Management menu, and select **SUBSET/COPY**.
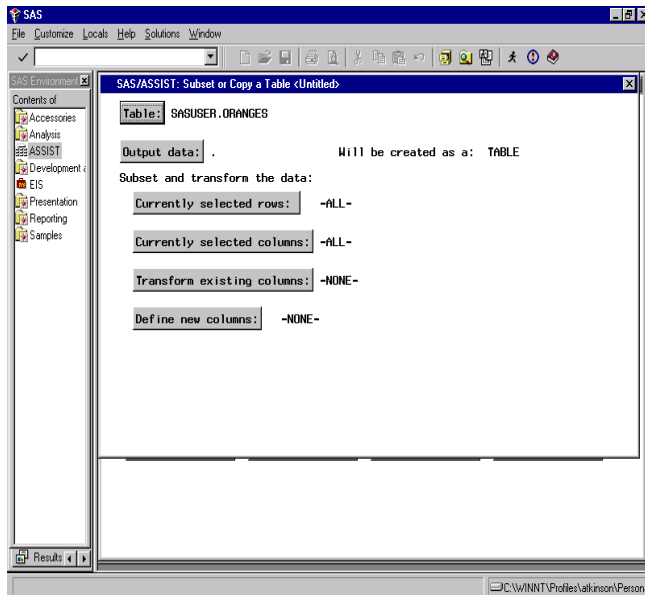
Click on **Output data** to give a new name to the data set you will be creating, and type **neworng** for the **Data set/View** name. Select **OK** at the bottom of the screen, then **Define new columns** from the next screen. This gets you to a window labeled Define or Modify a Column. Type **totsales** for the Column name, and **Total sales** as a label. Click on **Initialize** to indicate how the new column will be defined.
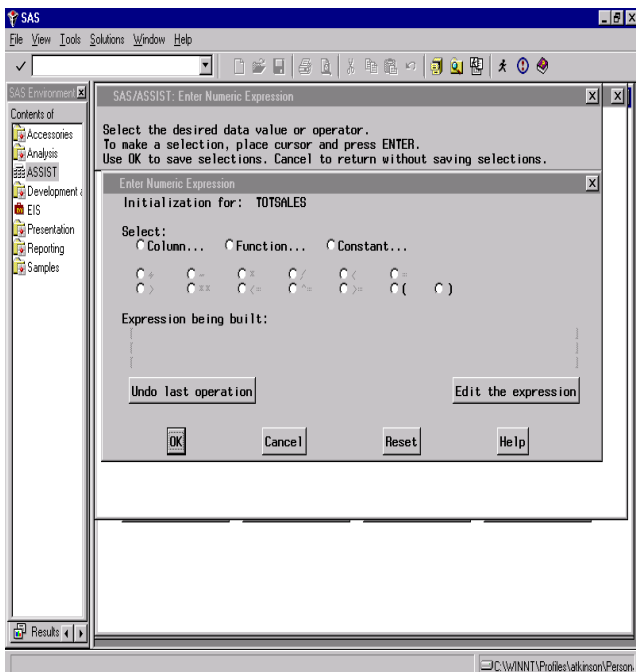

Click on the Aradio button@ by Column to choose the first variable for the expression which will calculate totsales. Highlight **sales1** from the data set and click

on the arrow pointing right so that it is selected. Click on the radio button for the addition operator (**+**), then Column again and choose **sales2**. Click on **OK** three times, then select **Run** from the pull-down menu, and **Submit**. The new data set will be created from the existing one with the addition of the new, computed variable. You will be given the opportunity to view the results (specifically, PROC FSVIEW in browse mode). Scroll to the right to see the new variable.

Being in browse mode, you cannot make changes to the data here, but could go into edit to do so. Select **File**, **Close** twice and then **Goback** to return to the Primary Menu.

With a small data set, you might want to generate a simple listing. Choose **REPORT WRITING** and **LISTING**, then click on **Table:** and scroll down to **WORK.NEWORNG** and select it if it is not already selected.
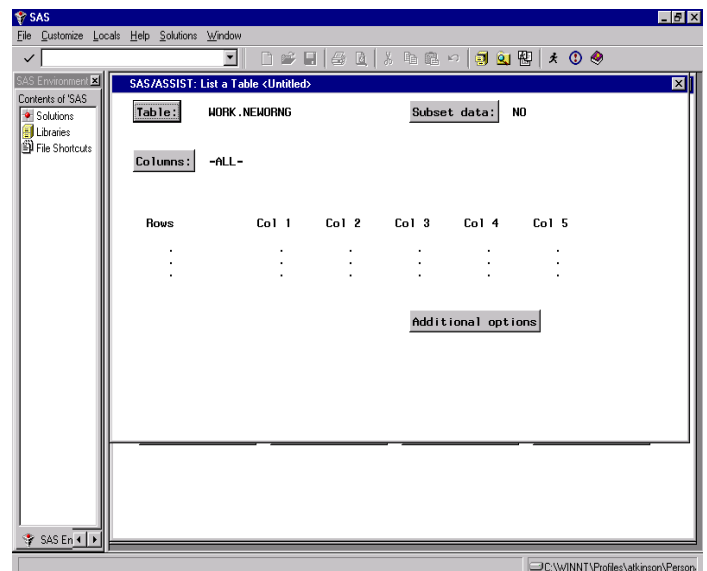
Click on **Additional options** to see what specifications are available there. If you click on the box to the left of **Print row number**, a check mark will appear to indicate that option has been turned on. Click on **OK** and then use the **Run** pull-down and **Submit** to generate the listing. **File** and **Close** returns you to ASSIST. Doing **File** and **Close** again returns you to the Report Writing Menu.

More detailed tabulations can be produced by using the **Tables** option. For example, click on **Simple Group 2**. Click on **Columns** to choose the variables to appear in the table; move **Price1**, **Price2**, **Sales1**, and **Sales2 to the Selected column**, and then click

on **OK**. Click on **Statistic** and choose **Mean** to compute averages of these variables, then **OK**. Click on **Class** and select **Store** to use as a classification variable, then **OK**.

Use the **Run** pull-down menu and **Submit** to see the display that is produced. Use the **File** and **Close** menus to return to ASSIST.

SAVING RESULTS

If you have a task you wish to run repetitively, such as creating this table whenever the data are updated, you may save the selections made. Use the **File** pulldown, and **Save as**. Give a name to this task (of up to seven characters, beginning with a letter or underscore) and a description.
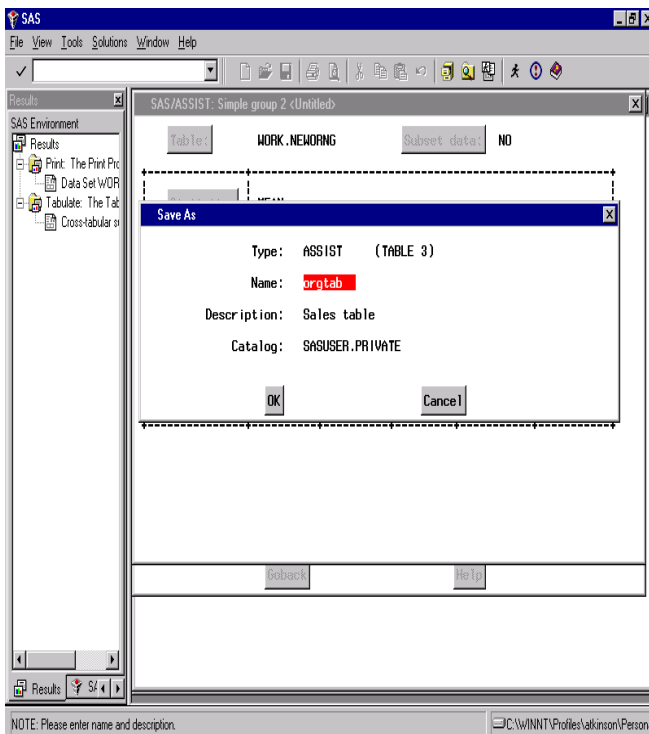
To access saved tasks, use the **File** pull-down again and **Open**. Place an **s** on the Cmd line to select the task you wish to use. Then you can make changes if desired and use **Run** and **Submit** to rerun the task.

You can also view the source code used to run a task, rather than just the window selections. From the main menu (which you can get to by using **File** and then **Primary Menu)**, click on the **Results** button and then select **Result Manager**. Other things you can do with the saved program include editing it (with an **e** on the line by its name) or browsing it (**b**), which can be a way of learning SAS

coding. An **x** will cause the program to execute.
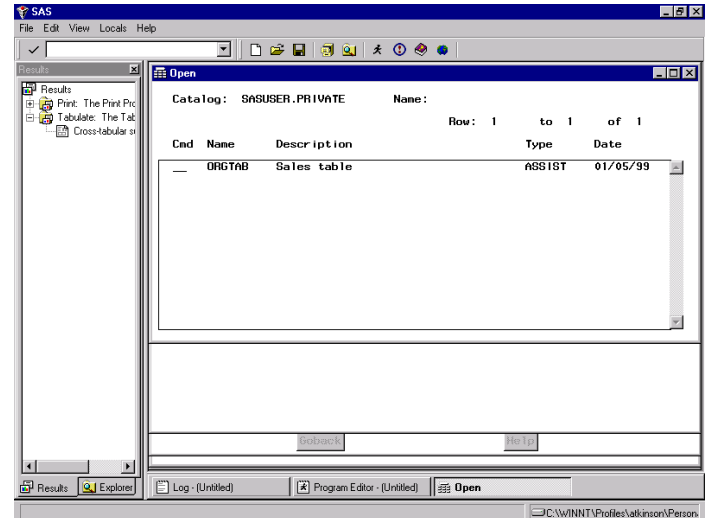
GRAPHICAL DISPLAYS

Next we will look at generating some graphics displays of the data. From the Primary Menu, click on the **GRAPHICS** button, then **BAR CHARTS**. Click on **Chart column:** and from the list of the variables in the data set select **Day**. Click on **Bar values:** and for Statistic to be charted click on the Αradio button@ by **Mean**. Click on **Analysis column:** and select **TOTSALES** and then **OK**. The task is completely specified and **Run** and **Submit** from the pull-down menu will cause the graph to be produced.
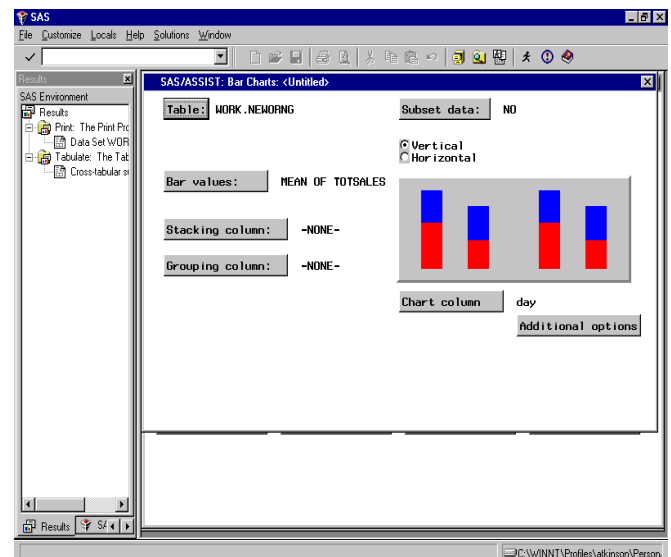
Close the graph window (**File**, **Close**) and save this task specification by using **File** and **Save as** and choosing a new name and description, such as

orgsale and **Oranges chart**, respectively.

We will look at how easy it is to specify other types of graphics. Use **File**, **Close** to return to the graphics menu. Choose **PLOTS** and **Simple X*Y plot...**. Click on **Table:** and from the list that shows up choose **SASUSER.RETAIL**. For the **Vertical axis:** use the **SALES** variable and for the **Horizontal axis:** select **DATE**. Use **Run** and **Submit** to view the graph.

Mapping is also easy with the use of SAS/ASSIST. Go back to the graphics menu and choose **Maps**. Click on **Map:** and then the radio button by **Asia**, then click on the **Country** button, to select **Japan**. For **Area identifier:** use the variable **ID**. Use **Run** and **Submit** to get a basic choropleth map of the prefectures in Japan. We will now look at how to incorporate data values onto the map.

First, we will get some experience in bringing data in from an Excel spreadsheet. Go back to the Primary Menu and select **DATA MGMT** again, then **Create/Import** and **Import data…** . For data source select **Excel 97 Spreadsheet**, then click on the **Next** button. For "Where is the file located?" use the **Browse** button to find **a:onions.xls**. For the SAS destination, give the name **ondata** as the member in library **work**, then click on the **Finish** button. The spreadsheet will be read into SAS, and you can click on the **Goback** button and go into **Edit/Browse** to take a look at it.

Next display ranges of the data values on the map of Japan. From the Primary Menu, select **Graphics**, then **Maps**, **Asia** for **Area** and **Japan** for **Country**. On the next screen click on **Response table:** and choose **work.ondata** from the choices that appear. For **Column to map:** choose **Production**. For **Area Identifier** use **ID**. Click on **Number of Levels:** and then click on the radio button to the left of **Enter number of levels**, then type **2** in the field for number of levels and click on **Goback**. Click on the **Run, Submit** pull-downs to display the map, showing the areas of higher and lower onion production. If you would like to specify the colors used in the map, click on **Additional options** and **Pattern options**, and type in color names in the appropriate fields for the first two patterns. Use the **Edit, Titles** pull-downs to define a title, such as **Onion Production in Japan**.

DATA ANALYSIS

We will now look at some of the analytic capabilities available through the SAS/ASSIST interface. Return to the Primary Menu and click on **DATA ANALYSIS**. A variety of analyses can be specified, from basic descriptive statistics through regression and time series analysis.

Click on **ELEMENTARY** and **Summary statistics...** . For **Table:** use **SASUSER.FITNESS**. Click on **Columns:** and select **Age**, **Weight**, **Runtime**, and **Maxpulse**, then click on the **OK** box. For **Class:** select **Group**. Then choose descriptive statistics, such as **Minimum**, **Maximum**, and **Mean**. Use the **Run** pulldown and **Submit** to perform the analysis. You will be placed in the Output window to view the results. Use **File**, **Close** to close this, then **File**, **Save as**. In the field for **Name:** type **Fitstat** and for **Description:** something like **Fitness stats**, then click on **OK**. Use **File**, **End** and **Goback** to return to the Data Analysis menu.

We will also specify a regression analysis. Click on the **REGRESSION** button, then **Linear regression...**. For **Dependent:** select **RUNTIME** as the dependent variable for the model, and for **Independent:** select variables such as **AGE**, **WEIGHT**, **MAXPULSE**, and **OXYGEN**.

Use the **Run** pulldown and **Submit** to estimate this regression equation. After viewing the results, you can easily add or delete variables and run the model again. Then return to the Primary Menu (**File**, **Close** and then **File**, **Primary Menu**).

CUSTOMIZATION

There are several ways in which you can customize the SAS/ASSIST environment to suit your work. If you prefer to have buttons at the bottom of the screen for **RUN** and other functions, you can request an old menu style that was provided when SAS/ASSIST was first developed. Click on **SETUP** and then under **Profiles:** click on **User...** . By **Menu style** type **Old** over **New**. Use **File**, **Close** and **Goback**. If you look at one of the menu screens now, such as the one for specifying a Linear regression, you will now have a row of buttons at the bottom of the screen for running a specified task and other operations.

You can also develop your own menu to be used

instead of the default Primary Menu. From **SETUP**, select **Profiles:**, **User...** and over the field for **Type:** enter **PRIVATE MENU** and press the **Enter** key. In the field for **Use private menu** type **Yes**. There are other options you can set as to what you would like to have appear on the private menu, such as a link back to ASSIST=s Primary Menu. Use **File**, **End** to close this, and **Goback**, then click on the **EXIT** button. You will be placed in your own Private Menu with your saved applications on buttons that can be selected, and standard features on buttons at the bottom of the menu. You can always get to the full capabilities of SAS/ASSIST by using the button for its Primary Menu. If at any time you want to enter directly into the standard menu rather than your own, you can type **assist logon=no** on the command bar. Alternatively, you can edit your user profile to not use the Private Menu.
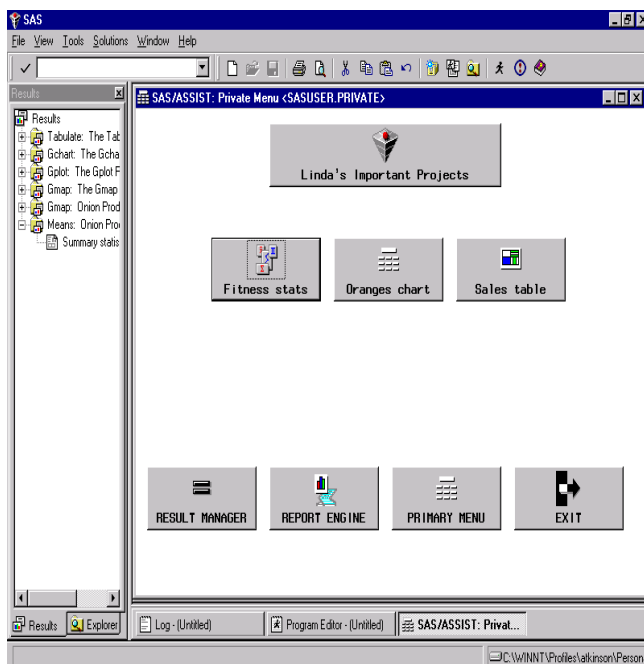
CONCLUSION

This introduction has provided a brief look at some of the many capabilities of SAS/ASSIST Software. You are encouraged to explore other menu choices and options on your own. Once you are accustomed to moving through the SAS/ASSIST interface, specifying tasks can be as easy as Αpoint and click@.

REFERENCES

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