

# SAS Windows and Files

Display Manager For Windows

# Computers with SAS software

- SSCC
  - Winstat (Windows Terminal Servers)
  - linstat (Linux Servers)
  - Lab computers
- DoIT
  - Info Labs (as of June 2014)
    - In all Labs with Windows computers? See [www.doit.wisc.edu/services/computer-labs-infolabs/](http://www.doit.wisc.edu/services/computer-labs-infolabs/)
  - Campus Software Library

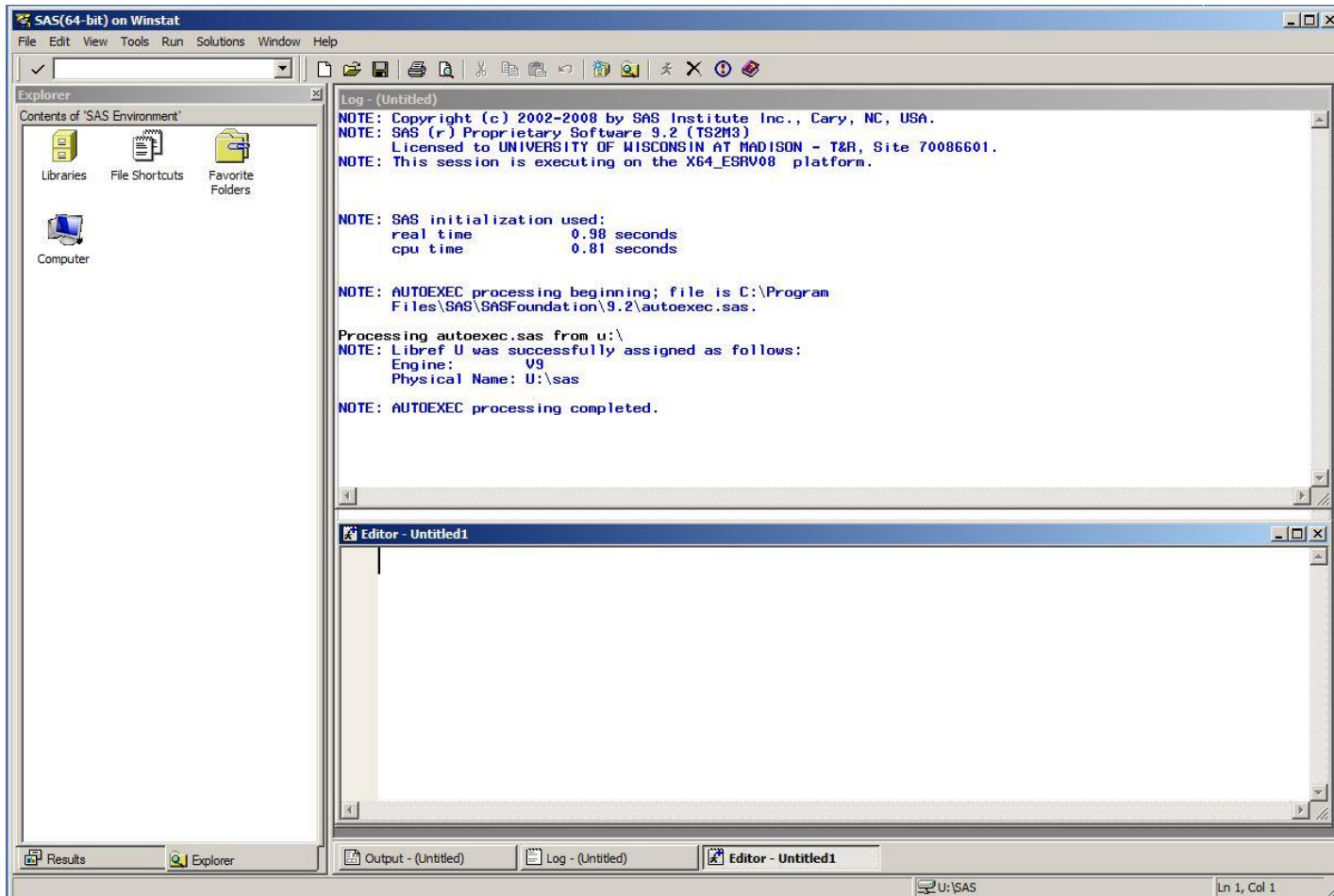
# SAS Interfaces

- There are several different ways to work with SAS, including batch processing, Display Manager windows (DMS), point-and-click graphical user interfaces including Enterprise Guide, and other custom interfaces.
- In the SSC, our users primarily rely on DMS (on Winstat) and on batch processing (on linstat).
- (either option works in either environment)

# DMS vs. Batch

- A windowed programming environment provides ease of revision and re-running selected commands. This is especially suited to smaller problems and developing an analysis.
- Batch processing ensures completeness and order of all commands. This is suited to final analyses, as well as lengthy runs.

# The SAS DMS windows



# Four Window SAS

- We'll start with four main windows
  - Editor – for writing, editing, and running commands
  - Results (not visible above) – for statistical and graphical output
  - Log – for processing information and ERROR messages
  - Viewtable (not visible above) – for looking at data sets

# SAS files

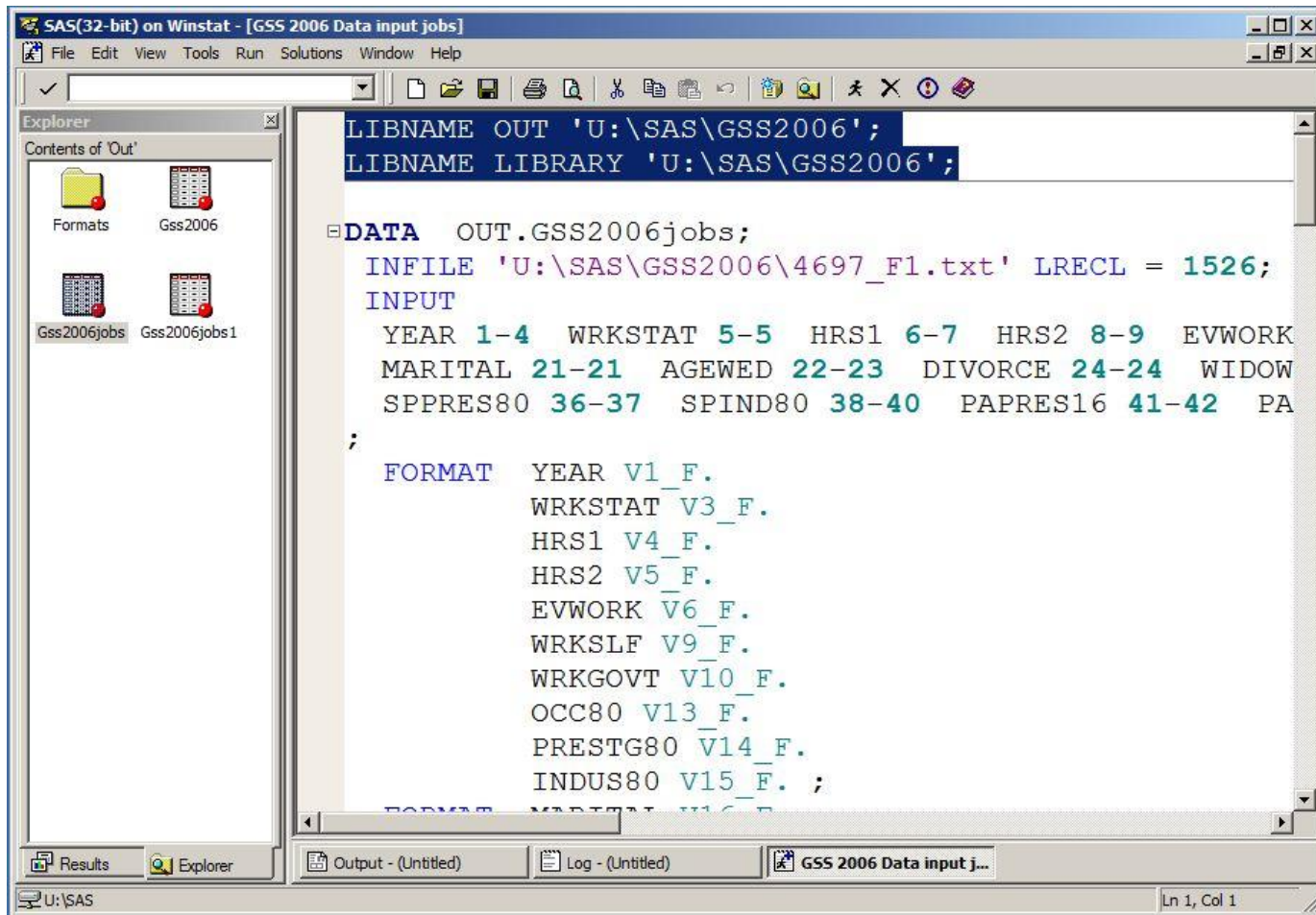
| <u>File type</u> | <u>File extension</u> | <u>DMS window</u> |
|------------------|-----------------------|-------------------|
| – Commands       | *.sas                 | Editor            |
| – Results        | *.html, *.jpg         | Results           |
| – Log            | *.log                 | Log               |
| – Data           | *.sas7bdat            | Explorer, Viewer  |
| – (Results       | *.lis, *.pdf, *.rtf   | Output)           |

# Command files

- Text files with \*.sas file extension
  - Seen in the “Enhanced Editor” window
  - Open and save the conventional way
    - File – New Program
    - File – Open Program
    - File – Save or Save as
  - Run with Run – Submit (or F8)
    - All
    - Selection



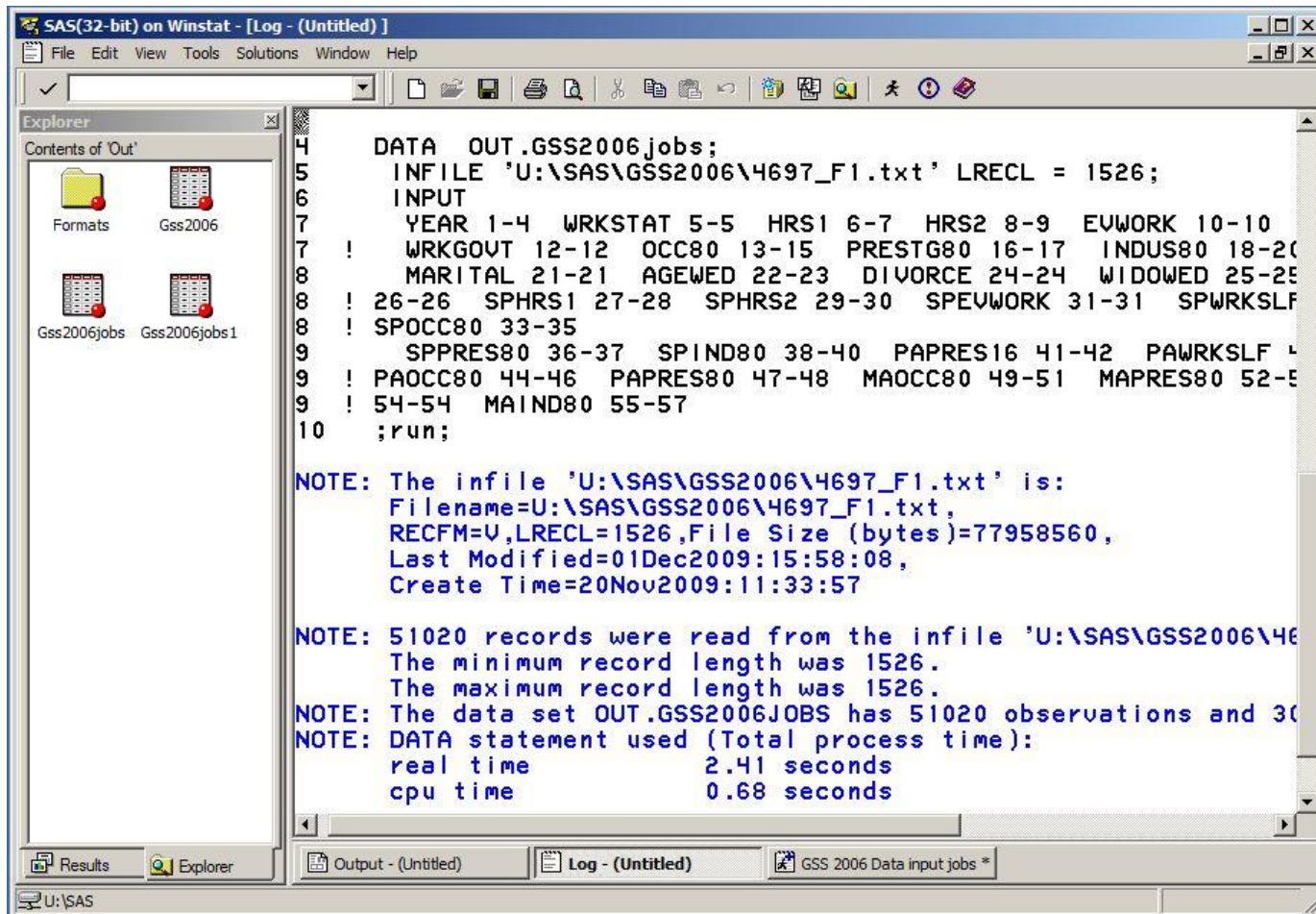
# Enhanced Editor



# Log files

- Another text file, with a \*.log file extension
  - Echoes command lines
  - Gives notes about processing
  - ERROR messages and warnings
  
  - Save in the conventional way
    - File – Save or Save as
- Clear the log window with File – New (or Ctrl-e)

# Log window



# Results (output) files

- The Results window gives you a means of viewing and navigating output. It is in HTML (web) format.
  - Save as HTML with File – Save As
- To save in other formats, use ODS commands
  - Text (listing)
  - Rtf (MS-Word)
  - Pdf

# Results window

The screenshot displays the SAS Results window with a tree view on the left and a main output area on the right. The tree view shows a hierarchy of results including 'Means: The SAS System', 'Summary statistics', 'Freq: The SAS System', 'Univariate: The SAS System', and 'Reg: Days of Ice Cover'. The main output area is divided into two sections: 'The MEANS Procedure' and 'The FREQ Procedure'.

**The SAS System**  
The MEANS Procedure

| Variable | N   | Mean        | Std Dev    | Minimum     | Maximum     |
|----------|-----|-------------|------------|-------------|-------------|
| Days     | 159 | 103.1194969 | 19.2180574 | 21.0000000  | 161.0000000 |
| icein    | 166 | -10.3373494 | 12.8509187 | -39.0000000 | 63.0000000  |
| iceout   | 165 | 88.9939394  | 22.2799530 | -24.0000000 | 125.0000000 |

**The SAS System**  
The FREQ Procedure

| icein    | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|----------|-----------|---------|----------------------|--------------------|
| November | 4         | 2.41    | 4                    | 2.41               |
| December | 129       | 77.71   | 133                  | 80.12              |
| January  | 32        | 19.28   | 165                  | 99.40              |
| March    | 1         | 0.60    | 166                  | 100.00             |

Frequency Missing = 2

The window title is 'SAS - [Results Viewer - SAS Output]'. The taskbar shows 'Results', 'Explorer', 'Output - (Untitled)', 'Log - (Untitled)', '00 Mendota Ice intro...', and 'Results Viewer - SA...'. The system tray shows 'Done' and the user path 'C:\Users\hemken'.

# Results window

The SAS System 12:42 Wednesday, May

The FREQ Procedure

| WRKSTAT | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|---------|-----------|---------|----------------------|--------------------|
| 1       | 25374     | 49.73   | 25374                | 49.73              |
| 2       | 5171      | 10.14   | 30545                | 59.87              |
| 3       | 1081      | 2.12    | 31626                | 61.99              |
| 4       | 1545      | 3.03    | 33171                | 65.02              |
| 5       | 6627      | 12.99   | 39798                | 78.00              |
| 6       | 1530      | 3.00    | 41328                | 81.00              |
| 7       | 8709      | 17.07   | 50037                | 98.07              |
| 8       | 975       | 1.91    | 51012                | 99.98              |
| 9       | 8         | 0.02    | 51020                | 100.00             |

U:\SAS

Results Explorer Output - (Untitled) Log - (Untitled) GSS 2006 Data input jobs \*

# Data files

- Mostly created and **saved** with DATA steps
- View data file contents by finding them in the SAS Explorer window and opening as Viewtables
- May be copied/moved with the SAS Explorer using SAS libraries (defining libraries requires an additional step)

# Explorer window (on the left)

The screenshot shows the SAS software interface. On the left is the Explorer window, which displays 'Active Libraries' including Library, Maps, Out, Sasuser, U, and Work. The main window displays the output of a FREQ procedure, showing a table with columns for WRKSTAT, Frequency, Percent, Cumulative Frequency, and Cumulative Percent. The table data is as follows:

| WRKSTAT | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
|---------|-----------|---------|----------------------|--------------------|
| 1       | 25374     | 49.73   | 25374                | 49.73              |
| 2       | 5171      | 10.14   | 30545                | 59.87              |
| 3       | 1081      | 2.12    | 31626                | 61.99              |
| 4       | 1545      | 3.03    | 33171                | 65.02              |
| 5       | 6627      | 12.99   | 39798                | 78.00              |
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| 9       | 8         | 0.02    | 51020                | 100.00             |

The interface also shows the title bar 'SAS(32-bit) on Winstat - [Output - (Untitled)]', a menu bar (File, Edit, View, Tools, Solutions, Window, Help), a toolbar, and a taskbar at the bottom with icons for Results, Explorer, Output - (Untitled), Log - (Untitled), and GSS 2006 Data input jobs \*. The system tray shows 'U:\SAS'.



# Viewtable

(in the Explorer: double click a library, then a data set)

The screenshot displays the SAS software interface. The main window is titled "VIEWTABLE: Library.Gss2006jobs" and shows a data grid with the following columns: GSS YEAR FOR THIS RESPONDENT, LABOR FORCE STATUS, NUMBER OF HOURS WORKED LAST WEEK, NUMBER OF HOURS USUALLY WORK A WEEK, EVER WORK AS LONG AS ONE YEAR, R SELF-EMP OR WORKS FOR SOMEBODY, GOVT OR PRIVATE EMPLOYEE, RS CENSUS OCCUPATION CODE (1980), and R O P S. The data grid contains 22 rows of data. On the left, the Explorer window shows the contents of the "Library" folder, including "Formats", "Gss2006", "Gss2006jobs", and "Gss2006jobs1". The bottom status bar shows the current directory as "U:\SAS".

|    | GSS YEAR FOR THIS RESPONDENT | LABOR FORCE STATUS | NUMBER OF HOURS WORKED LAST WEEK | NUMBER OF HOURS USUALLY WORK A WEEK | EVER WORK AS LONG AS ONE YEAR | R SELF-EMP OR WORKS FOR SOMEBODY | GOVT OR PRIVATE EMPLOYEE | RS CENSUS OCCUPATION CODE (1980) | R O P S |
|----|------------------------------|--------------------|----------------------------------|-------------------------------------|-------------------------------|----------------------------------|--------------------------|----------------------------------|---------|
| 1  | 2006                         | WORKING FULLTIME   | 35                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 95                               | --      |
| 2  | 2006                         | WORKING FULLTIME   | 40                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 243                              | --      |
| 3  | 2006                         | RETIRED            | NAP                              | NAP                                 | YES                           | SOMEONE ELSE                     | PRIVATE                  | 715                              | --      |
| 4  | 2006                         | WORKING PARTTIME   | 24                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 313                              | --      |
| 5  | 2006                         | SCHOOL             | NAP                              | NAP                                 | NO                            | NAP                              | NAP                      | NAP                              | --      |
| 6  | 2006                         | WORKING FULLTIME   | 37                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 375                              | --      |
| 7  | 2006                         | WORKING FULLTIME   | 40                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 447                              | --      |
| 8  | 2006                         | UNEMPL, LAID OFF   | NAP                              | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 174                              | --      |
| 9  | 2006                         | WORKING FULLTIME   | 38                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 336                              | --      |
| 10 | 2006                         | WORKING FULLTIME   | 35                               | NAP                                 | NAP                           | SOMEONE ELSE                     | GOVERNMENT               | 157                              | --      |
| 11 | 2006                         | RETIRED            | NAP                              | NAP                                 | YES                           | SOMEONE ELSE                     | GOVERNMENT               | 439                              | --      |
| 12 | 2006                         | OTHER              | NAP                              | NAP                                 | YES                           | SOMEONE ELSE                     | GOVERNMENT               | 431                              | --      |
| 13 | 2006                         | SCHOOL             | NAP                              | NAP                                 | YES                           | SELF-EMPLOYED                    | PRIVATE                  | 19                               | --      |
| 14 | 2006                         | WORKING FULLTIME   | 43                               | NAP                                 | NAP                           | SOMEONE ELSE                     | GOVERNMENT               | 354                              | --      |
| 15 | 2006                         | KEEPING HOUSE      | NAP                              | NAP                                 | YES                           | SOMEONE ELSE                     | PRIVATE                  | 796                              | --      |
| 16 | 2006                         | WORKING FULLTIME   | 40                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 19                               | --      |
| 17 | 2006                         | RETIRED            | NAP                              | NAP                                 | YES                           | SOMEONE ELSE                     | PRIVATE                  | 734                              | --      |
| 18 | 2006                         | SCHOOL             | NAP                              | NAP                                 | NO                            | NAP                              | NAP                      | NAP                              | --      |
| 19 | 2006                         | WORKING PARTTIME   | 28                               | NAP                                 | NAP                           | SOMEONE ELSE                     | PRIVATE                  | 446                              | --      |
| 20 | 2006                         | SCHOOL             | NAP                              | NAP                                 | NO                            | NAP                              | NAP                      | NAP                              | --      |
| 21 | 2006                         | WORKING FULLTIME   | 40                               | NAP                                 | NAP                           | SOMEONE ELSE                     | GOVERNMENT               | 36                               | --      |
| 22 | 2006                         | RETIRED            | NAP                              | NAP                                 | YES                           | SOMEONE ELSE                     | PRIVATE                  | 436                              | --      |