

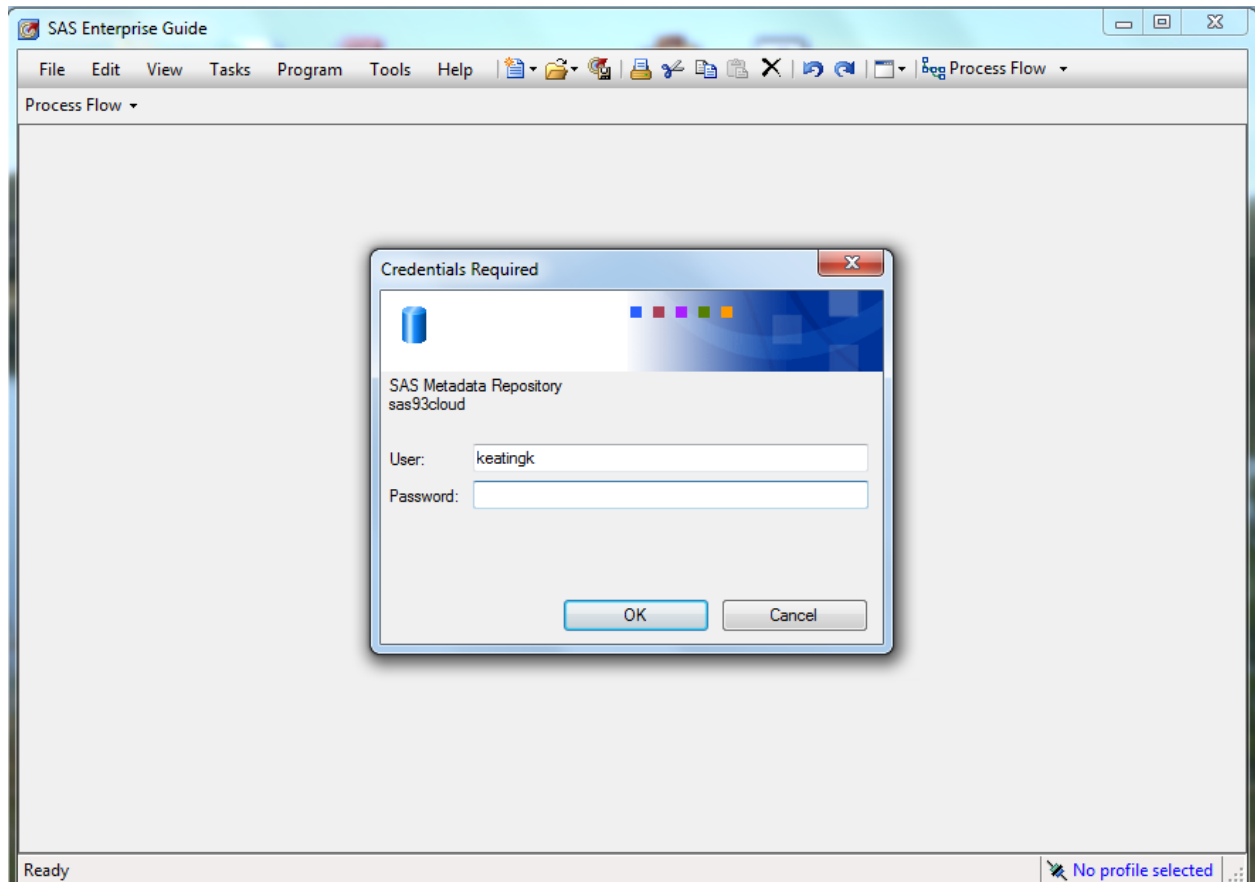
SAS OnDemand Basics

If you want to follow along and perform these activities, you should download the file SAS_basics.sas from the course website and store it on your local computer. You should also download the SAS OnDemand Enterprise Guide (instructions for this are in an earlier file).



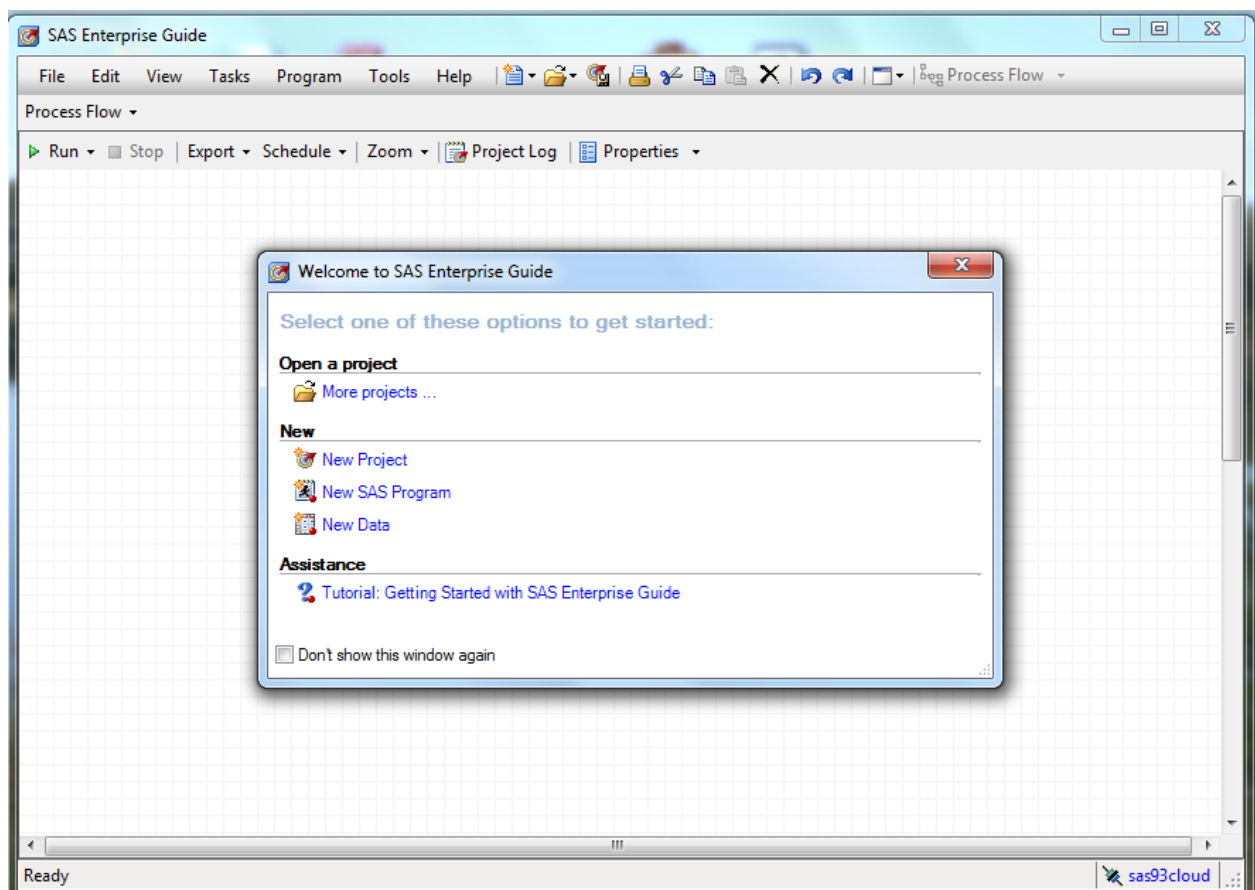
After you have downloaded the Enterprise Guide, start SAS by double-clicking the Enterprise Guide icon on your local computer.

The first screen requires a userid and password. Enter what you defined when you registered, then click OK. You will have to log in every time you start the Enterprise Guide.

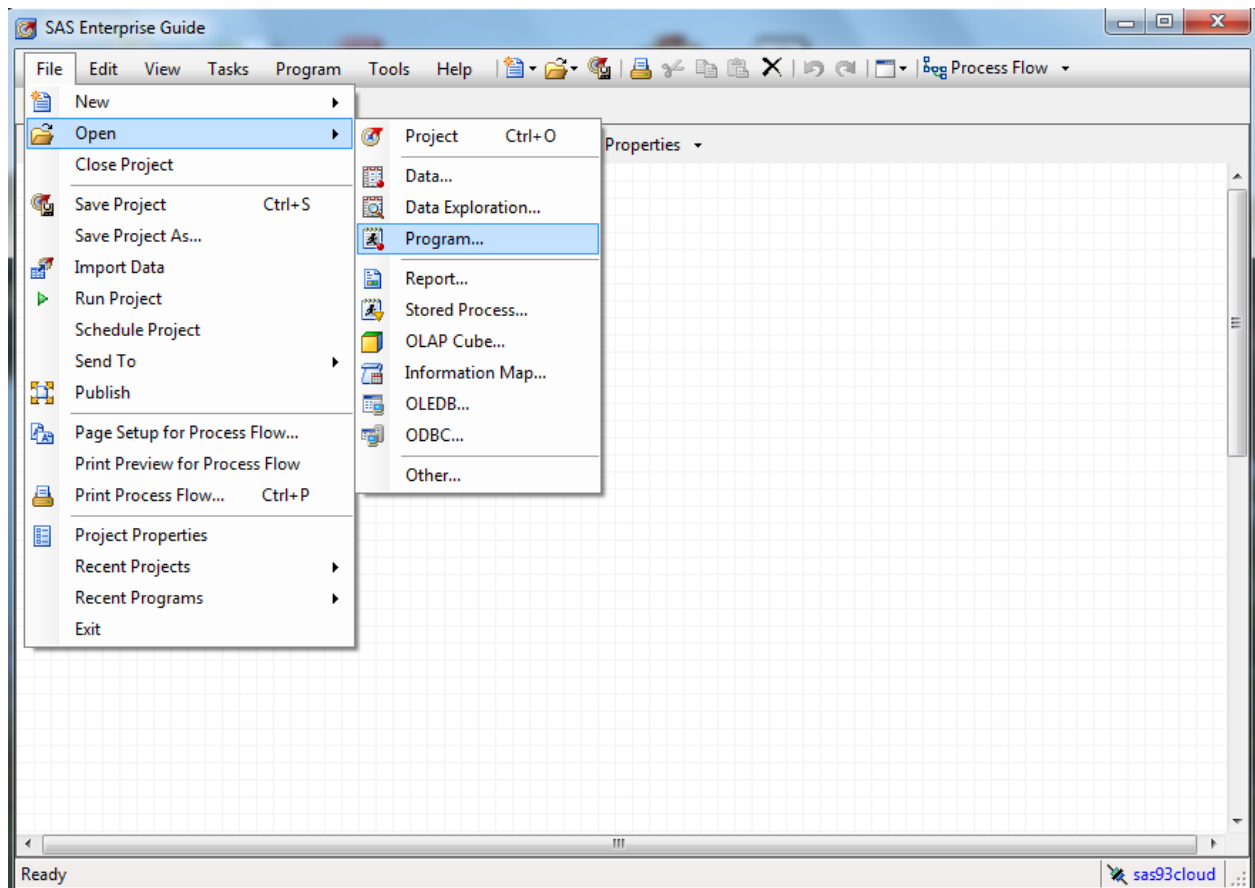


You are greeted with a welcome screen that has several options. If you want to learn more about SAS, you could open the Tutorial. We will not explore that option, since it covers more information than we will need for this course.

We will be working with programs (and not projects), so you could start a "New SAS Program" from this screen. For now, close this window (X out of it) so we can continue with the window in the back.



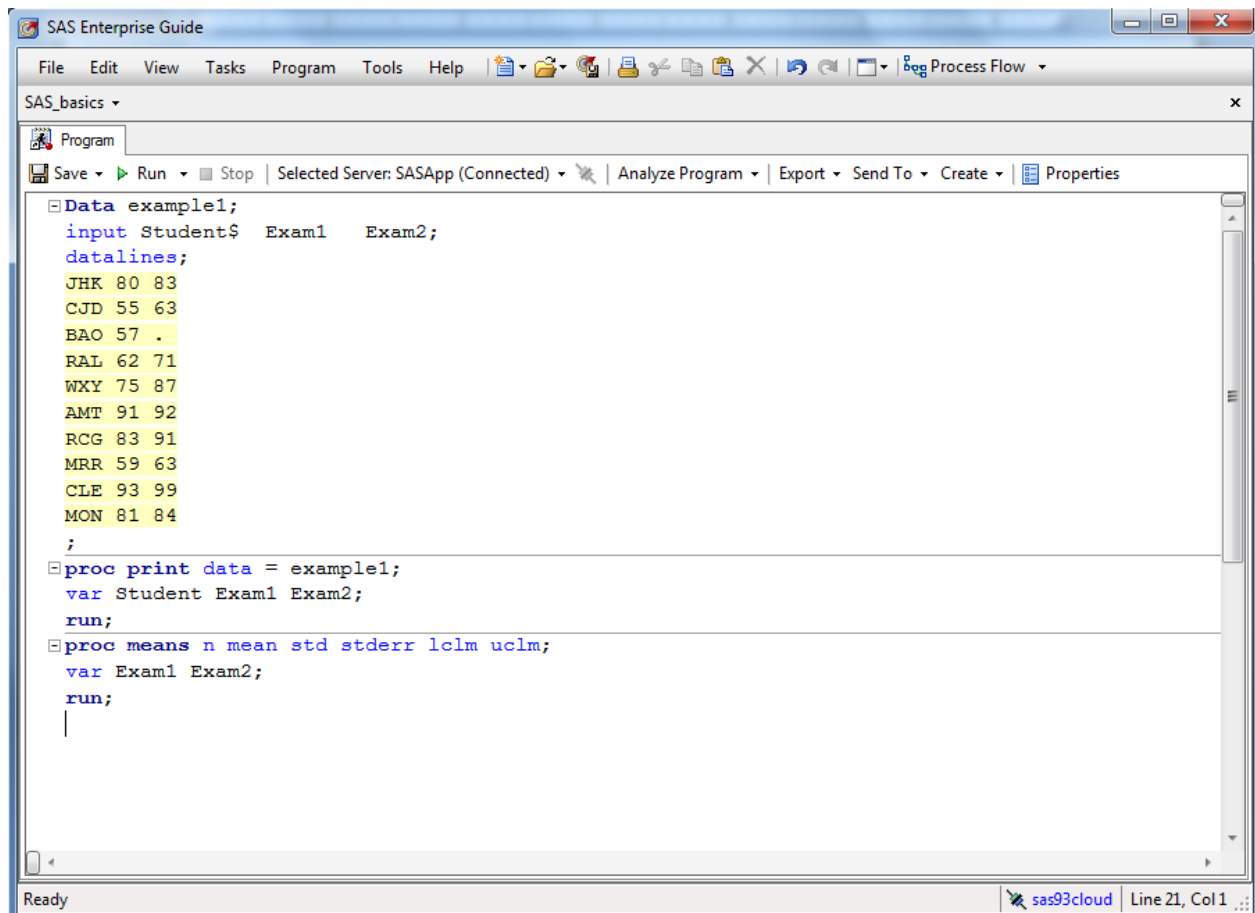
There are other ways to open an existing program or start a new one.



If you want to start a new program, you have two options. You could click 'Program' (along the top of the screen), then 'New Program'. Alternatively, you could select 'File' ... 'New' ... 'Program'.

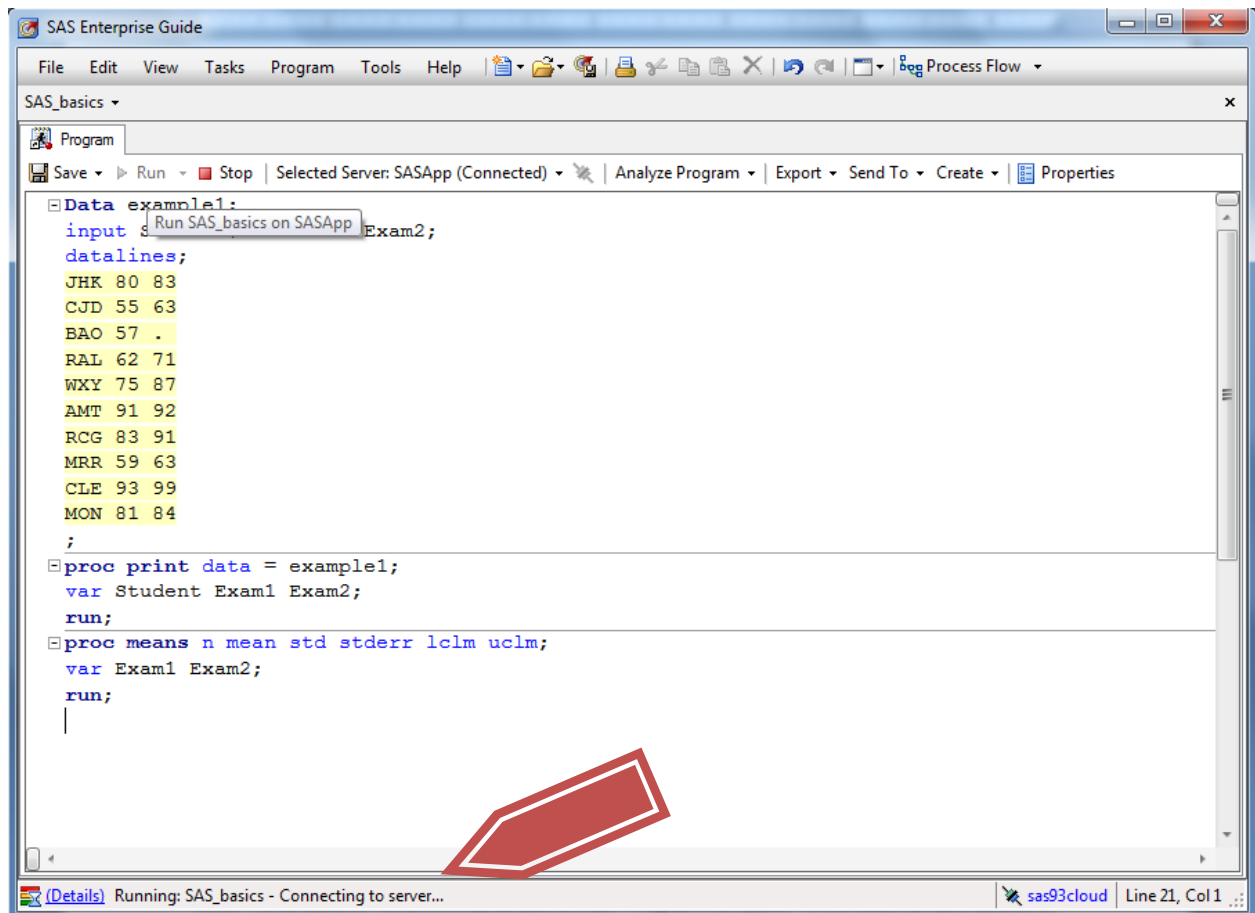
To open an existing program, select 'Program', then 'Open Program'. Alternatively, you could select 'File'... 'Open' ... 'Program'. This is what you should do now. Then navigate to where you stored the file `SAS_basics.sas` and double-click on it. This will bring the program into the SAS editor window.

(Note: If a file does not have the "sas" extension, SAS will not find it. SAS program files should always have this extension.)



The highlighting and text colors are done automatically by SAS. Yellow background indicates data, light blue indicates a (valid) option, and dark blue indicates a reserved SAS system name. Although this screenshot does not show it, there can also be green text for comments and red text for errors.

Later, I will talk about what this program does. For now, click 'Run' to execute the program.



While the programming is running, the 'Run' option along the top of the screen is inactive, and a status bar appears in the lower left. Even a small program (like this one) can take a few minutes to run "in the cloud", so be patient. When it is done, you will see "Program: Complete" in the lower left and additional tabs will appear along the top. The additional tabs contain the output of the program in various formats.

Page Break

Obs	Student	Exam1	Exam2
1	JHK	80	83
2	CJD	55	63
3	BAO	57	.
4	RAL	62	71
5	WXY	75	87
6	AMT	91	92
7	RCG	83	91
8	MRR	59	63
9	CLE	93	99
10	MON	81	84

Page Break

The MEANS Procedure

Variable	N	Mean	Std Dev	Std Error	Lower 95% CL for Mean	Upper 95% CL for Mean
Exam1	10	73.6000000	14.2766320	4.5146675	63.3871127	83.8128873
Exam2	9	81.4444444	12.9432522	4.3144174	71.4953801	91.3935088

Page Break

Ready

One popular format is the Results format, shown above. This format will also contain any graphs that are generated by your program.

Another popular format is RTF (Rich Text Format). This is a file that can be opened in Microsoft Word, Open Office, etc. There is not a screenshot of this option. This is particularly attractive option if you are going to write a report, since any SAS output (including graphs) you will need for the report will already be in a Word processing document.

23:23 Thursday, June 26, 2014 1

Obs	Student	Exam1	Exam2
1	JHK	80	83
2	CJD	55	63
3	BAO	57	.
4	RAL	62	71
5	WXY	75	87
6	AMT	91	92
7	RCG	83	91
8	MRR	59	63
9	CLE	93	99
10	MON	81	84

23:23 Thursday, June 26, 2014 2

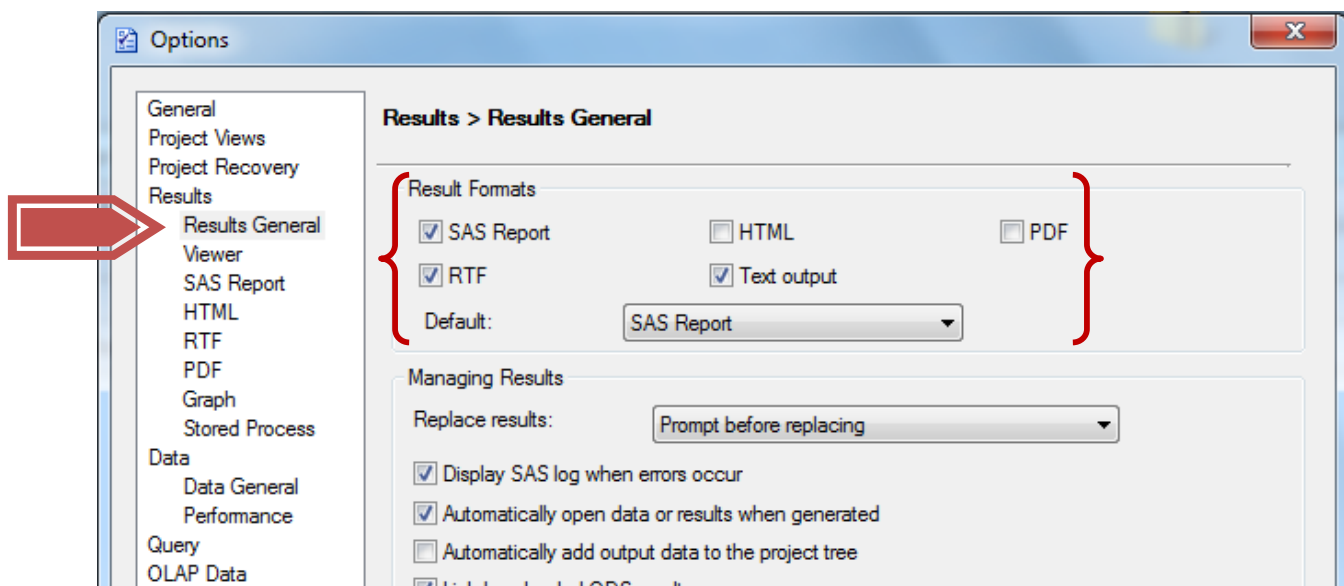
The MEANS Procedure

Variable	N	Mean	Std Dev	Std Error	Lower 95% CL for Mean	Upper 95% CL for Mean
Exam1	10	73.6000000	14.2766320	4.5146675	63.3871127	83.8128873
Exam2	9	81.4444444	12.9432522	4.3144174	71.4953801	91.3935088

Ready sas93cloud | Line1, Col1

The 'Listing' format is another popular option for displaying the results of a SAS program. It is simply a text file, with no special formatting other than headers in blue text. The major drawback to this format is that it cannot contain any graphs that your program might generate. (The current program did not generate any graphs, so the Listing output is complete.)

There are also options to create the output in HTML or PDF format. If you are interested in those, click on Tools ... Options ... Results General. Check the boxes for the formats you want SAS to generate. I do not recommend changing any of the other settings on this screen.



Some final notes about SAS OnDemand

You will be connecting to the 'cloud', so an internet connection is required. Program execution times could vary, depending how fast/slow the internet is at the moment. SAS periodically takes down the servers for routine maintenance, so waiting until the last minute to complete an assignment is not a very good idea. "The SAS server was down" is not a valid excuse for missing a deadline, unless SAS is having extended trouble with its servers (as measured in days not hours). Additional information about SAS server availability can be found at <http://support.sas.com/ondemand/server.html>.

You must log onto the SAS server every time you start the Enterprise Guide. When you are finished, you can simply close the Enterprise Guide window. There is no need to log off. If you remain inactive (not executing a program) for more than a few minutes, SAS will disconnect you from the server. Then you will need to close the Enterprise Guide and re-open it (and log in again). If you are disconnected from the server, you will still be able to view the results from the previous execution and you can still save your program to your local machine, but you will not be able to execute a program.

Now let's talk about the SAS code we just executed

<pre>Data example1; input Student\$ Exam1 Exam2; datalines;</pre>	<p>"Data" creates a data set. 'example1' is an arbitrary optional name for the data set.</p> <p><i>All SAS statements end in a semi-colon.</i></p> <p>"Input" gives names to the variables. Names begin with a letter and may contain letters, numbers, and the underline, with no spaces between. Variable names are <i>not</i> case sensitive.</p> <p>The \$ after a variable name indicates that this variable contains non-numeric data. The \$ is not part of the name.</p> <p>"Datalines" tell SAS that data come next.</p>
<pre>JHK 80 83 CJD 55 63 BAO 57 . RAL 62 71 WXY 75 87 AMT 91 92 RCG 83 91 MRR 59 63 CLE 93 99 MON 81 84 ;</pre>	<p>Spaces are the delimiters between variables. For instance, if the variable is "state", New York would have to be NY or New_York or some other designation with no spaces.</p> <p>The period (.) is the placeholder for missing values.</p>
<pre>proc print data = example1; var Student Exam1 Exam2; run;</pre>	<p>PROC stands for procedure. "proc print data=example1;" tells SAS to print the data set 'example1'.</p> <p>"var" tells SAS which variables to print.</p> <p>"run" tells SAS to execute the statements.</p>
<pre>proc means n mean std stderr lclm uclm; var Exam1 Exam2; run;</pre>	<p>This procedure computes the sample size (n), the mean, the standard deviation (std), the standard error of the mean (stderr), and the lower and upper 95% confidence interval limits for the mean (lclm and uclm).</p> <p>"var" tells SAS which variables to include in the computations.</p>

Here is the output that was generated

The data step does not produce any output.

Here is the result of proc print.

You should ALWAYS print the data the first time you read it into SAS.
Minor problems, like an extra space or a missing period, can create a nonsensical data set in SAS.

Obs	Student	Exam1	Exam2
1	JHK	80	83
2	CJD	55	63
3	BAO	57	.
4	RAL	62	71
5	WXY	75	87
6	AMT	91	92
7	RCG	83	91
8	MRR	59	63
9	CLE	93	99
10	MON	81	84

The output from proc means:

The MEANS Procedure

Variable	N	Mean	Std Dev	Std Error	Lower 95% CL for Mean	Upper 95% CL for Mean
Exam1	10	73.6000000	14.2766320	4.5146675	63.3871127	83.8128873
Exam2	9	81.4444444	12.9432522	4.3144174	71.4953801	91.3935088

A formatting note

SAS does some very strange formatting with their tables. If things start looking too weird, consider switching to the Listing output. It's not quite as pretty, but it is sometimes easier to work with. If you want to stay with tables (in either Results or RTF format), you might want to consider changing the font to Calibri and reducing the font size. This is what I have done with the tables above.

Please DO NOT submit illegible tables as part of a homework assignment.

If I can't read it, I can't grade it!