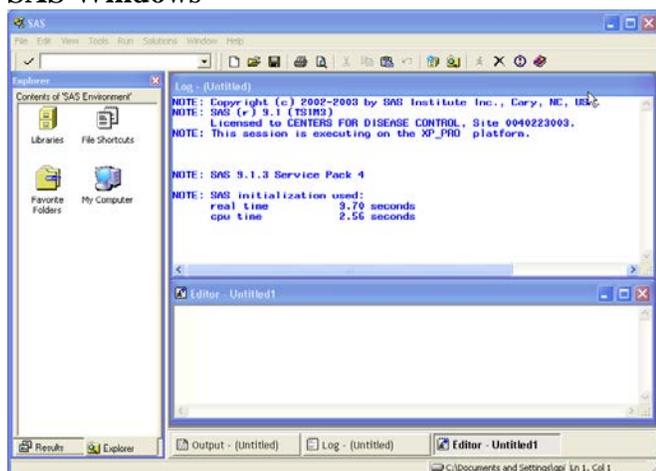


## Module 3 Introduction to SAS and SAS features

### SAS Terms

Term	Definition
Data Set	A SAS data set is a SAS software file that contains data values that are organized as a table of observations (rows) and variables (columns). A SAS data set also contains descriptive data, such as the type and length of the variables.
Data Step	A data step is a set of SAS instructions that are typically used to manipulate or create SAS data sets. Data steps are used to read existing data, modify data set contents, add observations, delete observations, write new data files, and other uses. Data steps should end with the statement <b>"run;"</b> .
Format	Instructions used by SAS to group or manipulate the way data are displayed. Formats do not change the underlying value being stored.
Function	A SAS programming method used within a data step to perform a data conversion or computation and return a value. For example, the SAS function <b>upcase()</b> converts a character variable or text string to upper case.
Observation	The SAS name for a record, or row, in a data table.
Procedure Step	A set of SAS instructions that builds reports, imports, exports and/or analyzes the data.
SAS function	A SAS tool used within a data step to perform a data conversion or computation and return a value.
SAS library	A folder or directory where data sets and other SAS files are stored. To access a SAS library, assign it a libref using a libname statement.
SAS procedure	A series of SAS instructions where the first statement starts with the key word PROC. SAS procedures typically perform an action on the data, like creating a table, graph, or producing statistics. Procedure steps normally end with the statement <b>"run;"</b> .
SAS program	The collection of SAS statements in one Program Editor window or SAS program file. SAS program files typically end with the extension <b>.sas</b> .
SAS statement	Part of programming in SAS. A SAS instruction ending in semicolon (equivalent to a sentence).
Variable	A group of values that describes something. Last name, age, and date of birth are all examples of variables. SAS variables are the building blocks of SAS data sets. SAS has two variable types, numeric and character.

### SAS Windows



Left side of Screen:

**Explorer**- the window used to view and manage SAS libraries and data sets.

**Results**- lists the output of SAS procedures that have been run like a table of contents.

Right/Main Portion of Screen

**Program Editor** - Where SAS user writes, modifies, saves, open, and runs programs. To run the SAS code in the active Program Editor window (highlighted portion or whole program), click on the run icon (running man) in the tool bar. Colors provide clues about the programming

**Blue**- SAS keywords, such as proc or data.

**Green**- programmer comments

**Red**- Error

**Black**- Valid SAS code that is not SAS reserved name, such as variable name.

**Purple**- Text strings in quotes

Log- After running a program, the log will tell you if the program was successfully run and if not what errors occurred.

Colors of the Log

**Red**- Critical errors

**Green**- Warnings, the SAS program ran but there may be sections of the program/data to review.

The log is cumulative for a given SAS session. It is recommended to clear the log from time to time, so that it does not get too crowded. To clear the log, first ensure that the log window is active (click on log window). Then, click the blank page icon.

Output- Displays results created by a SAS program.

Tool Bar- (match image with the letter below)



- A. New Page/ Clear Log
- B. Open File
- C. Save
- D. Print (highlighted section/whole window)
- E. Print Preview
- F. New Library
- G. Opens SAS as a main window
- H. Runs a SAS Program (highlighted sections)
- I. Delete (highlighted sections)
- J. Information
- K. Help

## Common Errors

While writing code in the Editor window, don't forget to use a semicolon at the end of each SAS statement. Omitting the semicolon is the most common SAS programming error. A semicolon tells SAS that the statement is complete, like punctuation at the end of a sentence. If you do not put a semicolon at the end of the statement SAS, will keep reading. This will create the equivalent of a run-on sentence, which SAS will not be able to understand. Parentheses and quotes always come in pairs. If you use a parenthesis or a quotation mark, make sure to balance it with another.