Wajdi Ben Saad
ESSAI, Sept ,2015

About This course

- 10 weeks ~ 8 classes to attend
- (VERY) Project oriented
- Pair project assignments
- Evaluation based on homework assignments

To Do for the first 2 weeks

- Class Emails (preferably Gmail)

Mine is :
wajdi.ben.saad@gmail.com

First Challenge !

- Installing SAS 9.2 or 9.3 on your machines
(There is a portable version you can use if nothing else works)
- Do the first assignment sent to you by Email

PS: I Can't / Wont help you with that!

What is SAS?

- Began as a statistical package
- Also allows users to:
  - Store data
  - Manipulate data
  - Create reports
    - PDF
    - Excel
    - HTML
    - XML
    - RTF / Word
    - Etc. Etc. Etc.

What is SAS?

- Also allows users to:
  - Create graphs
  - Create maps
  - Send e-mails
  - Create web applications
  - Create iPhone Apps
  - Access R
  - Schedule regularly run reports
  - Etc. Etc. Etc.

SAS Display Manager

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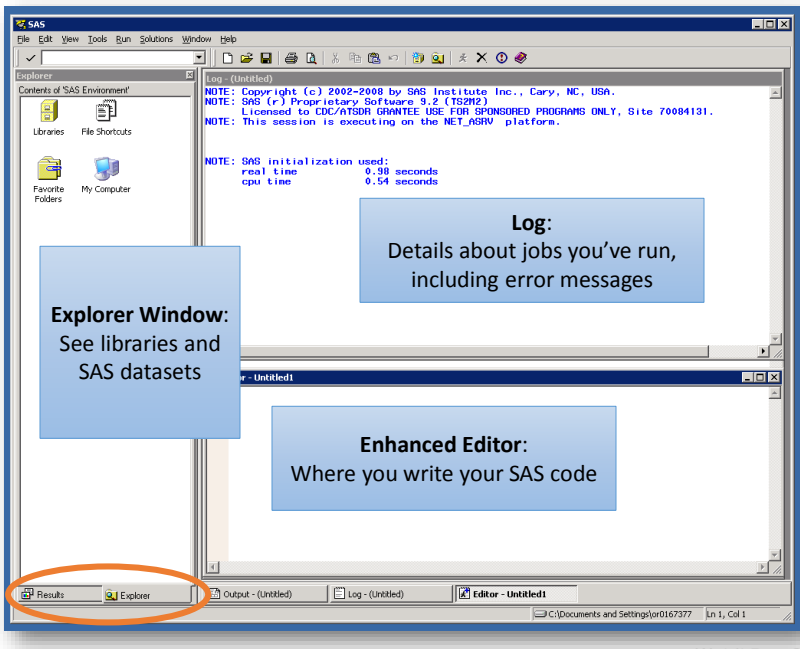

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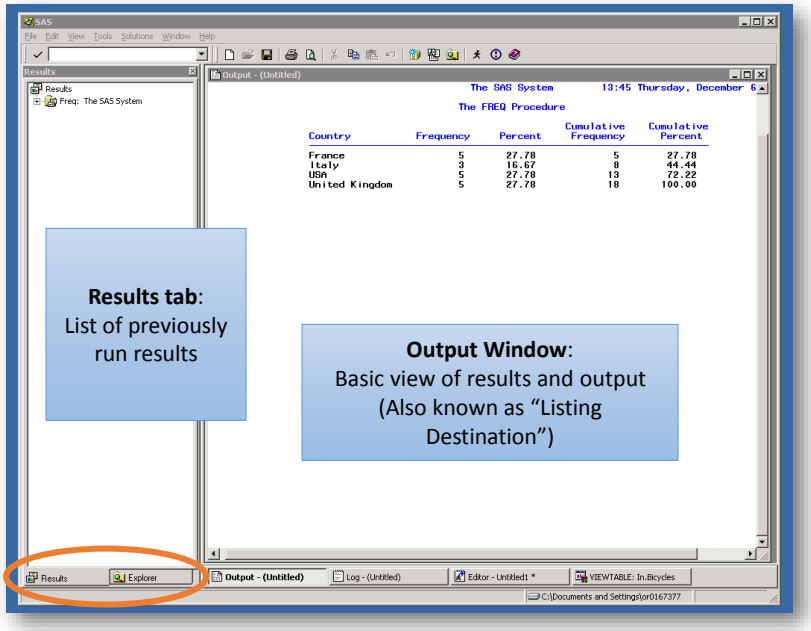

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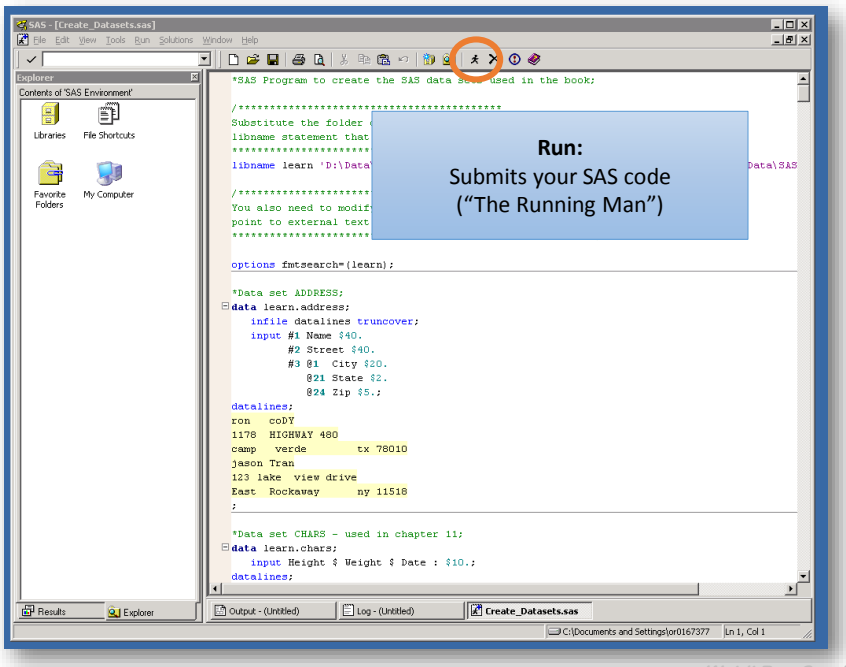

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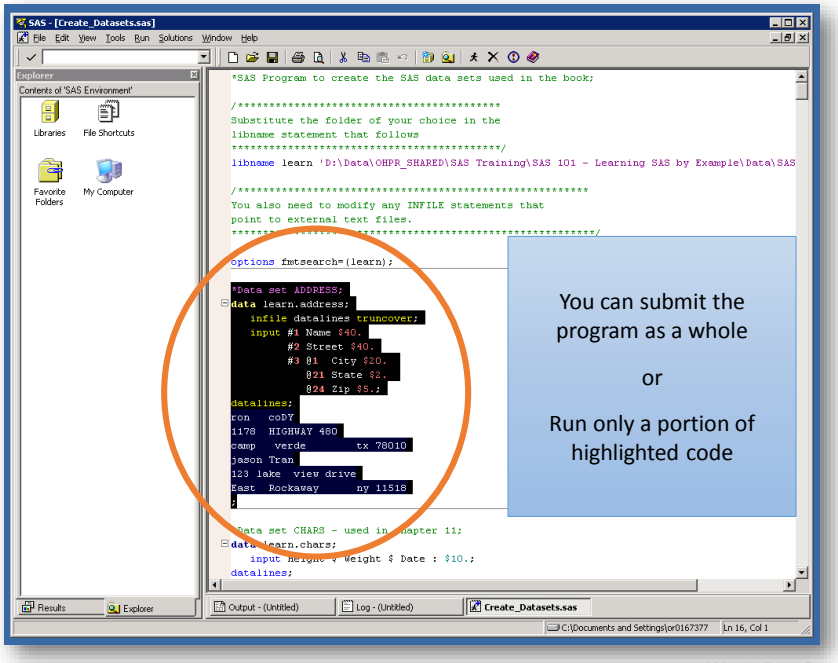
SAS - [Create_Datasets.sas]
File Edit View Tools Run Solutions Window Help
Explorer
Contents of 'SAS Environment'
Libraries
File Shortcuts
Favorite Folders
My Computer
*SAS Program to create the SAS data sets used in the book;
Substitute the folder of your choice in the
libname statement that follows
libname learn 'D:\Data\OHPR_SHARED\SAS Training\SAS 101 - Learning SAS by Example\Data\SAS
You also need to modify any INFILE statements that
point to external text files.
options fmtsearch=(learn);
*Data set ADDRESS;
data learn.address;
infile datalines truncover;
input #1 Name $40.
#2 Street $40.
#3 @1 City $20.
@21 State $2.
@24 Zip $5.;
datalines;
ron coDY
1178 HIGHWAY 480
camp verde tx 78010
jason Tran
123 lake view drive
East Rockaway ny 11518
;
*Data set CHARS - used in Chapter 11;
data learn.chars;
input Height Weight $ Date : $10.;
datalines;
Results
Explorer
Output - (Untitled)
Log - (Untitled)
Create_Datasets.sas
C:\Documents and Settings\or0167377
Ln 16, Col 1
You can submit the program as a whole
or
Run only a portion of highlighted code
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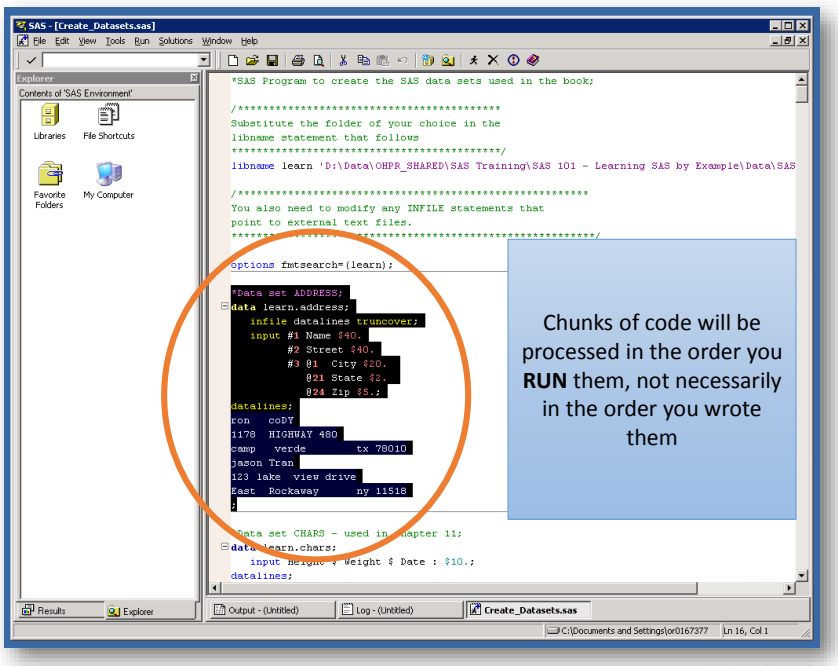
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C:\Documents and Settings\or0167377
Ln 16, Col 1
Chunks of code will be processed in the order you **RUN** them, not necessarily in the order you wrote them
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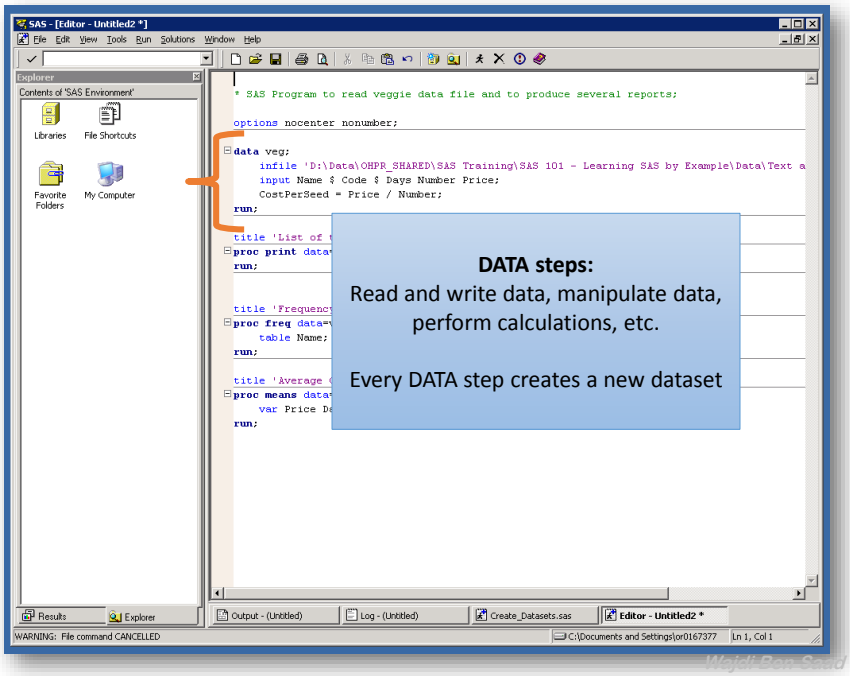
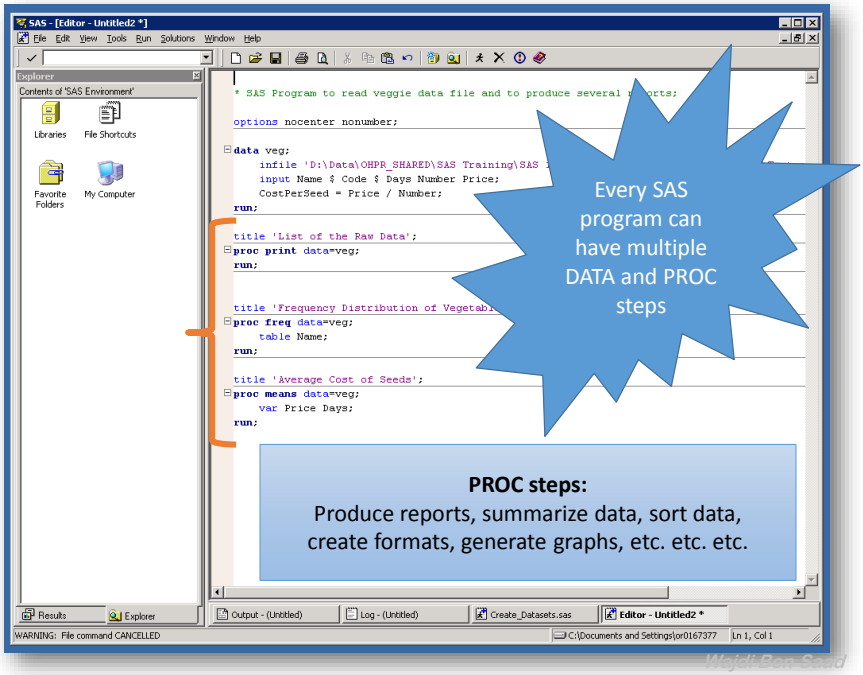
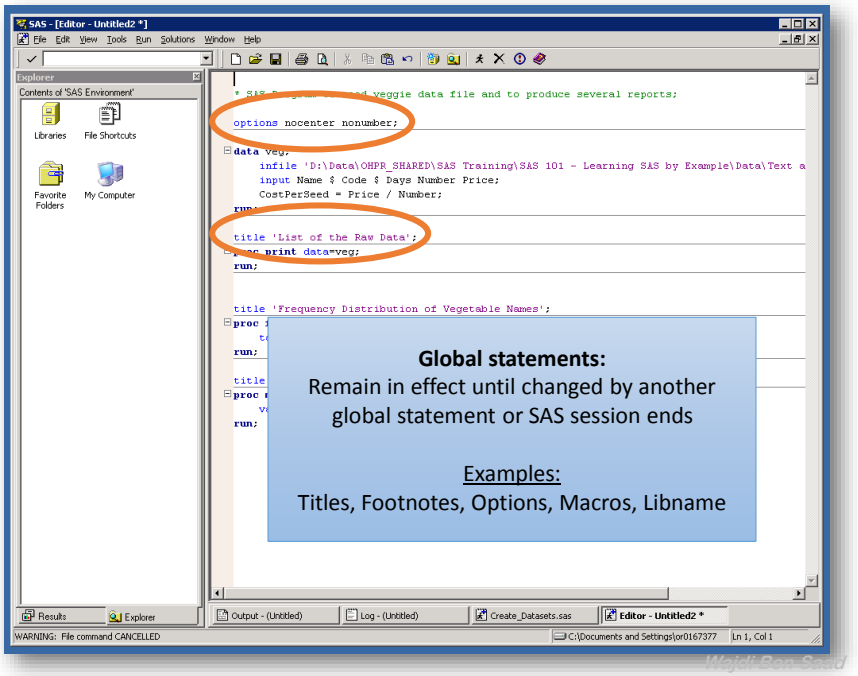
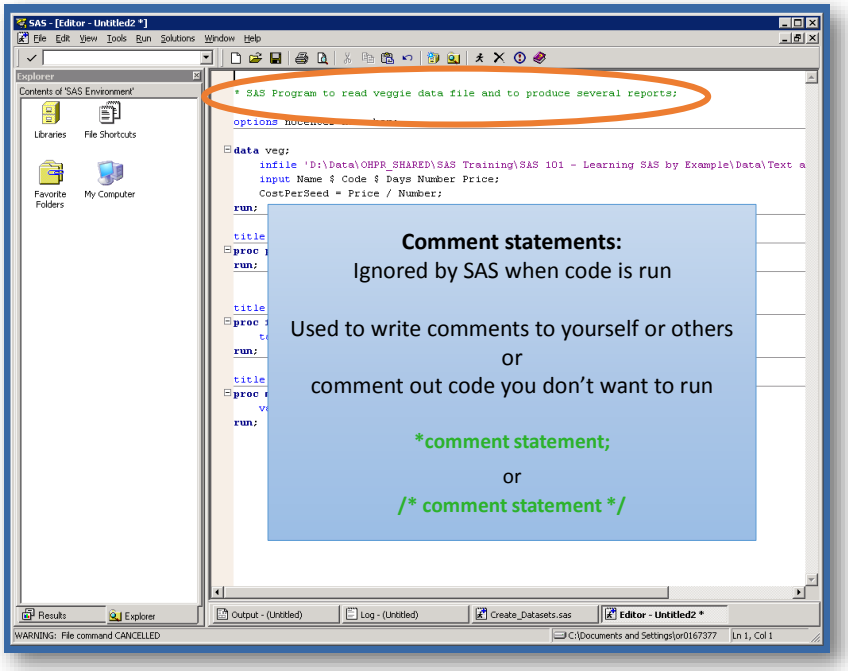
The elements of a SAS program




Every SAS program can have multiple DATA and PROC steps
PROC steps:
Produce reports, summarize data, sort data, create formats, generate graphs, etc. etc. etc.


Global statements:
Remain in effect until changed by another global statement or SAS session ends
Examples:
Titles, Footnotes, Options, Macros, Libname



Programming in SAS

- SAS is generally forgiving
  - Code can be written on a single line or multiple lines
  - Code and variable names not case sensitive
  - Even accepts some misspellings
  - Fi The Doo
- Semicolons are super important
- Colors of Enhanced Editor
- Always check your log!!!
- Often many ways to do the same thing

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DATA step examples

DATA step examples

```
data demographic;
    infile 'D:\Data\OHPR_SHARED\SAS Training\SAS 101 - Learning SAS by Example\Data\Text and CSV\mydata.txt';
    input Gender $ Age Height Weight;
run;

data newdemo; set demographic;
BMI = (Weigth / 2.2) / (Height*.0254)**2;
run;
```

DATA step examples

```
data demographic;
    infile 'D:\Data\OHPR_SHARED\SAS Training\SAS 101 - Learning SAS by Example\Data\Text and CSV\mydata.txt';
    input Gender $ Age Height Weight;
run;

data newdemo; set demographic;
BMI = (Weigth / 2.2) / (Height*.0254)**2;
run;
```

DATA demographic

- "DATA demographic" creates a dataset called "Demographic"
- Infile statement reads the text file with the data
- Input statement tells SAS what to name the new variables. $ sign after "Gender" indicates that this is a character variable. The remaining variables are numeric.

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DATA step examples

```
data demographic;
    infile 'D:\Data\OHPR_SHARED\SAS Training\SAS 101 - Learning SAS by Example\Data\Text and CSV\mydata.txt';
    input Gender $ Age Height Weight;
run;

data newdemo; set demographic;
BMI = (Weigth / 2.2) / (Height*.0254)**2;
run;
```

DATA newdemo

- "DATA newdemo" creates a dataset called "newdemo"
- "SET demographic" references the previous dataset "demographic" as the basis for the new dataset
- "BMI =" creates a new variable called "BMI" that is calculated as shown. This is called an *assignment statement*.

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PROC step examples

PROC step examples

```
title 'Gender Frequencies';
proc freq data=newdemo;
    table Gender;
run;

title 'Summary Statistics';
proc means data=newdemo;
    var Age Height Weight BMI;
run;
```

PROC step examples

```
title 'Gender Frequencies';
proc freq data=newdemo;
    table Gender;
run;

title 'Summary Statistics';
proc means data=newdemo;
    var Age Height Weight BMI;
run;
```

PROC freq

- ❑ Creates a basic frequency table with:
  - ❑ Frequency
  - ❑ Percent
  - ❑ Cumulative Frequency
  - ❑ Cumulative Percent
- ❑ "DATA=newdemo" references the newdemo dataset
- ❑ TABLE statement indicates which variable(s) to include
- ❑ Can use multiple variables and even create cross-tab tables

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PROC step examples

```
title 'Gender Frequencies';
proc freq data=newdemo;
    table Gender;
run;

title 'Summary Statistics';
proc means data=newdemo;
    var Age Height Weight BMI;
run;
```

PROC means

- ❑ Creates a basic summary table with:
  - ❑ N
  - ❑ Mean
  - ❑ Std Dev
  - ❑ Minimum
  - ❑ Maximum
- ❑ Can specify which statistics to use in table
- ❑ "DATA=newdemo" references the newdemo dataset
- ❑ VAR statement indicates which variable(s) to include

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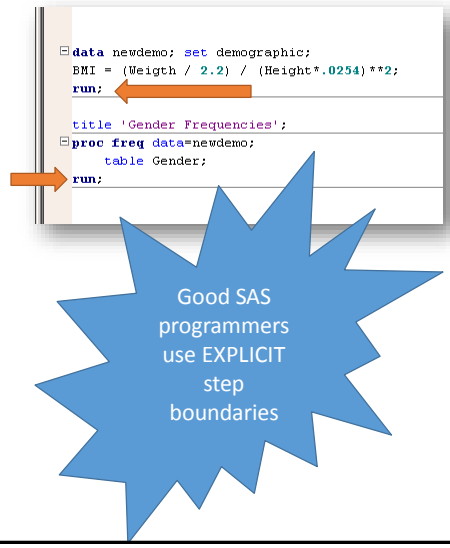
Other notes



Step boundaries:
Each step is executed when a step boundary is encountered

Explicit step boundary: RUN or QUIT statement

Implicit step boundary: Beginning of a new PROC or DATA step

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Other notes

Referencing datasets:
Most procedures and DATA steps reference an existing dataset

Explicit dataset reference: DATA= or SET statement

Implicit dataset reference: If not explicitly referenced, SAS will use the last referenced dataset

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