Instructions for Using PC SAS

To open the SAS software...

Locate the software under: **All Programs → SAS → SAS 9.2**.

Maximize the SAS software to take up the whole screen.

SAS User Windows

Upon opening SAS, several windows will appear. The most important windows are PROGRAM EDITOR, OUTPUT, and LOG. The OUTPUT window is probably hidden, but you can click on the **Output-(Untitled)** button toward the bottom of the screen to see it. Similarly, you can move back and forth between the windows by clicking on the respective buttons.

Uses of windows:

- PROGRAM EDITOR - Contains the SAS statements (i.e. SAS program) to perform the requested statistical analysis. Programs are submitted from this window.
- OUTPUT - Contains the output generated by the statistical procedures.
- LOG - Contains running commentary that the computer generates while running your SAS program. When things run correctly, general notes appear. When there is an error, commentary will appear in the color red. When you have trouble, you should look in the LOG window for information. Since the LOG window keeps a running history, you may want to clear it out occasionally. You can do this by having the LOG window active, right-clicking on the mouse, then choosing **edit, . . . , clear all**.

THE MOST COMMON ERROR... you forgot to put a semi-colon at the end of a line.

Programming in SAS

The following is a brief summary for opening existing program files, saving them, and submitting them for execution.

Opening an Existing Program:
From the PROGRAM EDITOR window, click on **File**,. . . ,**Open** and then choose your program file.
SAS program files have a '.sas' ending.

Entering a New Program:
To enter a new program, click on the PROGRAM EDITOR window and enter the program lines.

Editing a Program:
Editing a SAS program on PC SAS is similar to word processing.

Saving a Program File:
From the PROGRAM EDITOR window, click on **File**, and then **Save as . . . .** You may then enter the file name or click on the existing name if it is there.

Submitting a Program:
From the PROGRAM EDITOR, click on **Run** and drag the mouse down to **Submit**. To run a program, you can also just click on the 'running person' icon at the top of the screen. Any error messages will appear in the LOG window (in red). It is helpful to clear the LOG and the OUTPUT windows before submitting a program by having the respective window active, right-clicking on the mouse, then choosing **edit**, and **clear all**.

Switching Between Windows:
To switch between windows either click on the desired window if it is visible, or go to **View** from the pull-down menu and click on the desired window. You can also click on the respective buttons toward the bottom of the screen.

Printing a SAS window:
When editing a program, it's often convenient to have a hardcopy. To print a program file, have the PROGRAM EDITOR window active, then choose **file**, **print...**, and choose the desired printer location. To print in Snedecor, you need to have an account and password. You can also print from the LOG and OUTPUT windows in the same way.

Quitting PC SAS:
To quit, click on **File, . . . , Exit** from the PROGRAM EDITOR window.

An Example:

Below is a SAS program for analyzing 24 measurements of ozone concentration (ppb) in Denver, CO. Comments regarding these SAS commands are shown following the code on the next page.

```
data denver;
   input ozone @@;
   cards;
    65 21 44 47 53 26
    47 30 49 47 16 50
    49 40 34 56 47 37
    24 17 32 52 53 47
;

proc print data=denver;
run;

proc univariate data=denver plot;
   var ozone;
run;

proc sort data=denver;
   by ozone;
run;

proc print data=denver;
run;

proc chart data=denver;
   vbar ozone/midpoints=15 to 75 by 10;
run;

/*This line is a comment and will not be executed.*/

proc gchart data=denver;
   vbar ozone/midpoints=15 to 75 by 10;
run;
```

Comments about the above program:

- The data set is titled 'denver'.
- The variables in a SAS data set are listed after the *input* statement. Here, we have only one variable called 'ozone'. The '@@' tells SAS to read through a full row of data and then continue to the next line, rather than going down a column first.
- The *cards* statement tells SAS the data will be coming next.
- '*Proc*' is short for procedure and SAS has many different procedures available.
- *Proc Print* will print your SAS data set in the OUTPUT window.
- *Proc Univariate* provides summary statistics for a single variable at a time specified as var _____ . Including the *Plot* option generates a number of graphs including a histogram and a normal probability plot of the named variable.
- You can sort the data by a variable using *Proc Sort*.
  Here, the data is sorted in ascending order by the value of 'ozone'.
- *Proc chart* will produce a bar chart with the given x-axis scaling.
- You can add comments to your program by starting a line with '/*', writing the desired comments, then ending the line with '*/'.
- More aesthetically pleasing graphs can usually be created by starting the graphing command with a 'g', like *gchart* or *gplot*.

Help for SAS software

Help from the SAS Institute:

- Each SAS package contains a 'Help' library. You can open this library by clicking on the button with a '?' or by pulling down the **Help** option from the menu and choosing **Sas System Help**. This library is *very* useful when you're looking for documentation on SAS syntax.
- You can also get a lot of useful information from the by *googling* any SAS commands you're curious about.

Example of SAS Analysis of Bear Measurement Data

See home website to down load SAS files and data.