

# Data Analysis using SPSS

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## ■ SPSS Environment

### ---- Outlines of SPSS Basics

# Features of SPSS

- Originally developed for the people in Social Science Areas, therefore, no heavy programming background required
- Designed as User Friendly and has Pull Down Menus to Execute Statistical Commands
- Ability to do Data Management & Manipulations
- Ability to Store Analysis Programs & Produce Reports/Graphs

# Statistics Package for the Social Science (SPSS)

Starting SPSS: Double Click on SPSS on desktop or  
Program → SPSS.

Opening a SPSS file: File → Open

## MENUS AND TOOLBARS

### Data Editor

Various pull-down menus appear at the top of the Data Editor window. The Data Editor menu items (with some of the uses of the menu) are:

# Statistics Package for the Social Science (SPSS)

## **MENUS AND TOOLBARS**

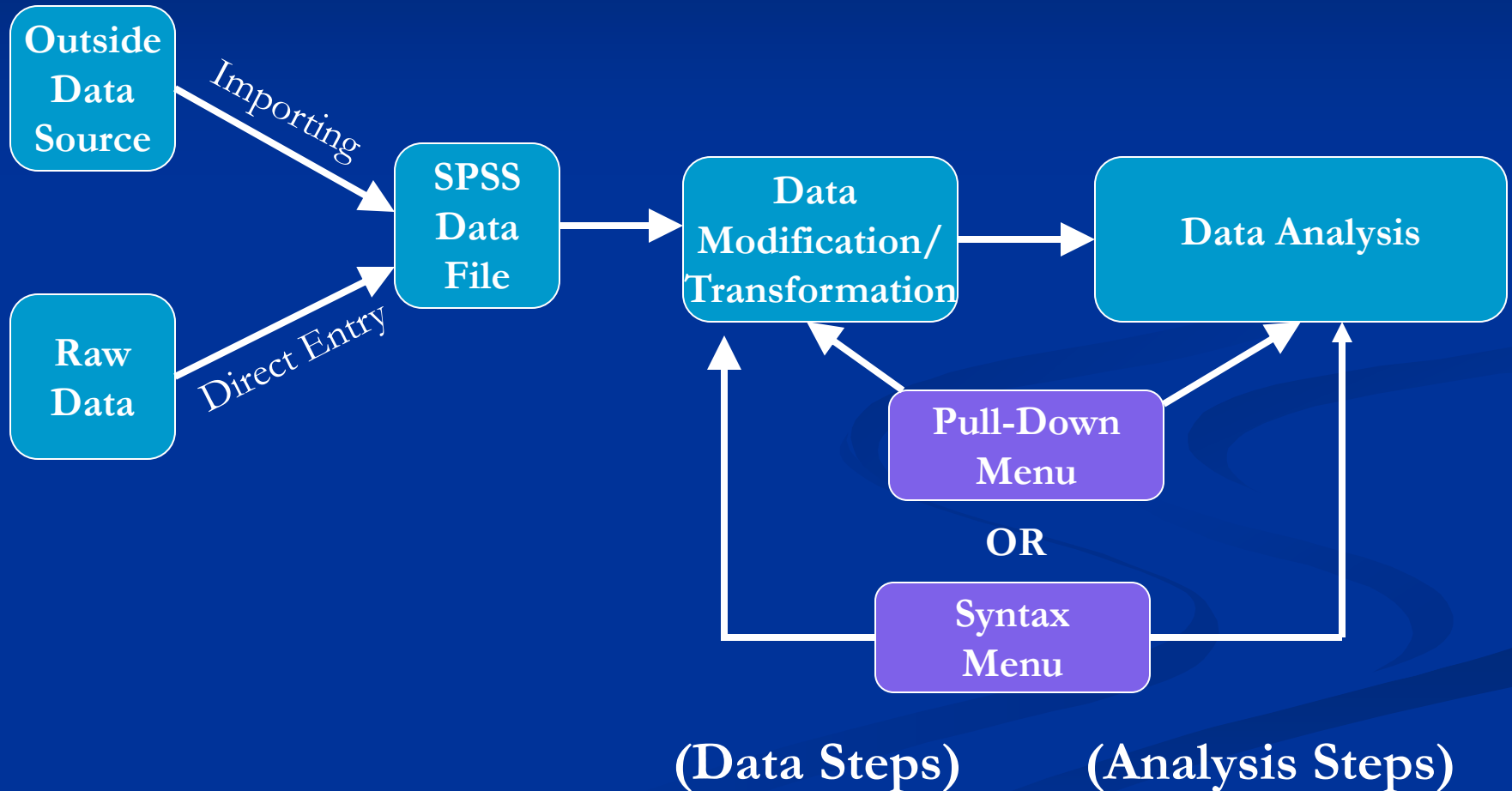
|           |  |
|-----------|--|
| FILE      | used to open and save data files   |
| EDIT      | used to copy and paste data values; used to find data in a file; insert variables and cases; OPTIONS allows the user to set general preferences as well as the setup for the Navigator, Charts, etc. |
| VIEW      | user can change toolbars; value labels can be seen in cells instead of data values   |
| DATA      | select, sort or weight cases; merge files  |
| TRANSFORM | Compute new variables, recode variables, etc.  |

# Statistics Package for the Social Science (SPSS)

## ■ MENUS AND TOOLBARS

|         |   |
|---------|---|
| ANALYZE | perform various statistical procedures  |
| GRAPHS  | create different graphs and charts, etc |
| HELP    | to access SPSS Help information         |

# SPSS Program Flow







# Variable View Window

## Data Definition Site

Untitled1 [DataSet0] - PASW Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

|   | Name  | Type                      | Width  | Decimals      | Label                | Values                 | Missing                   |
|---|---|---------------------------|--------|---------------|----------------------|------------------------|---------------------------|
| 1 | 64 Characters Max, No space Between Beg letter, @, #, or \$ | Numeric, String, & Others | Length | # of Decimals | Variable Description | Value Code Description | Missing value Description |
| 2 |   |                           |        |               |                      |                        |                           |
| 3 |   |                           |        |               |                      |                        |                           |
| 4 |   |                           |        |               |                      |                        |                           |
| 5 |   |                           |        |               |                      |                        |                           |
| 6 |   |                           |        |               |                      |                        |                           |
| 7 |   |                           |        |               |                      |                        |                           |
| 8 |   |                           |        |               |                      |                        |                           |
| 9 |   |                           |        |               |                      |                        |                           |

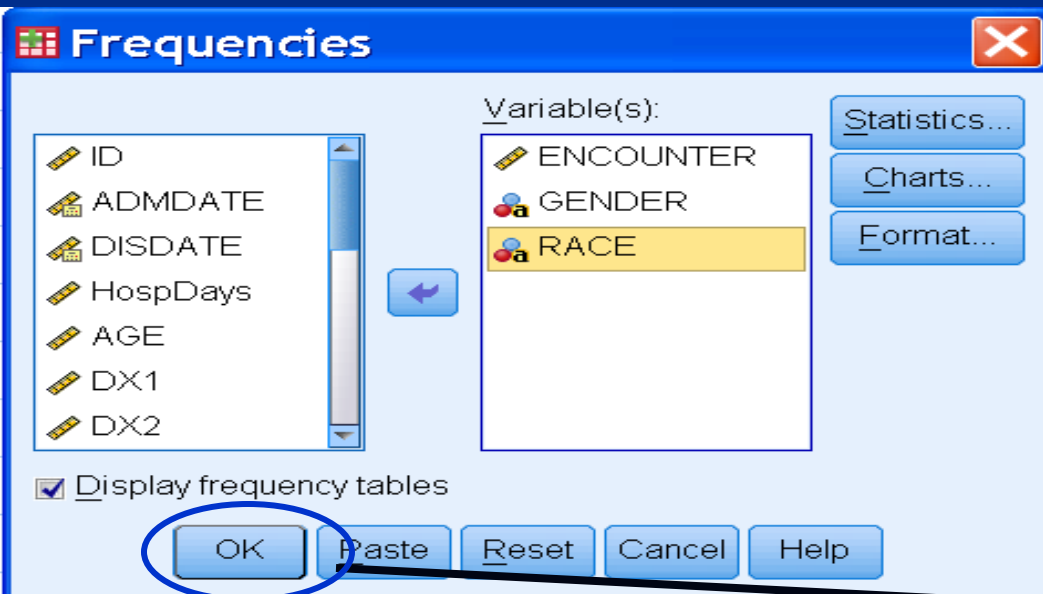
Click here to see this view

Data View Variable View

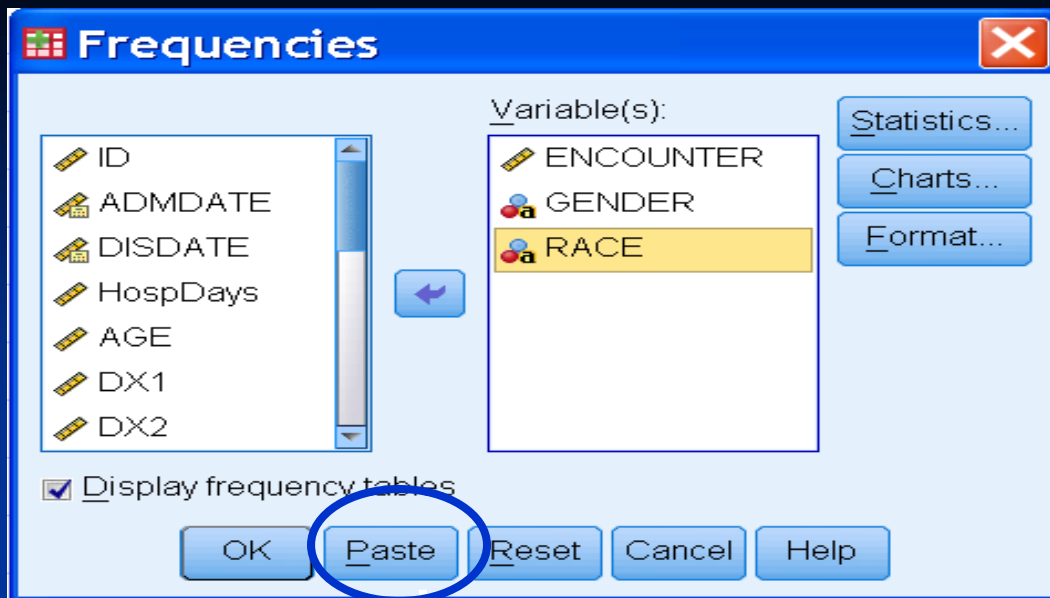
PASW Statistics Processor is ready

OK

button

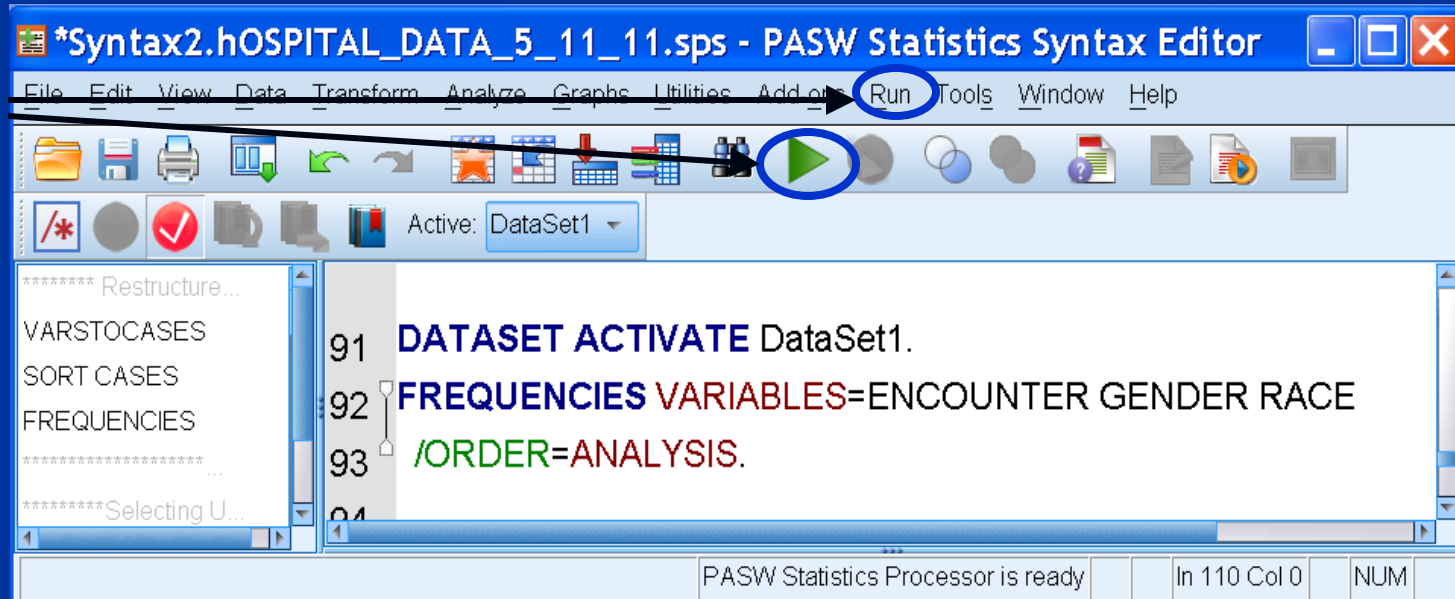


OK -  
results/action  
will be executed



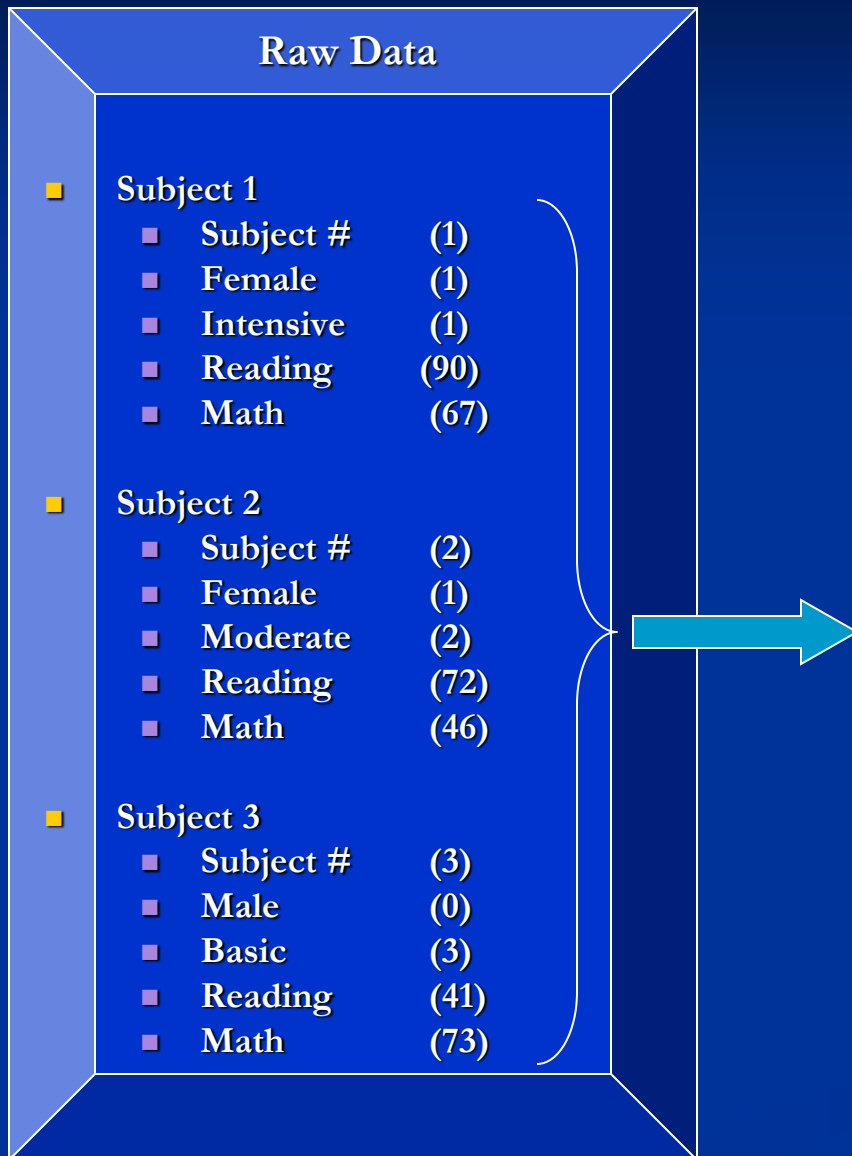
1. Hit Paste to obtain Syntax Window

2. Run Syntax to obtain the results in the Output Window



<Syntax File>

# Example - School Data



# School Data Variable View

\*SPSS\_School\_Data1.sav [DataSet1] - PASW Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help



|   | Name    | Type    | Width | Decimals | Label            | Values          |
|---|---------|---------|-------|----------|------------------|-----------------|
| 1 | ID      | Numeric | 8     | 0        | Student ID       | None            |
| 2 | GENDER  | Numeric | 8     | 0        | Gender           | {0, Male}...    |
| 3 | PROGRAM | Numeric | 8     | 0        | Program Type     | {1, Intensiv... |
| 4 | READING | Numeric | 8     | 2        | Reading Test ... | None            |
| 5 | MATH    | Numeric | 8     | 2        | Math Test Score  | None            |

**Value Labels**

Value Labels

Value:

Label:

0 = "Male"  
1 = "Female"

Add Change Remove

Spelling...

OK Cancel Help

Data View **Variable View**

PASW Statistics Processor is ready

**Variable View Activated**

# School Data

## Completed Dataset – Data View

\*SPSS\_School\_Data.sav [DataSet1] - PASW Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

Visible: 12 of 12 Variables

|    | ID | GENDER | GRADE | RACE | INCOME | SCHTYPE | PROGRAM | READING | WRITING | MATH  | SCIENCE | SOCSTUDY |
|----|----|--------|-------|------|--------|---------|---------|---------|---------|-------|---------|----------|
| 1  | 1  | 1      | 10    | 1    | 3      | pub     | 1       | 90.00   | 41.00   | 67.00 | 38.00   | 77.00    |
| 2  | 2  | 1      | 10    | 2    | 3      | pub     | 2       | 72.00   | 57.00   | 46.00 | 60.00   | 58.00    |
| 3  | 3  | 0      | 10    | 1    | 3      | pub     | 3       | 41.00   | 60.00   | 73.00 | 75.00   | 76.00    |
| 4  | 4  | 1      | 9     | 3    | 2      | priv    | 1       | 57.00   | 57.00   | 46.00 | 56.00   | 58.00    |
| 5  | 5  | 1      | 9     | 3    | 2      | priv    | 2       | 77.00   | 39.00   | 38.00 | 46.00   | 41.00    |
| 6  | 6  | 0      | 10    | 3    | 1      | pub     | 3       | 90.00   | 48.00   | 50.00 | 50.00   | 41.00    |
| 7  | 7  | 0      | 10    | 2    | 1      | pub     | 2       | 37.00   | 49.00   | 56.00 | 36.00   | 66.00    |
| 8  | 8  | 0      | 10    | 2    | 1      | pub     | 1       | 70.00   | 44.00   | 75.00 | 64.00   | 66.00    |
| 9  | 9  | 0      | 10    | 2    | 2      | priv    | 1       | 90.00   | 70.00   | 68.00 | 75.00   | 68.00    |
| 10 | 10 | 1      | 9     | 1    | 2      | priv    | 2       | 37.00   | 70.00   | 64.00 | 75.00   | 70.00    |
| 11 | 11 | 0      | 9     | 3    | 2      | priv    | 3       | 51.00   | 35.00   | 50.00 | 60.00   | 67.00    |
| 12 | 12 | 0      | 10    | 4    | 2      | pub     | 2       | 56.00   | 70.00   | 23.00 | 56.00   | 66.00    |
| 13 | 13 | 1      | 10    | 2    | 1      | pub     | 2       | 50.00   | 35.00   | 55.00 | 39.00   | 34.00    |
| 14 | 14 | 1      | 10    | 1    | 2      | pub     | 1       | 91.00   | 85.00   | 92.00 | 86.00   | 76.00    |
| 15 | 15 | 0      | 10    | 1    | 1      | priv    | 1       | 72.00   | 61.00   | 71.00 | 73.00   | 76.00    |
| 16 | 16 | 0      | 9     | 1    | 2      | pub     | 2       | 34.00   | 34.00   | 50.00 | 37.00   | 37.00    |
| 17 | 17 | 0      | 9     | 1    | 2      | priv    | 1       | 85.00   | 79.00   | 90.00 | 83.00   | 71.00    |

# School Data

## Completed Dataset – Variable View

School\_Data.sav [DataSet4] - PASW Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

|    | Name          | Type    | Width | Decimals | Label              | Values          | Missing | Columns | Align   | Measure |
|----|---------------|---------|-------|----------|--------------------|-----------------|---------|---------|---------|---------|
| 1  | ID            | Numeric | 8     | 0        | Student ID         | None            | None    | 7       | ≡ Right | Nominal |
| 2  | GENDER        | Numeric | 8     | 0        | Gender             | {0, Male}...    | None    | 6       | ≡ Right | Nominal |
| 3  | GRADE         | Numeric | 8     | 0        | Grade              | None            | None    | 5       | ≡ Right | Nominal |
| 4  | RACE          | Numeric | 8     | 0        | Race               | {1, White}...   | None    | 4       | ≡ Right | Nominal |
| 5  | INCOME        | Numeric | 8     | 0        | Income Level       | {1, Low}...     | None    | 5       | ≡ Right | Ordinal |
| 6  | SCHTYPE       | String  | 7     | 0        | School Type        | None            | None    | 7       | ≡ Left  | Nominal |
| 7  | PROGRAM       | Numeric | 8     | 0        | Program Type       | {1, Intensiv... | None    | 7       | ≡ Right | Ordinal |
| 8  | READING       | Numeric | 8     | 2        | Reading Test S...  | None            | None    | 8       | ≡ Right | Scale   |
| 9  | WRITING       | Numeric | 8     | 2        | Writing Test S...  | None            | None    | 6       | ≡ Right | Scale   |
| 10 | MATH          | Numeric | 8     | 2        | Math Test Score    | None            | None    | 5       | ≡ Right | Scale   |
| 11 | SCIENCE       | Numeric | 8     | 2        | Science Test S...  | None            | None    | 6       | ≡ Right | Scale   |
| 12 | SOCSTUDY      | Numeric | 8     | 2        | Social Studies ... | None            | None    | 8       | ≡ Right | Scale   |
| 13 | ReadGrade     | Numeric | 8     | 2        | Reading Grade      | {1.00, F}...    | None    | 11      | ≡ Right | Scale   |
| 14 | WriteGrade    | Numeric | 8     | 2        | Writing Grade      | {1.00, F}...    | None    | 12      | ≡ Right | Scale   |
| 15 | MathGrade     | Numeric | 8     | 2        | Math Grade         | {1.00, F}...    | None    | 11      | ≡ Right | Scale   |
| 16 | ScienceGra... | Numeric | 8     | 2        | Science Grade      | {1.00, F}...    | None    | 14      | ≡ Right | Scale   |
| 17 | SocstudyGr... | Numeric | 8     | 2        | Social Study G...  | {1.00, F}...    | None    | 15      | ≡ Right | Scale   |
| 18 | AveScore      | Numeric | 8     | 2        | Average Test S...  | None            | None    | 10      | ≡ Right | Scale   |

Data View Variable View

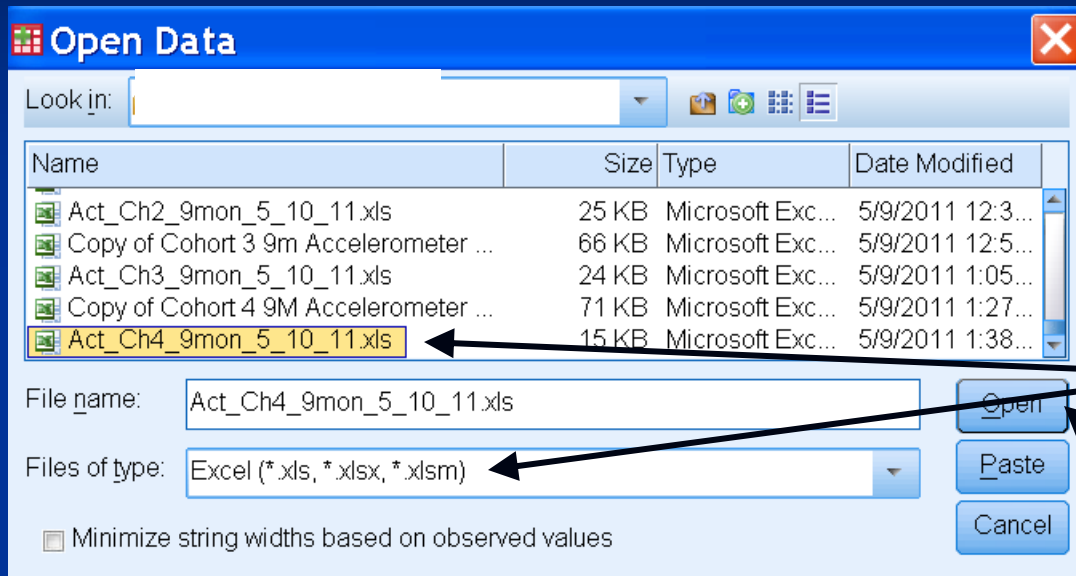
# Importing data from an Excel spreadsheet

Data from an Excel spreadsheet can be imported into SPSS as follows:

1. In SPSS, click on FILE ⇒ OPEN ⇒ DATA. The OPEN DATA FILE Dialog Box will appear.
2. Locate the file of interest: Use the "Look In" pull-down list to identify the folder containing the Excel file of interest
3. From the FILE TYPE pull down menu select EXCEL (\*.xls).
4. Click on the file name of interest and click on OPEN or simply double-click on the file name.
5. Keep the box checked that reads "Read variable names from the first row of data". This presumes that the first row of the Excel data file contains variable names in the first row. [If the data resided in a different worksheet in the Excel file, this would need to be entered.]
6. Click on OK. The Excel data file will now appear in the SPSS Data Editor.



# Importing Excel Data file to SPSS



1. Open the SPSS Data file

2. Go to File Menu

3. Click "Read Text Data"

4. Click Files of type to Excel & choose Excel file

5. Hit Open

6. Check Worksheet #, & Hit OK

# School Data

## Completed Dataset – Data View

\*SPSS\_School\_Data.sav [DataSet1] - PASW Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Add-ons Window Help

Visible: 12 of 12 Variables

|    | ID | GENDER | GRADE | RACE | INCOME | SCHTYPE | PROGRAM | READING | WRITING | MATH  | SCIENCE | SOCSTUDY |
|----|----|--------|-------|------|--------|---------|---------|---------|---------|-------|---------|----------|
| 1  | 1  | 1      | 10    | 1    | 3      | pub     | 1       | 90.00   | 41.00   | 67.00 | 38.00   | 77.00    |
| 2  | 2  | 1      | 10    | 2    | 3      | pub     | 2       | 72.00   | 57.00   | 46.00 | 60.00   | 58.00    |
| 3  | 3  | 0      | 10    | 1    | 3      | pub     | 3       | 41.00   | 60.00   | 73.00 | 75.00   | 76.00    |
| 4  | 4  | 1      | 9     | 3    | 2      | priv    | 1       | 57.00   | 57.00   | 46.00 | 56.00   | 58.00    |
| 5  | 5  | 1      | 9     | 3    | 2      | priv    | 2       | 77.00   | 39.00   | 38.00 | 46.00   | 41.00    |
| 6  | 6  | 0      | 10    | 3    | 1      | pub     | 3       | 90.00   | 48.00   | 50.00 | 50.00   | 41.00    |
| 7  | 7  | 0      | 10    | 2    | 1      | pub     | 2       | 37.00   | 49.00   | 56.00 | 36.00   | 66.00    |
| 8  | 8  | 0      | 10    | 2    | 1      | pub     | 1       | 70.00   | 44.00   | 75.00 | 64.00   | 66.00    |
| 9  | 9  | 0      | 10    | 2    | 2      | priv    | 1       | 90.00   | 70.00   | 68.00 | 75.00   | 68.00    |
| 10 | 10 | 1      | 9     | 1    | 2      | priv    | 2       | 37.00   | 70.00   | 64.00 | 75.00   | 70.00    |
| 11 | 11 | 0      | 9     | 3    | 2      | priv    | 3       | 51.00   | 35.00   | 50.00 | 60.00   | 67.00    |
| 12 | 12 | 0      | 10    | 4    | 2      | pub     | 2       | 56.00   | 70.00   | 23.00 | 56.00   | 66.00    |
| 13 | 13 | 1      | 10    | 2    | 1      | pub     | 2       | 50.00   | 35.00   | 55.00 | 39.00   | 34.00    |
| 14 | 14 | 1      | 10    | 1    | 2      | pub     | 1       | 91.00   | 85.00   | 92.00 | 86.00   | 76.00    |
| 15 | 15 | 0      | 10    | 1    | 1      | priv    | 1       | 72.00   | 61.00   | 71.00 | 73.00   | 76.00    |
| 16 | 16 | 0      | 9     | 1    | 2      | pub     | 2       | 34.00   | 34.00   | 50.00 | 37.00   | 37.00    |
| 17 | 17 | 0      | 9     | 1    | 2      | priv    | 1       | 85.00   | 79.00   | 90.00 | 83.00   | 71.00    |