THE POWER TO KNOW.

SAS® Universal Viewer 1.2
User's Guide

SAS® Documentation

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About This Book

Audience

SAS Universal Viewer is designed for both experienced and inexperienced users. You can view or manipulate SAS data sets, or move SAS data sets to another application.

The only requirement for using SAS Universal Viewer is a Windows operating environment. A SAS license is not required.

Chapter 1

Introduction to SAS Universal Viewer

About SAS Universal Viewer

SAS Universal Viewer is an application for the Windows operating environment that enables you to view SAS data sets and other types of files without invoking SAS and without installing SAS on your computer. SAS Universal Viewer is a replacement for the SAS System Viewer, and it is available with Base SAS and as a free download from SAS. You can view, sort, and filter data sets, but you are not able to edit them.

Types of Files That You Can View with SAS Universal Viewer

With SAS Universal Viewer, you can view the following types of files:

- SAS data sets, including those that were created on platforms other than Windows
- SAS v5 transport files
- SAS programs, logs, and listings
- general text files
- HTML and other file types that open in Internet Explorer

Benefits of Using SAS Universal Viewer

SAS Universal Viewer provides you with ways to manipulate SAS data sets and other files. You can perform the following tasks:

- view data without the risk of changing file contents
- filter data to create specific subsets of data
- sort data to organize important information or to highlight important fields

How to Get Help for SAS Universal Viewer

Help for SAS Universal Viewer is delivered in the form of a user's guide. The user's guide is available from the **Help** menu in the product.

Accessibility Features of SAS Universal Viewer

Overview

SAS Universal Viewer includes accessibility and compatibility features that improve the usability of the product for users with disabilities. These features are related to accessibility standards for electronic information technology that are adopted by the U.S. Government under Section 508 of the U.S. Rehabilitation Act of 1973, as amended.

If you have questions or concerns about the accessibility of SAS products, send e-mail to **`accessibility@sas.com`**.

Applets and Plug-ins

SAS Universal Viewer does not require an applet or plug-in on the client system.

Assistive Technologies

When pages use scripting languages to display content or to create interface elements, the information that is provided by the script is identified with functional text that can be read by assistive technology. Some exceptions include using JAWS for reading table controls and certain functional text, and collapsing and contracting nodes while navigating with JAWS.

Color

The interface is designed so that all information that is conveyed with color is also available without color.

SAS Universal Viewer does not override user-selected contrast and color selections and other individual display attributes. With the Windows High Contrast #2 built-in theme, the foreground text of the tabular list in the **Properties** tab is not initially visible. The text is readily visible with High Contrast #1 or the White or Black built-in themes.

SAS Universal Viewer does not use color coding as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

SAS Universal Viewer inherits user settings for color and contrast.

Current Focus

In SAS Universal Viewer, some of the controls do not have focus during the navigation of the product.

Displaying Text

Textual information is provided through operating system functions for displaying text. The minimum information that is made available is text content, text input caret location, and text attributes. SAS Universal Viewer uses standard operating system functions for displaying text.

Disruption of Accessibility Features

SAS Universal Viewer does not disrupt any activated accessibility features that are offered by the operating system.

Document Organization

Documents are organized so that they are readable without requiring an associated style sheet. When style sheets are disabled, the information is still able to be read.

Electronic Forms

When electronic forms are designed to be completed online, the form enables people using assistive technologies to access the information, field elements, and functionality that is required for completion and submission of the form, including all directions and cues. Some exceptions include reading error messages and using JAWS to read labels.

Flashing or Blinking Elements

SAS Universal Viewer uses no flashing or blinking elements except for the system caret.

Images

In most cases, alternative text is provided with images. Images are used consistently throughout the interface.

When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning that is assigned to those images are consistent throughout SAS Universal Viewer performance.

Input Focus

A well-defined, on-screen indication of the current screen focus is provided by SAS Universal Viewer. The focus can move among interactive interface elements as the input focus changes.

Interaction with Other Applications

SAS Universal Viewer does not disrupt or disable accessibility features that are provided with other applications that are developed and documented according to industry standards.

SAS Universal Viewer does not disrupt or disable features of any operating system that are identified as accessibility features. The application programming interface for those features must be documented by the manufacturer of the operating system and be made available to the product developer.

Keyboard Considerations

SAS Universal Viewer is designed to run on a system that supports a keyboard. Product functions are executable from a keyboard where the function itself or the result of performing a function can be seen in text. Some exceptions include keyboard keys that are used to activate some controls, and keyboard keys that are used to activate cell values in summary tables.

SAS Language Concepts

SAS Data Sets, Tables, and Variables

A SAS data set is a file whose contents are represented in a format that is specific to SAS. In database management systems, a SAS data file is typically referred to as a two-dimensional table.

SAS uses the term “observation” to refer to rows in a table. Each observation is one row. SAS uses the term “variable” to refer to columns in a table. Each variable is a column in a table. The data values for each variable describe the characteristics (attributes) of that variable for all observations. Each SAS variable can have the following attributes:

- name
- data type (character or numeric)
- length
- format
- informat
- label

SAS Libraries

A SAS library is a collection of related SAS files and is similar in concept to a folder. In directory-based operating environments, a SAS library is a group of SAS files that are stored in the same directory and accessed by the same engine. Other files can be stored in the directory, but only the files with file extensions that are assigned by SAS are recognized as part of the SAS library.

SAS Formats

SAS formats control the way that SAS data is displayed. For example, for the variable COST, the format might be DOLLAR10.2. This format displays the value of COST with a leading dollar sign and a maximum length of 12 characters that includes two decimal positions. SAS Universal Viewer applies formats by default.

SAS Informats

An informat is an instruction that SAS uses to read data values into a variable. For example, the following value contains a dollar sign and commas: $1,000,000. To remove the dollar sign ($) and commas (,) before storing the numeric value 1000000 in a variable, you can read this value with the COMMA11. informat. Unless you explicitly define a variable first, SAS uses the informat to determine whether the variable is numeric or character. SAS also uses the informat to determine the length of character variables.

Variable Labels

A label is descriptive text that is associated with a SAS data set variable. Each variable or column in a SAS data set has a name that is used within the SAS code. Using a label to refer to a variable can make it easier to understand what a variable represents. SAS allows a label to be associated with each variable in a SAS data set.

Chapter 2

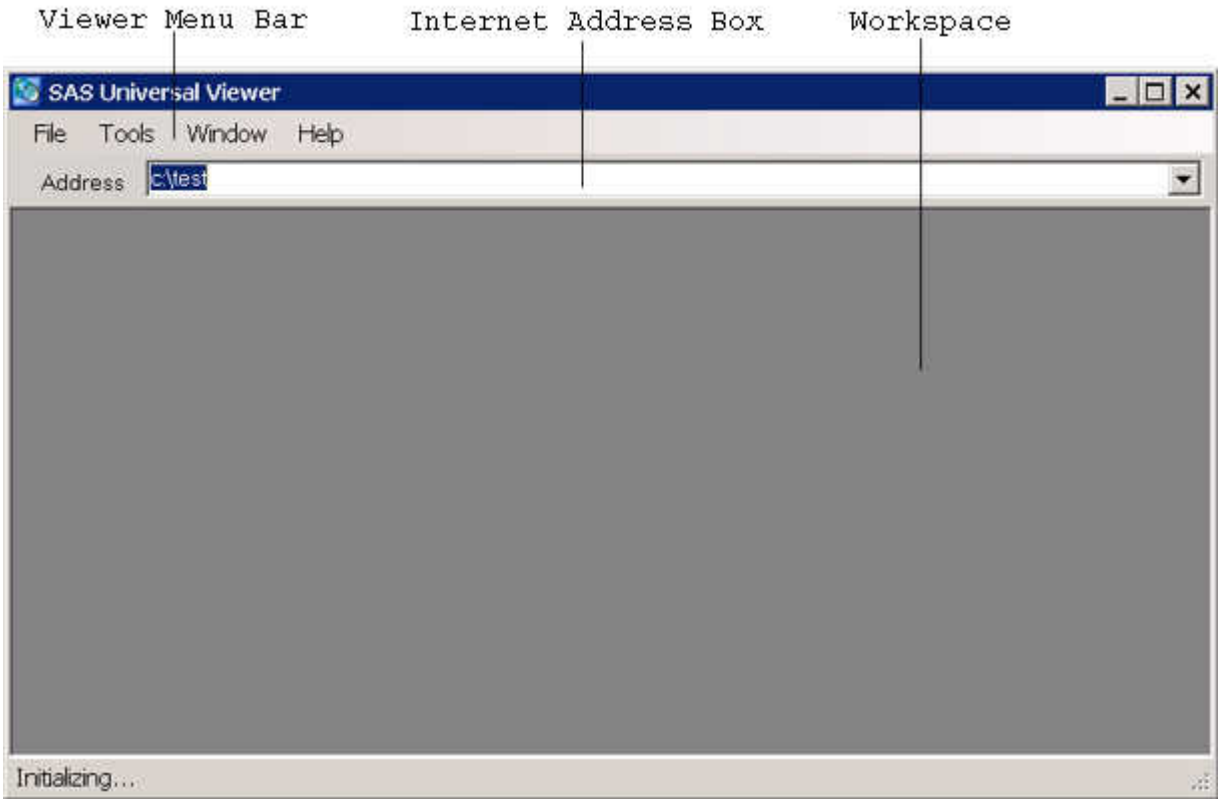
SAS Universal Viewer Interface

SAS Universal Viewer Main Window

The Main Window

When you invoke SAS Universal Viewer, a window appears that shows the name of the product and the release. After a few moments, the main SAS Universal Viewer window appears:

Display 2.1 *SAS Universal Viewer Main Window*



You can open libraries and files from the **File** menu or by entering the location in the **Address** box.

The following menus are available with SAS Universal Viewer:

File
enables you to open a library and open one or more files. The files open in a workspace.

Tools
enables you to set logon options, set the default use of formats, and set page breaking properties.

Window
enables you to select cascading, vertical, or horizontal tiling.

Help
enables you to access the SAS Universal Viewer 1.2: User's Guide.

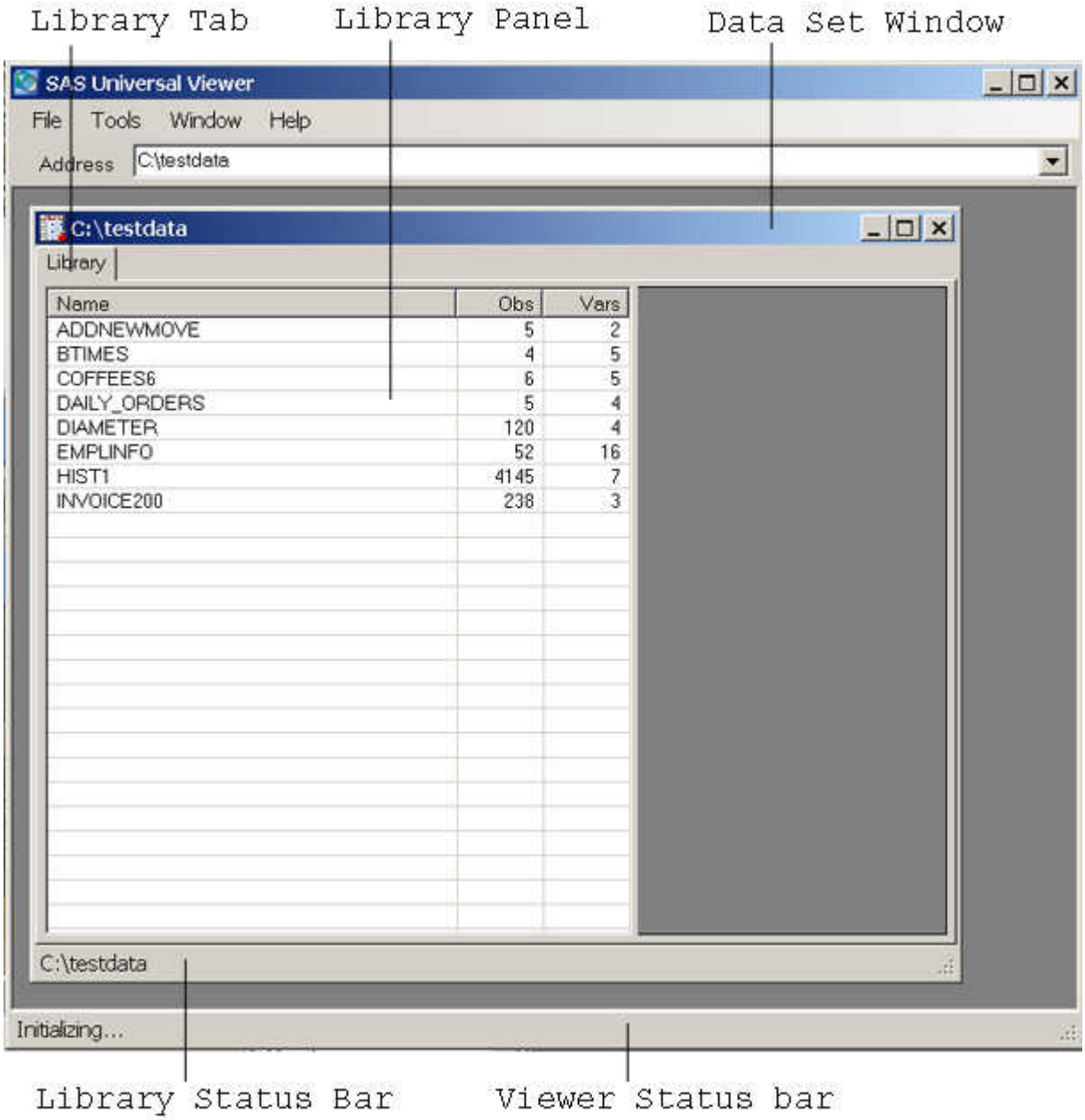
The **Address** box enables you to open files and libraries by entering the file or library location. **Address** can be a local directory, a network path, or an Internet address. If you type an Internet address in the **Address** field, SAS Universal Viewer opens a browser in the workspace. You can have multiple workspaces open at the same time. Using multiple workspaces enables you to work on sets of files as a unit.

Using the Interface to View Libraries and Files

View a Library

To view a SAS data set library, select **File** ⇨ **Open** ⇨ **SAS Data Set Library**, or enter a location in the **Address** field. The following window appears:

Display 2.2 *SAS Data Set Library*

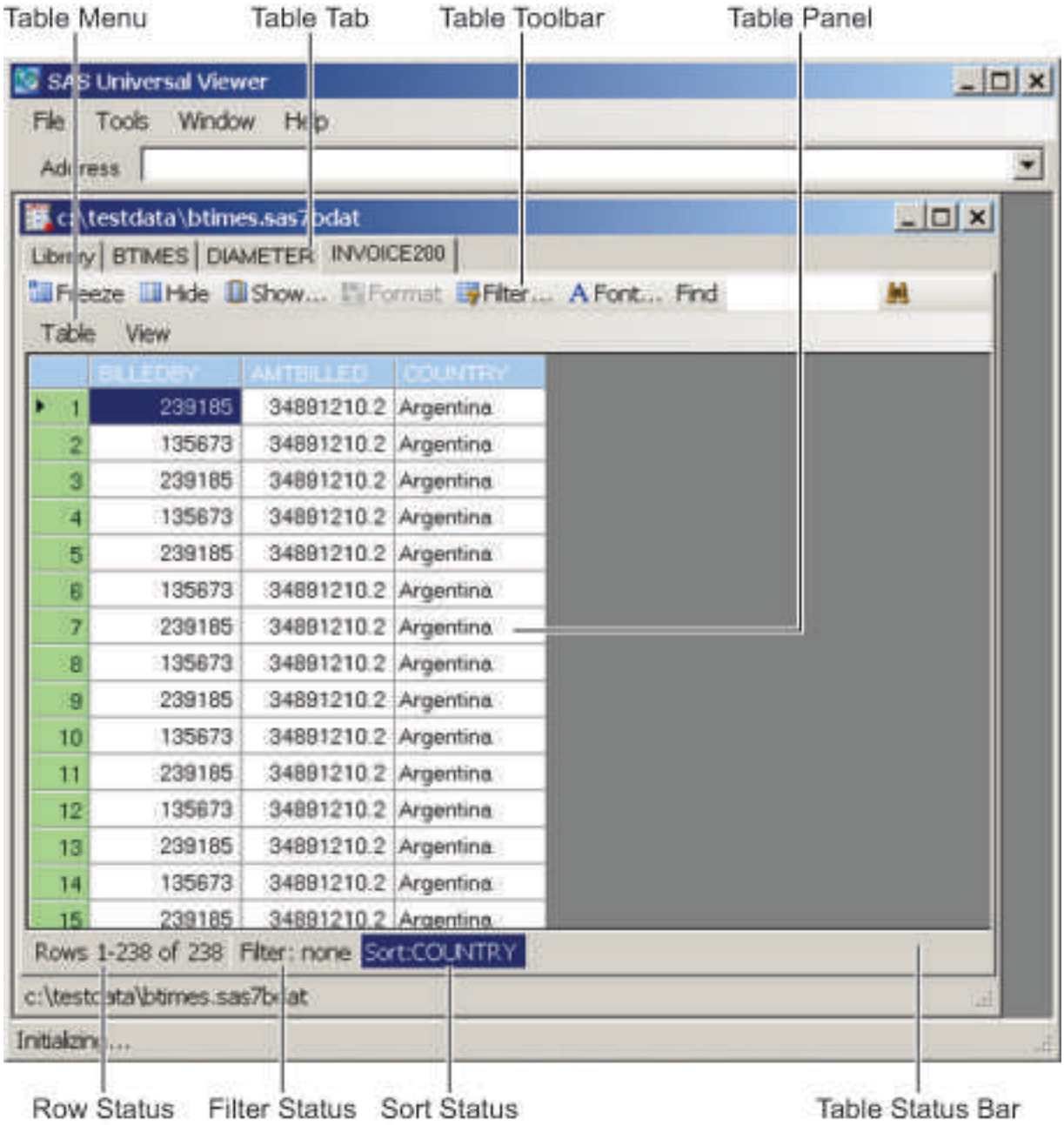


The Data Set window is displayed in the workspace and a **Library** tab is created. The library panel becomes populated with a list of SAS data sets that are located in the library. For each SAS data set, the name, number of observations, and the number of variables are listed. You can open multiple libraries and multiple files within the libraries. You can view a library at any time by clicking the **Library** tab.

View SAS Data Sets

If you double-click any SAS data set in the library, a table panel displays that is populated with the data from the SAS data set. You can open multiple data sets from the library view. Each data set is associated with a **Table** tab in the Data Set window. In the following example, the table tab **INVOICE200** is selected:

Display 2.3 *Data Set Tables*

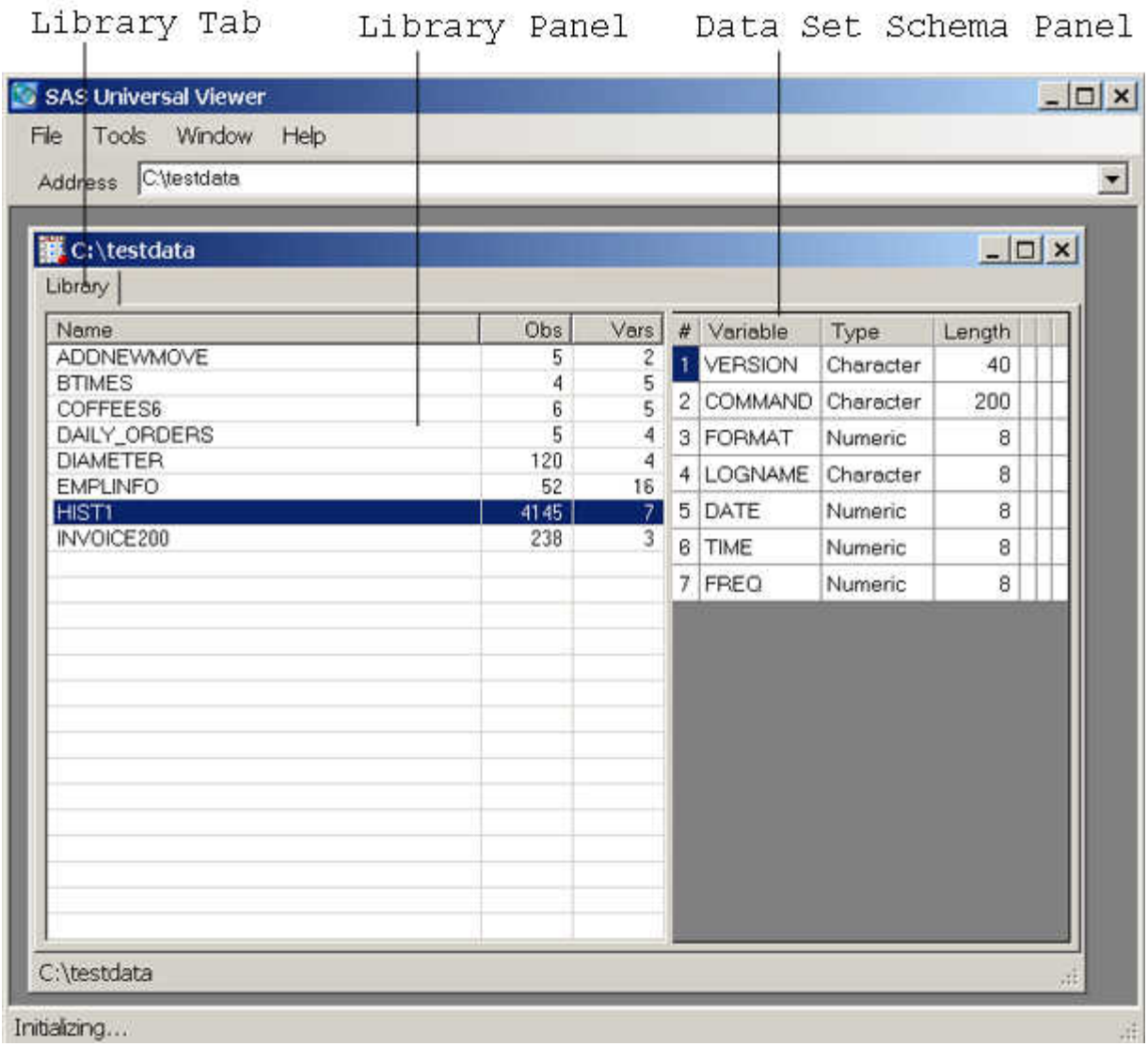


A **Table** menu and table toolbar enable you to view and manipulate the table that is displayed. The table status bar, located at the bottom of the table panel, displays row status, filter status, and sort status.

View SAS Data Set Variables

If you click any SAS data set in the library, a data set schema panel is displayed and is populated with data from the SAS data set that you selected. The data set schema defines the variables (columns) in the SAS data set and their properties. In the following example, the schema for data set **HIST1** is displayed:

Display 2.4 *Data Set Schema Panel*

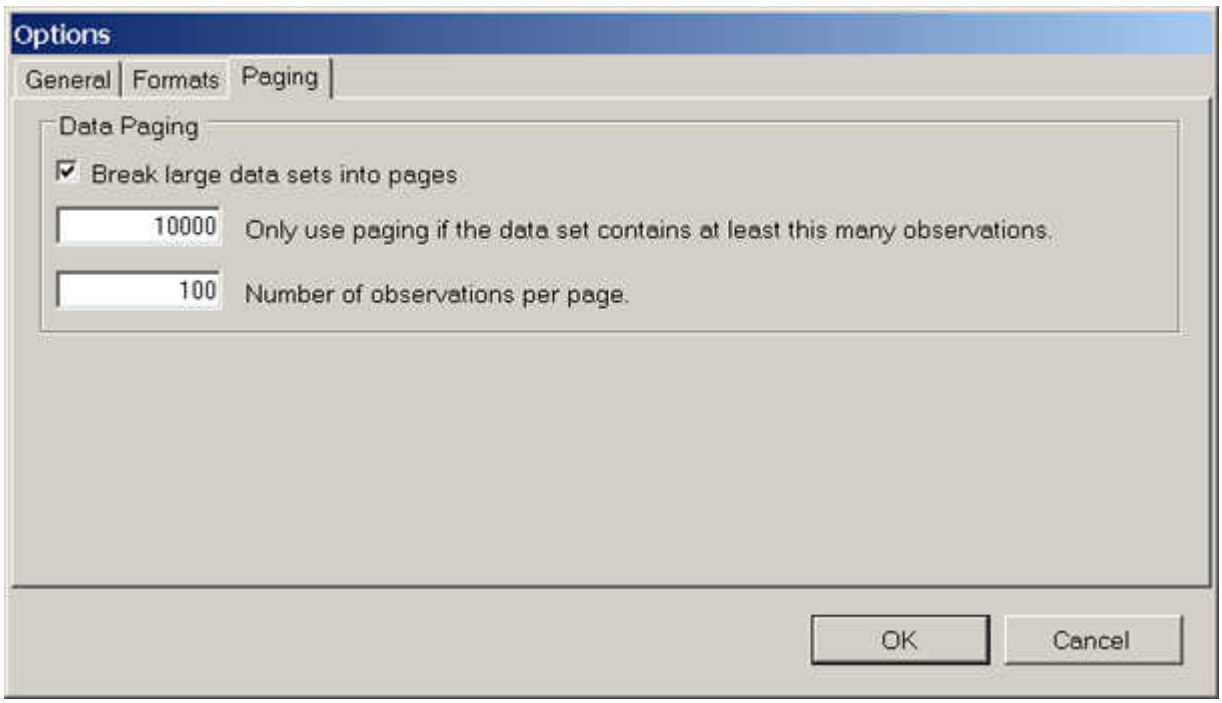


View Your SAS Data Set As a Series of Pages

If your data set is very large, the data might take a long time to load or be too large for the amount of available memory. In either case, you can load and view the SAS data set as a series of pages.

To view the data set as a series of pages, select **Tools** ⇨ **Options** ⇨ **Paging**. The following window appears:

Display 2.5 *Paging Tab in the Options Window*



To break your data set into pages, make sure that the **Break large data sets into pages** box is checked. Enter a value in each of the fields. The second field contains the number of observations that you want to see on one page.

If you choose to break the data set into pages, you can sort and filter the data on each page, but you cannot sort and filter the entire data set. Paging enables you to view data from data sets that would normally be too large to view. If you need to sort and filter across the entire data set, you should deselect the **Break large data sets into pages** box on the **Paging** tab.

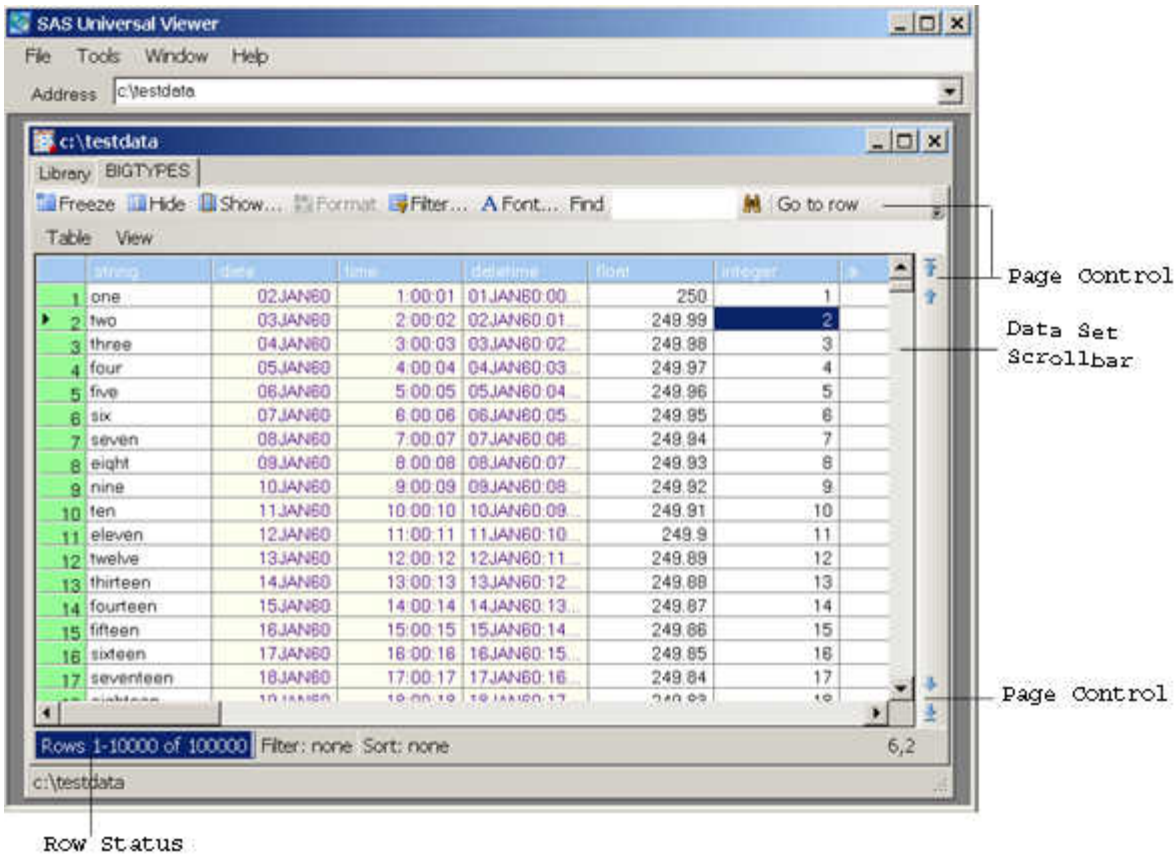
View Large Data Sets without Paging

You can view large data sets without paging by ensuring that the **Break large data sets into pages** box in the **Paging** tab is not checked.

When a data set exceeds the specified maximum data set size, the row status is highlighted and page controls become available.

The following example shows the location of the page controls:

Display 2.6 *Data Set Pages*



You use the data set scroll bar to scroll the data within a page. You use the page controls to load new pages into memory. The up and down page control arrows without a bar are used to navigate one page at a time. The up and down page control arrows with bars at the tips of the arrow are used to navigate to the first and last page in the data set.

The **Go to row** page control enables you to go to a specific row in the table. Clicking the arrow to the right of **Go to row** opens a box in which you can enter the row that will become the first row of a page.

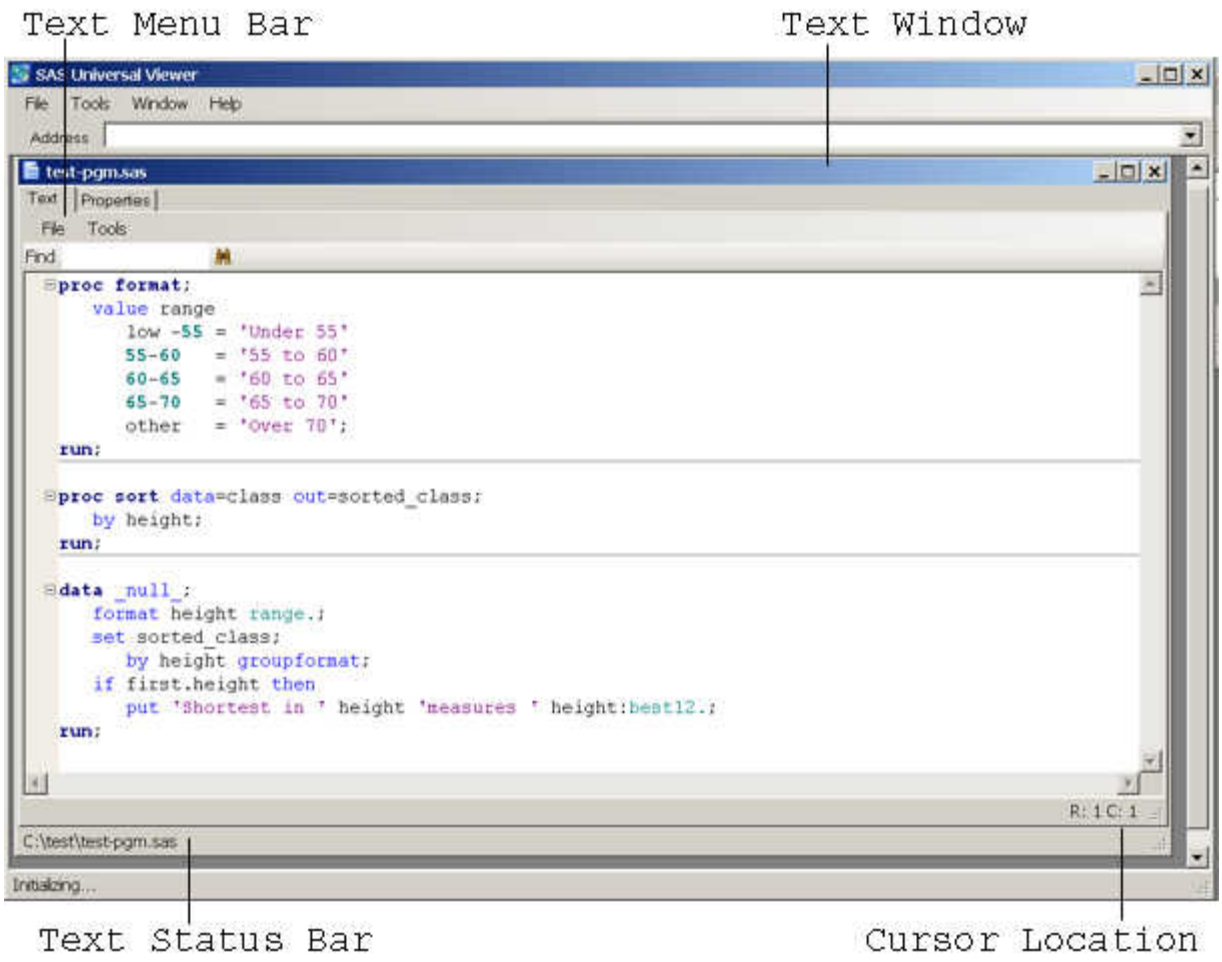
View Text Files

You can view text files such as SAS programs, log files, output listings, and other text files.

To view a SAS program, select **File** ⇨ **Open** ⇨ **SAS Program**. Select a file that has a .sas extension. You can view the file you select. To execute the SAS program, however, you must have a SAS license and you must open a SAS session.

The following example shows a SAS program called test-pgm.sas:

Display 2.7 *Example of a SAS Program*



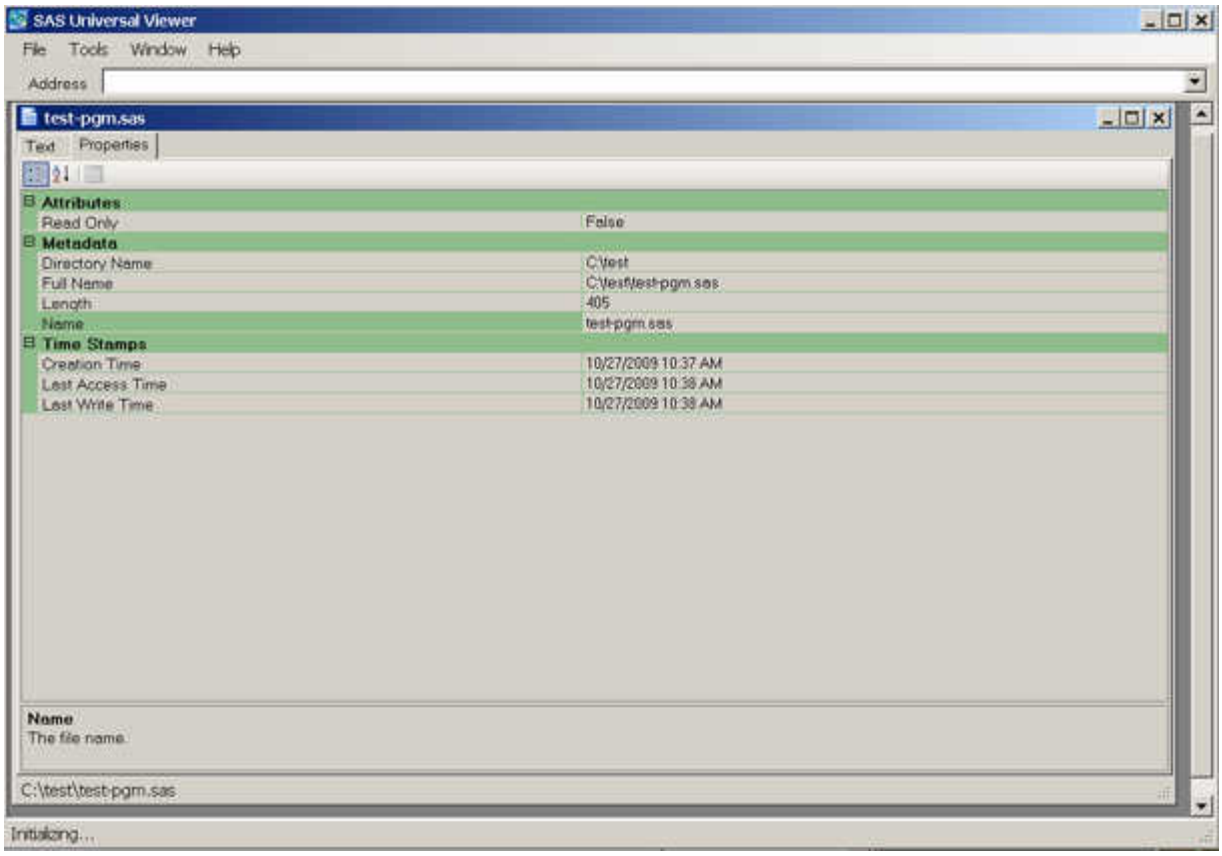
To view a log file or a listing, select **File** ⇨ **Open** ⇨ **Log** or **File** ⇨ **Open** ⇨ **List**.

View the Properties of a Text File

You can view the properties of a text file by opening the text file and then clicking the **Properties** tab. You are able to view the attributes, metadata, and time stamps of the text file.

The following window appears when you click the **Properties** tab:

Display 2.8 *Properties of the test-pgm.sas Text File*



View Other Files

You can view other files, such as Excel spreadsheets, by selecting **File** ⇨ **Open** ⇨ **Other**. Select the file you want to open.

Open and Save Your Workspace

You can open multiple files in your workspace. To open your workspace, select **File** ⇨ **Open** ⇨ **Workspace**. SAS Universal Viewer first closes all of the windows that are open in your current workspace. Files that are associated with the new workspace are then loaded. When you save a workspace, the files that are open are saved. By default, whenever you exit SAS Universal Viewer, the Viewer saves the last workspace that you used.

You can change the workspace settings by selecting **Tools** ⇨ **Option** ⇨ **General**. The **General** tab enables you to select workspace options.

Chapter 3

Performing Common Tasks with SAS Universal Viewer

Apply or Remove SAS Formats

You can apply SAS formats to or remove SAS formats from columns in the data set you are viewing. Right-click to select a cell in the column for which you want to change the format. In the menu that appears, check or uncheck **Format**. The **Format** option acts like a toggle.

Change File Associations

Perform the following tasks to set SAS Universal Viewer as the default application for opening files that have a specific extension:

1. Select **File** ⇨ **Open** ⇨ **Other** from the menu.
2. Right-click a file with the extension you want.
3. Select **Open With** from the menu.
4. Under **Choose Program**, select **SAS.UniViewer** as the program you want to use to open the file.
5. Check the box at the bottom of the selection list if you want SAS Universal Viewer to always open this type of file.
6. Click **OK**.

Copy and Paste to Other Applications

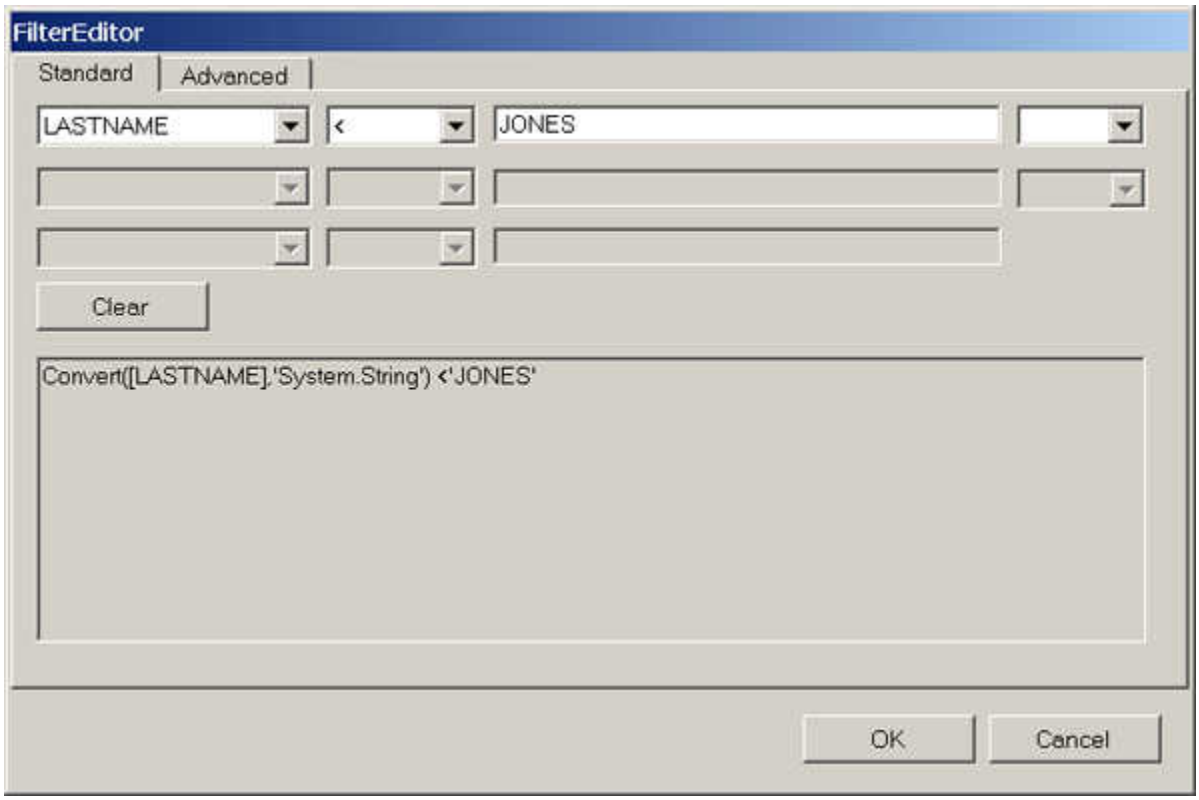
SAS Universal Viewer follows standard Windows copy and paste operations. You cannot edit tables, but you can copy the data from a table to other applications. You cannot copy row and column headings.

Filter Data

Standard Data Filtering

Clicking **Filter** in the table toolbar opens the Filter Editor window:

Display 3.1 *Filter Editor Window*



You can use the Filter feature to subset data. In this example of standard data filtering, the first field contains the name of the filter variable, LASTNAME, which was chosen from the drop-down menu in the window. The drop-down menu in the second field establishes the relationship between the filter variable and the value that you enter into the third field. The fourth field enables you to select **AND** or **OR** to continue with the selection process. Clicking **OK** returns the filtered observations.

When you view a data set, you can select **View** ⇨ **Apply Filter** to toggle the existing filter on and off.

Note: You can use CTRL-C to copy and paste a value from your table to the third field in the Filter Editor window. Select a value from the table before you click the **Filter** tab.

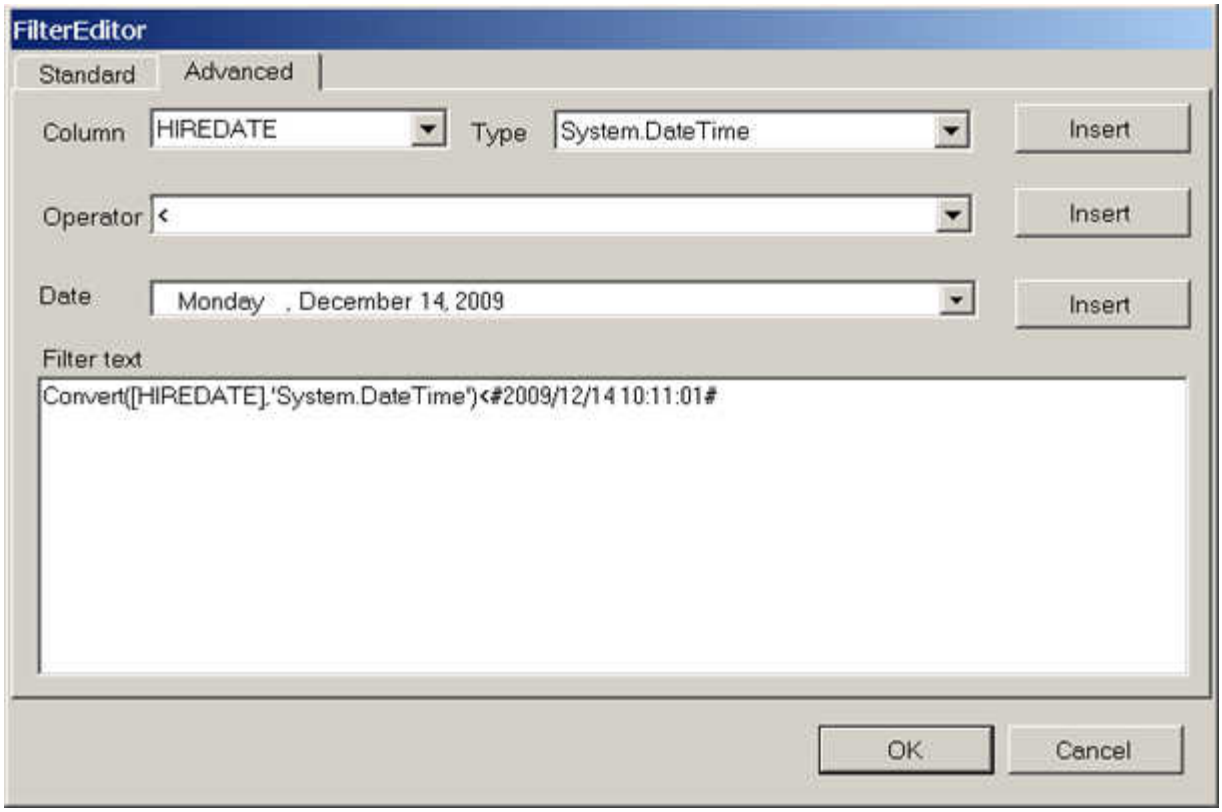
Advanced Data Filtering

To use the advanced filtering feature, click the **Advanced** tab in the Filter Editor window. Enter a column heading, select the data type, and click **Insert**. Select an

operator from the menu and click **Insert**. Select a date from the calendar and click **Insert**.

In the following example, the column **HIREDATE** is selected with a type of **System.DateTime**. The filter returns observations where **HIREDATE** is less than the value in the **Date** field. Note that you must click **Insert** after you make your field selections.

Display 3.2 *Advanced Tab of the Filter Editor Window*



Find Text in a Table

To find text in a table, enter the text you want to find in the **Find** box and then click the  icon. Click the icon again to find the next occurrence.

Hide Columns or Show Hidden Columns in a Table

To hide a column in a table, right-click any cell in the column that you want to hide and then select **Hide** from the menu.

To show a hidden column in a table, click the **Show** button. The Column Visibility window appears. All of the columns in the table are listed. Check the box to the left of

the column name to show the column in the table. Boxes that are not checked cause the columns to be hidden when you view the table.

You can also hide multiple columns by using CRTL-CLICK or SHIFT-CLICK to select the columns, and then clicking the **Hide** button to hide the columns.

Move a Column to a Different Position in a Table

To move a column to a different position in a table, drag the column heading to the desired location in the table.

Paging for Viewing Large Files

You can set the number of observations that will result in a page break in your SAS data set. To set the number of observations, follow these steps:

1. Select **Tools** ⇨ **Options** from the menu.
2. Click the **Paging** tab.
3. Make sure that the **Break large data sets into pages** box is checked.
4. Enter the number of observations in the boxes of the Data Paging section.
5. Click **OK**.

Note: Deselecting the check box in the **Paging** tab enables the full data set to be brought into SAS Universal Viewer. You can then filter and sort the entire data set.

Prevent Column Scrolling

You can prevent one or more columns from scrolling horizontally. To prevent column scrolling, click a cell in the column that you want to remain stationary, and then click the **Freeze** button. The column that you selected, as well as all of the columns to the left of the selected column, will not scroll when you move the scroll bar to the right or to the left. Click **Freeze** again to allow scrolling.

Resize Columns

To resize a column, drag the column separator to the left or right between the table headings.

Save a Table

To save a table, select **Table** ⇨ **Save As** from the **Table** menu.

Save a Table as an XML or CSV File

To save a table in XML or CSV format, select **Table** ⇨ **Save As** from the **Table** menu. Enter a filename, and then select **XML** or **CSV** from the **Save as type** menu.

Save, Print, or Close a Table

To save, print, or close a table, click the **Table** button. From the menu, select **Save As** to save the table, **Print** to print the table, or **Close** to close the table.

Select Data

SAS Universal Viewer uses standard Windows navigation:

- You can hold down the CTRL key and click multiple items to select them all.
- You can select all the data in a table by clicking CTRL-A or by clicking the empty box in the upper left corner of the table.
- You cannot select column headings in a table, but you can drag column headings to move a column to a different position in the table.
- To select an entire row in a table, click the row number.
- To select an entire column in a table, hold down the SHIFT key and then click the first table cell and the last table cell.

Sort a Table

Clicking a column heading sorts the table by that column. You can sort a table by any column, but you can sort only by one column at a time. Clicking the column heading works as a toggle. An upward facing arrow in the heading indicates that the data is sorted in ascending order, and a downward facing arrow indicates that the data is sorted in descending order. If your table is paged (loaded as a series of pages), then sorting columns applies only to the page of observations that you are viewing.

View a Large File without Paging

To view a large file without paging, follow these steps:

1. Select **Tools** ⇨ **Options** from the menu.
2. Click the **Paging** tab.
3. Make sure that the **Break large data sets into pages** box is not checked.

Values for the number of observations will still display, but these values are ignored. Deselecting the check box enables the full data set to be brought into SAS Universal Viewer. You can then filter and sort the entire data set.

4. Click **OK**.

View Column Labels

To view column labels in column headings, right-click any cell in the table and then select **Display Labels** from the menu. The **Display Labels** selection acts like a toggle, turning labels on and off.

If you do not have labels associated with column headings, then the variable name is displayed in the headings. To determine which columns have labels, click the **Library** tab and then select a table. Information about the table, including the labels, is displayed on the right side of the window.