



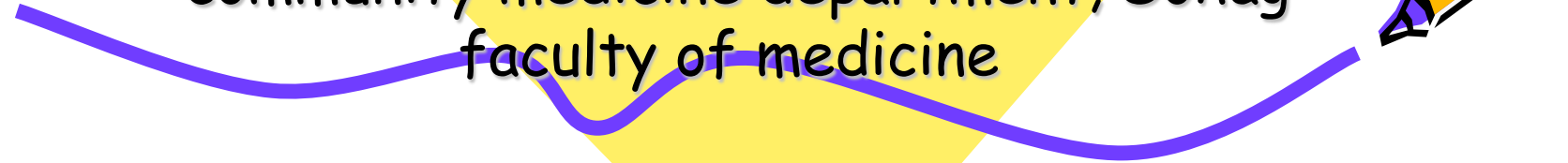
Introduction to SPSS

By

Dr. Fouad Metry

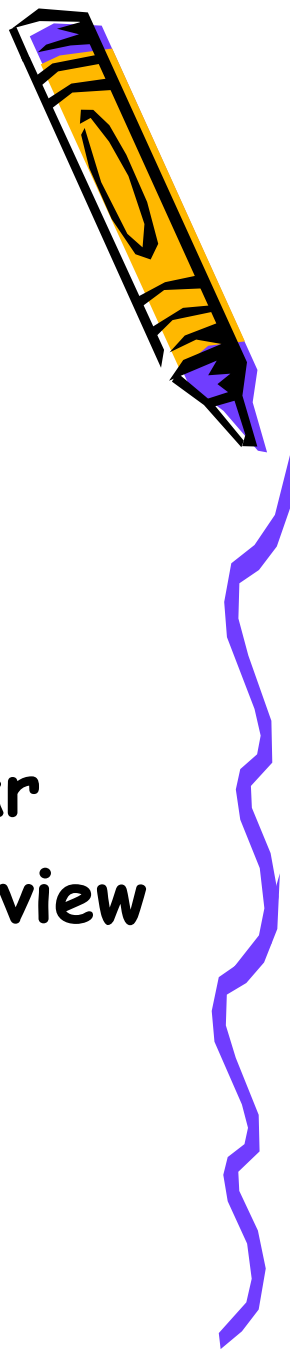
PhD, QUB, Belfast, UK

Professor and head of department
community medicine department, Sohag
faculty of medicine

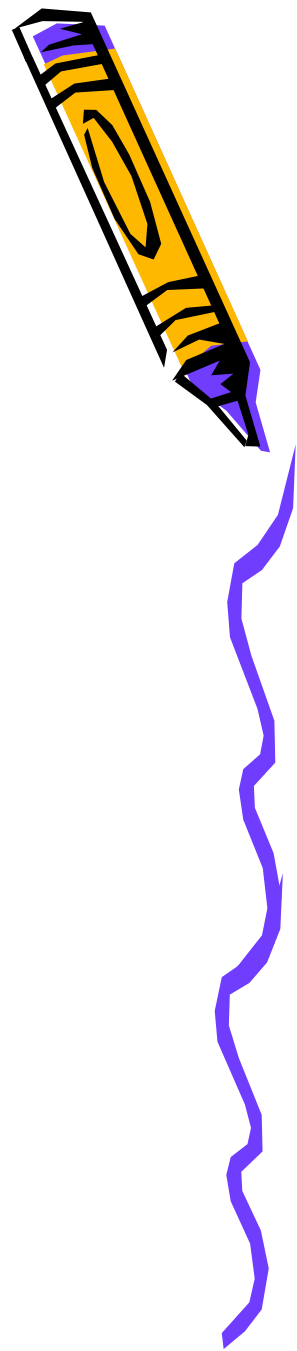


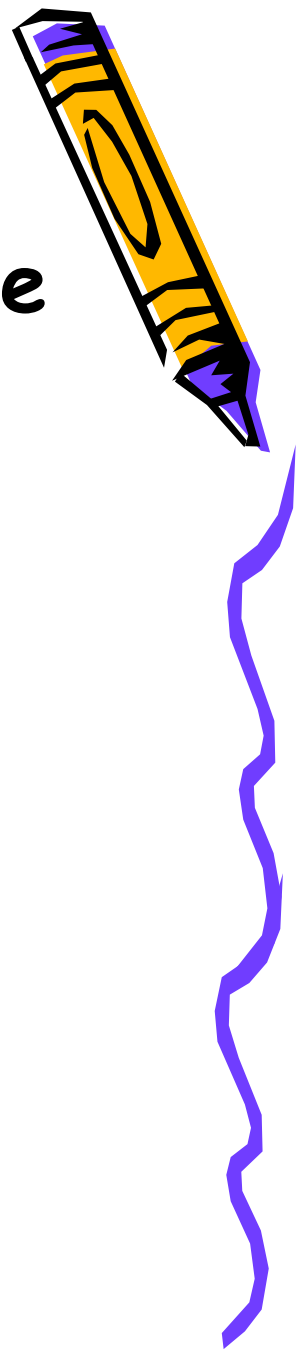
ILOS

- By the end of this lecture, you should be able to
 - Know how to start SPSS
 - Identify SPSS menu bar
 - Identify SPSS Data editor tool bar
 - Recognize the data editor and its view
i.e. Data View & Variable View
 - Know how to Exit SPSS



- Open Spss file
- Use frequency procedure
- Show The Output Viewer
- Use cross tab procedure
- Print your output file
- Save your output file
- Open SPSS file
- Open Excel file



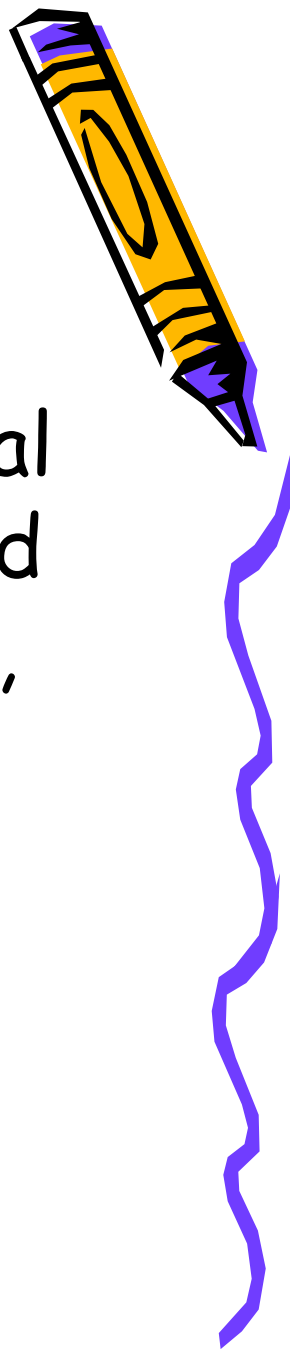


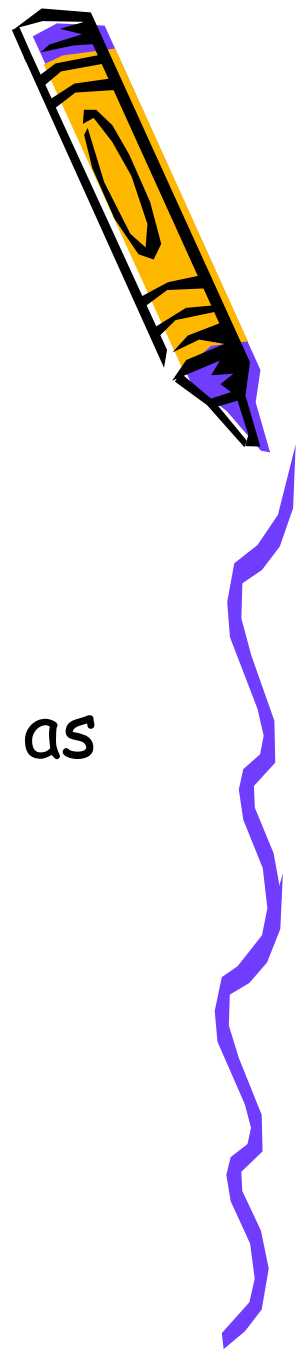
- Creating your own SPSS Data File Using the Data Editor
 - Defining the variables
 - entering the Data
 - Saving the Data
- Adding Labels
 - variable labels and
 - value labels.



What is SPSS

- SPSS (statistical package for social science) is a software package used for conducting statistical analyses, manipulating data, and generating tables and graphs that summarize data.





- Statistical analyses range from
 - basic descriptive statistics , such as averages and frequencies,
- To
 - advanced inferential statistics, such as regression models and analysis of variance.

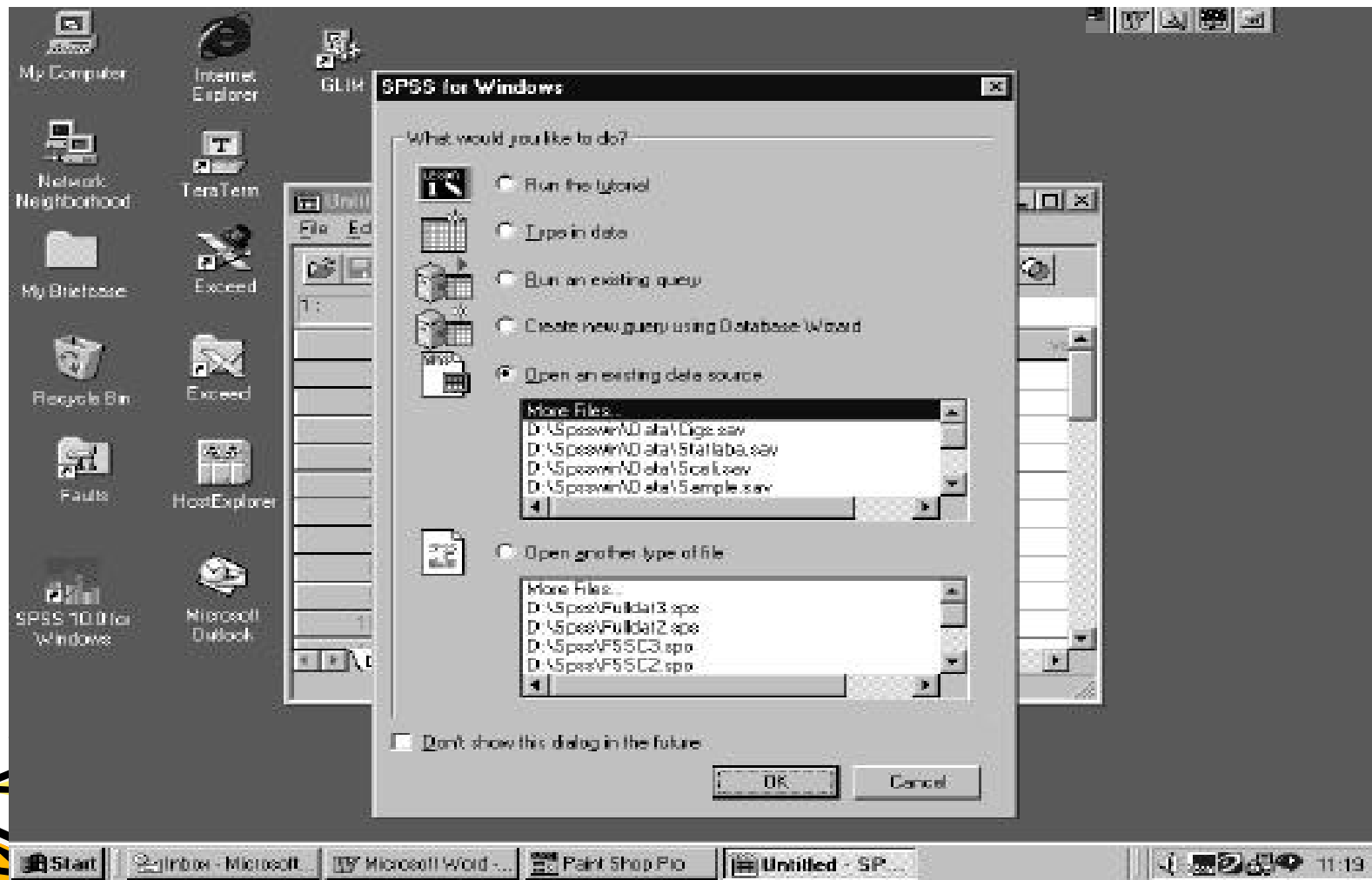


Starting SPSS

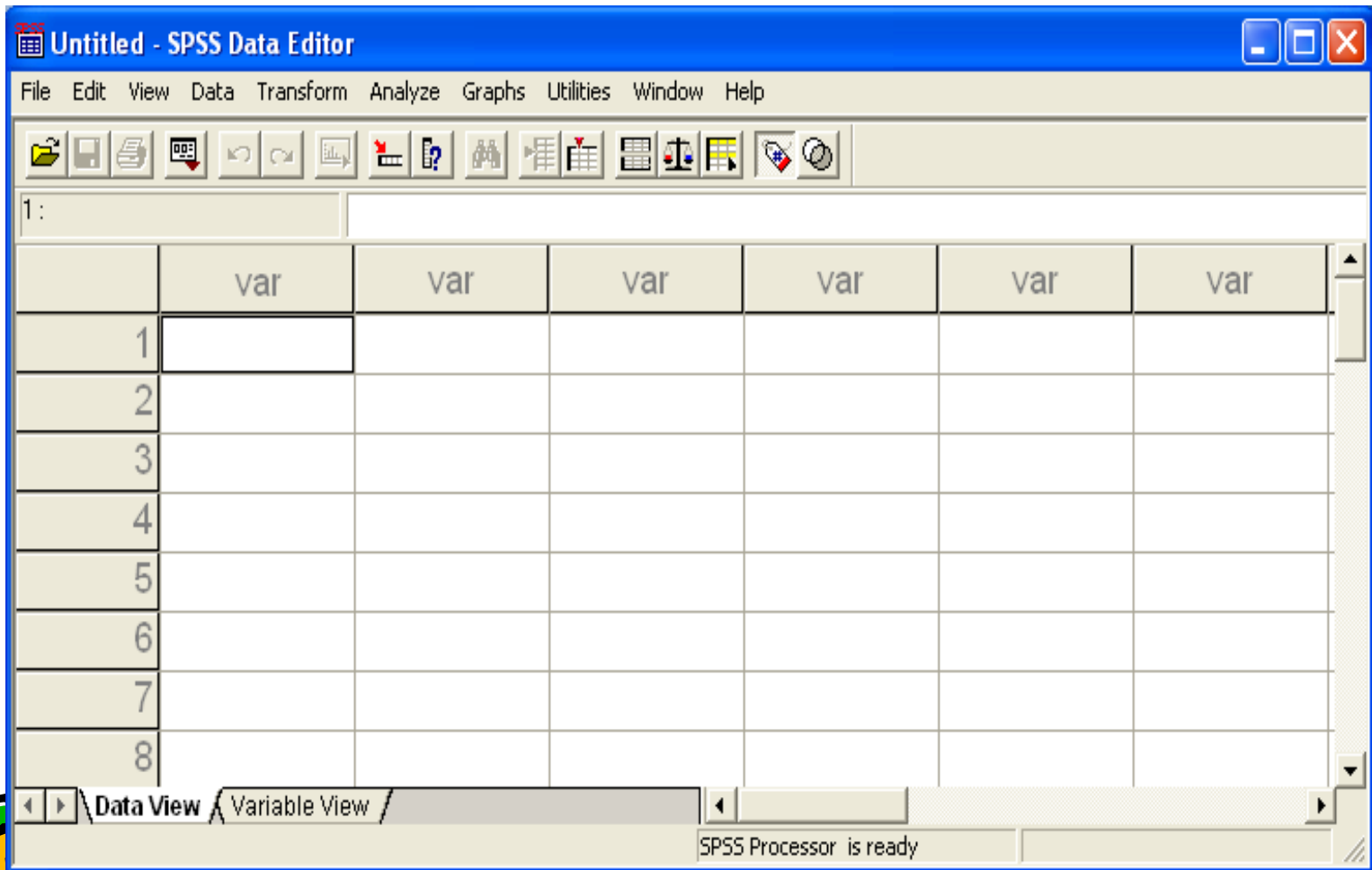
To start SPSS, go to the *Start* icon under Windows. You should find an SPSS icon under the *Programs* menu item. You can also start SPSS by double-clicking on an SPSS file.



The opening screen should appear as



SPSS will appears like this



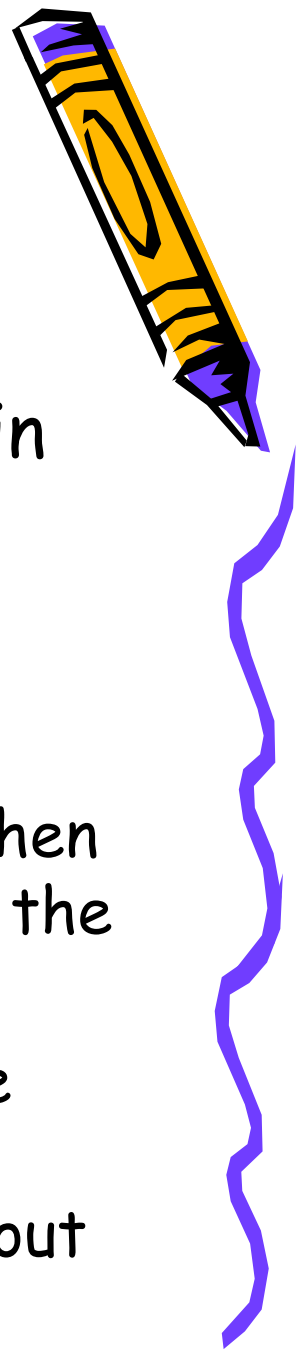
SPSS consists of different windows, the most frequently used are

- The data editor is the window that is open at start-up and is used to enter and store data in a spreadsheet format.
- The Output Viewer opens automatically when you execute an analysis or create a graph using a dialog box or command syntax to execute a procedure. The Output Viewer contains the results of all statistical analyses and graphical displays of data.

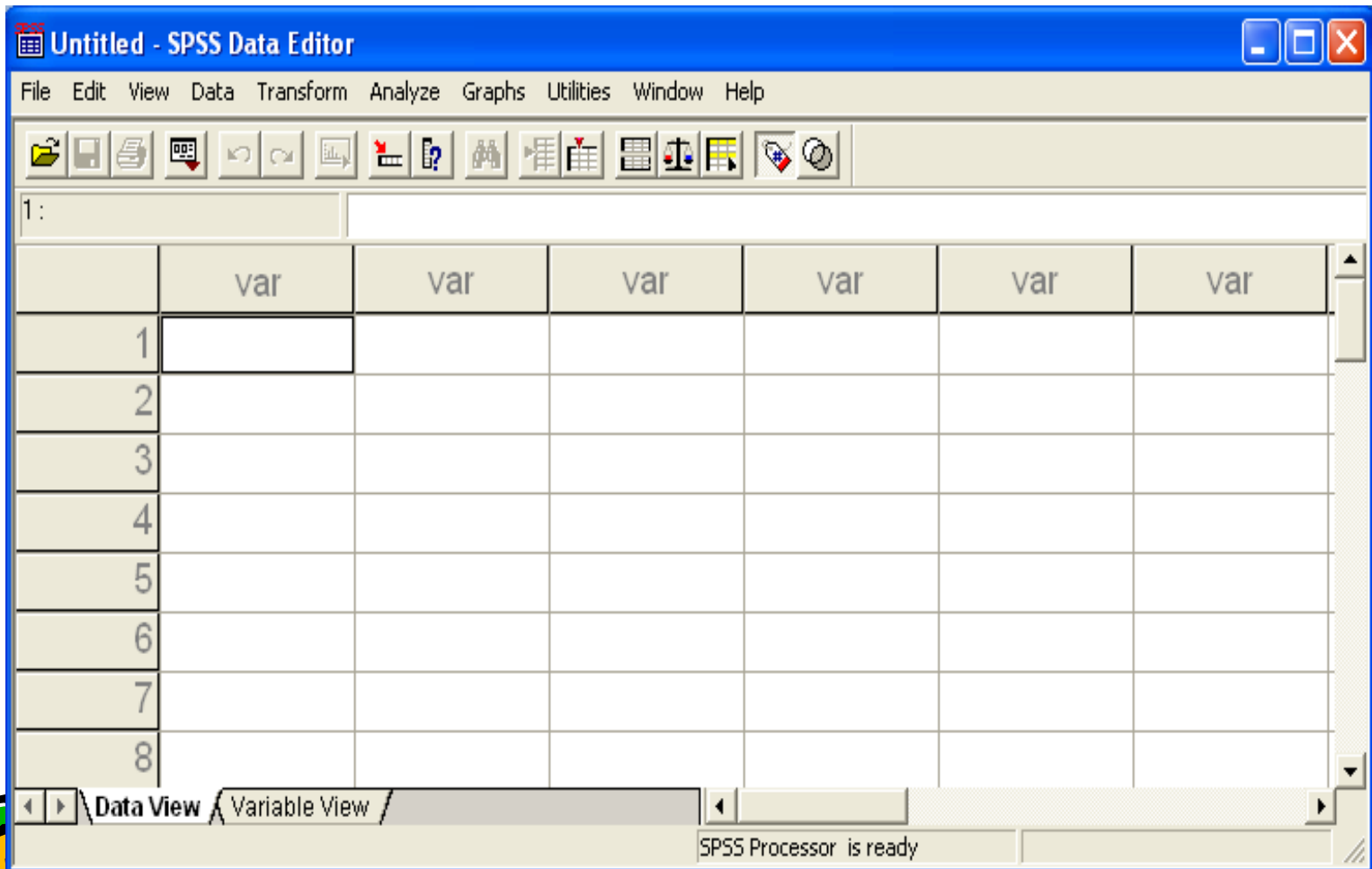


The Data Editor

- The Data Editor window displays the contents of the working dataset. It is arranged in a spreadsheet format that contains variables in columns and cases in rows.
- There are two sheets in the window.
 - The *Data View* is the sheet that is visible when you first open the Data Editor and contains the data.
 - *Variable View* is similar in appearance to the data view, it does not actually contain data. Instead, this sheet contains information about the dataset that is stored with the dataset



This is the **SPSS Data Editor Window**, it contains a menu bar, a tool bar (buttons) and a blank table

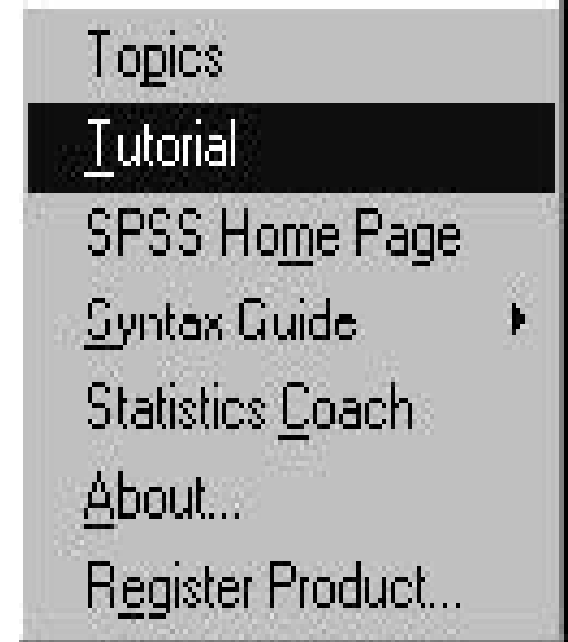


The Menu bar

File Edit View Data Transform Analyze Graphs Utilities Window Help

The menu bar lists 10 pull down menus, when you click on one of these menus, SPSS displays a pull down menu listing the available commands

- E.g. if you click on Help menu.
- The Help menu will appear as



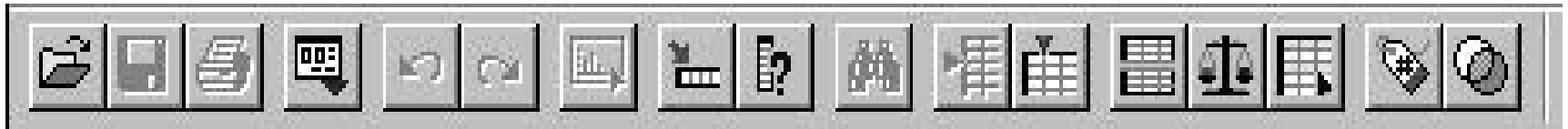
- Click on the Tutorial, and take a stroll through it.



The Toolbar



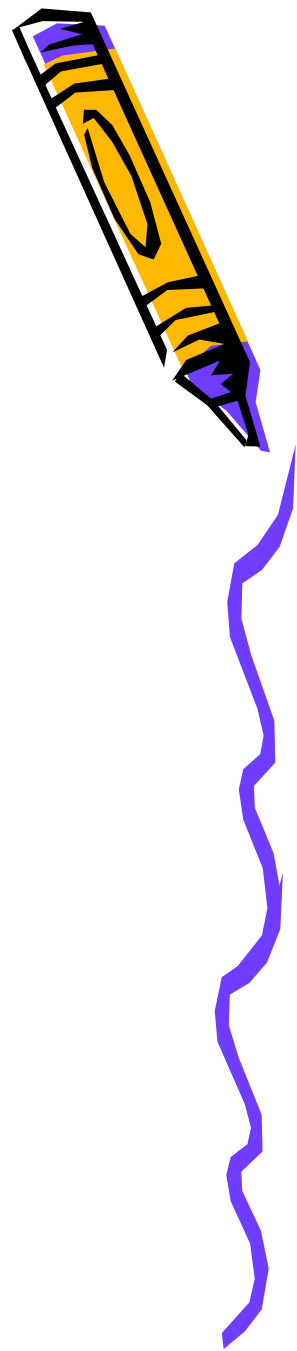
- The toolbar, located just below the menu bar, provides quick and easy access to many frequently used facilities



Retrieving an SPSS Data File

Use the mouse to select

- File
- Open
- Data...



Untitled - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

New
Open
Open Database
Read Text Data

Save Ctrl+S
Save As...

Display Data Info...
Apply Data Dictionary...
Cache Data...

Print... Ctrl+P
Print Preview

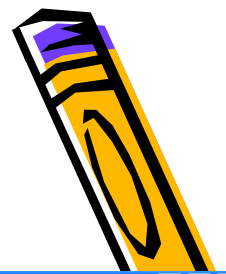
Switch Server...
Stop Processor Ctrl+.
Recently Used Data
Recently Used Files

Exit

Data...
Syntax...
Output...
Script...
Other...

SPSS Processor is ready

If you open the employee data file it will appear like this



Employee data - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

1: id 1

| | id | gender | bdate | educ | jobcat | salary | salbegin | jobtime | prevexp | minority | var | var | var |
|----|----|--------|----------|------|----------|-----------|----------|---------|---------|----------|-----|-----|-----|
| 1 | 1 | Male | 02/03/52 | 15 | Manager | \$57,000 | \$27,000 | 98 | 144 | No | | | |
| 2 | 2 | Male | 05/23/58 | 16 | Clerical | \$40,200 | \$18,750 | 98 | 36 | No | | | |
| 3 | 3 | Female | 07/26/29 | 12 | Clerical | \$21,450 | \$12,000 | 98 | 381 | No | | | |
| 4 | 4 | Female | 04/15/47 | 8 | Clerical | \$21,900 | \$13,200 | 98 | 190 | No | | | |
| 5 | 5 | Male | 02/09/55 | 15 | Clerical | \$45,000 | \$21,000 | 98 | 138 | No | | | |
| 6 | 6 | Male | 08/22/58 | 15 | Clerical | \$32,100 | \$13,500 | 98 | 67 | No | | | |
| 7 | 7 | Male | 04/26/56 | 15 | Clerical | \$36,000 | \$18,750 | 98 | 114 | No | | | |
| 8 | 8 | Female | 05/06/66 | 12 | Clerical | \$21,900 | \$9,750 | 98 | 0 | No | | | |
| 9 | 9 | Female | 01/23/46 | 15 | Clerical | \$27,900 | \$12,750 | 98 | 115 | No | | | |
| 10 | 10 | Female | 02/13/46 | 12 | Clerical | \$24,000 | \$13,500 | 98 | 244 | No | | | |
| 11 | 11 | Female | 02/07/50 | 16 | Clerical | \$30,300 | \$16,500 | 98 | 143 | No | | | |
| 12 | 12 | Male | 01/11/66 | 8 | Clerical | \$28,350 | \$12,000 | 98 | 26 | Yes | | | |
| 13 | 13 | Male | 07/17/60 | 15 | Clerical | \$27,750 | \$14,250 | 98 | 34 | Yes | | | |
| 14 | 14 | Female | 02/26/49 | 15 | Clerical | \$35,100 | \$16,800 | 98 | 137 | Yes | | | |
| 15 | 15 | Male | 08/29/62 | 12 | Clerical | \$27,300 | \$13,500 | 97 | 66 | No | | | |
| 16 | 16 | Male | 11/17/64 | 12 | Clerical | \$40,800 | \$15,000 | 97 | 24 | No | | | |
| 17 | 17 | Male | 07/18/62 | 15 | Clerical | \$46,000 | \$14,250 | 97 | 48 | No | | | |
| 18 | 18 | Male | 03/20/56 | 16 | Manager | \$103,750 | \$27,510 | 97 | 70 | No | | | |
| 19 | 19 | Male | 08/19/62 | 12 | Clerical | \$42,300 | \$14,250 | 97 | 103 | No | | | |
| 20 | 20 | Female | 01/23/40 | 12 | Clerical | \$26,250 | \$11,550 | 97 | 48 | No | | | |
| 21 | 21 | Female | 02/19/63 | 16 | Clerical | \$38,850 | \$15,000 | 97 | 17 | No | | | |
| 22 | 22 | Male | 09/24/40 | 12 | Clerical | \$21,750 | \$12,750 | 97 | 315 | Yes | | | |
| 23 | 23 | Female | 03/15/65 | 15 | Clerical | \$24,000 | \$11,100 | 97 | 75 | Yes | | | |
| 24 | 24 | Female | 03/27/33 | 12 | Clerical | \$16,950 | \$9,000 | 97 | 124 | Yes | | | |
| 25 | 25 | Female | 07/01/42 | 15 | Clerical | \$21,150 | \$9,000 | 97 | 171 | Yes | | | |
| 26 | 26 | Male | 11/08/66 | 15 | Clerical | \$31,050 | \$12,600 | 96 | 14 | No | | | |

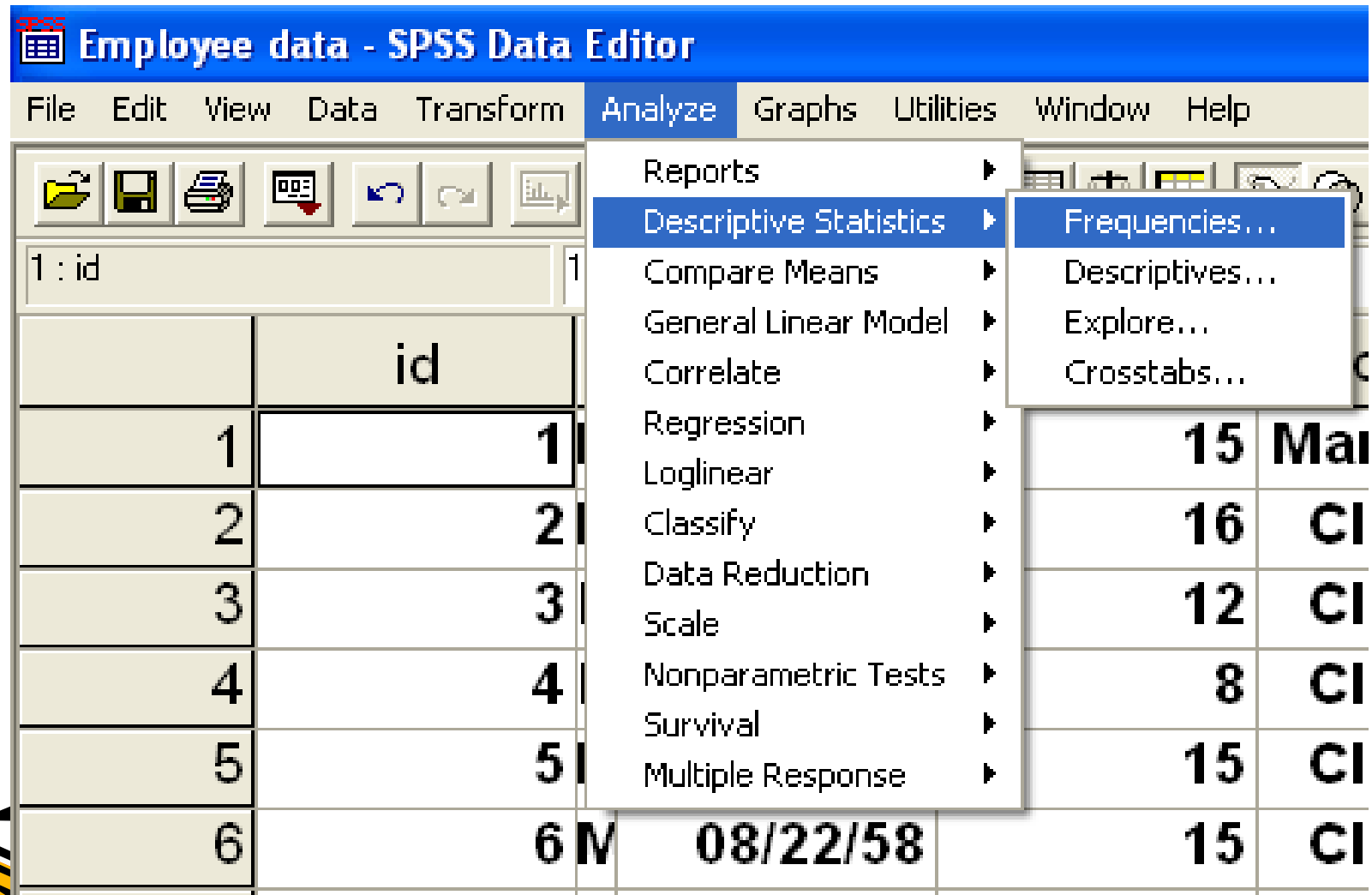
Data View Variable View

SPSS Processor is ready

start Employee data - SPSS... Microsoft PowerPoint ... SPSS short course1.pdf SPSS for Windows.pdf

EN 20:21

If you do simple analysis e.g.



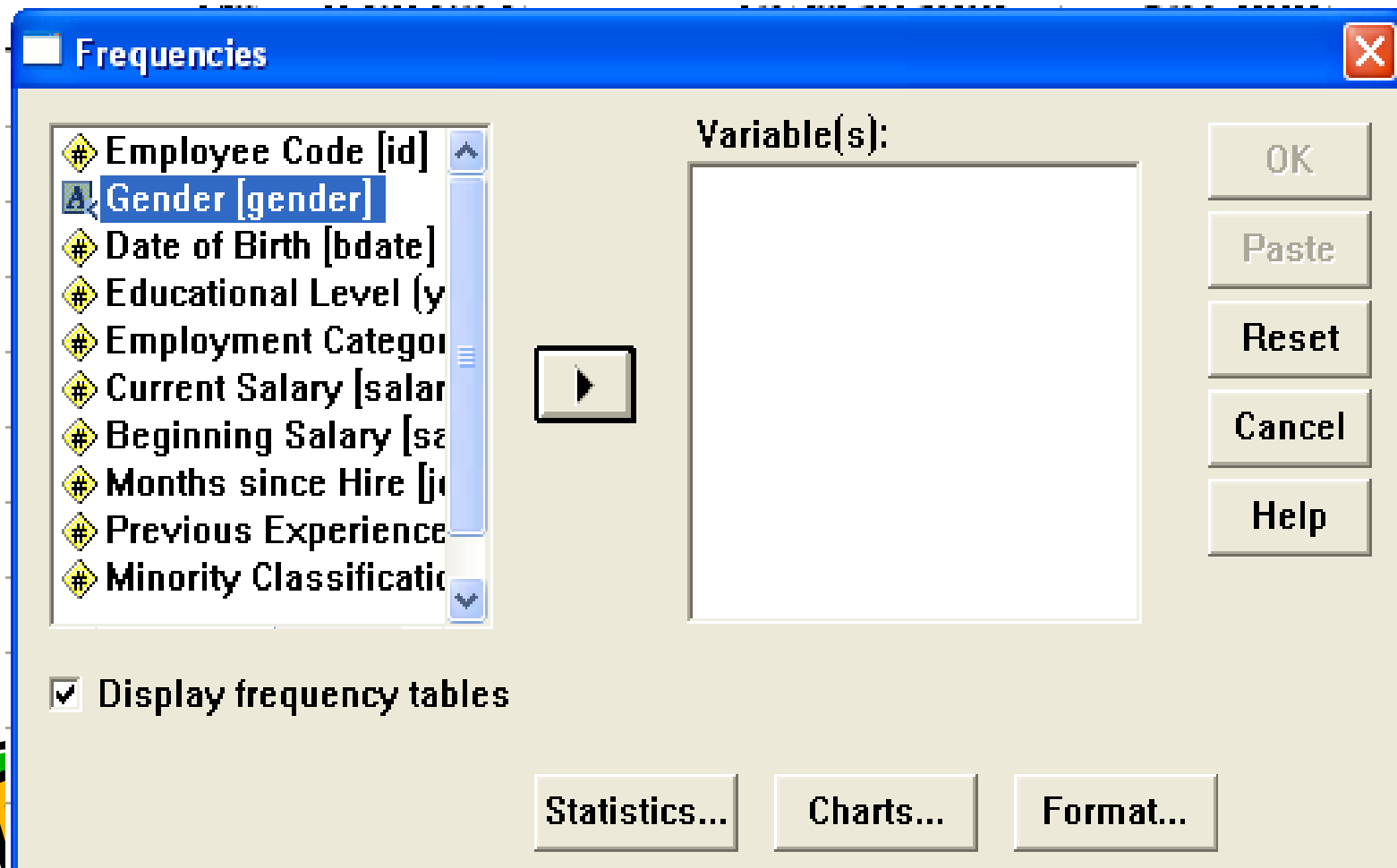
The screenshot shows the SPSS Data Editor window titled "Employee data - SPSS Data Editor". The menu bar includes File, Edit, View, Data, Transform, Analyze, Graphs, Utilities, Window, and Help. The "Analyze" menu is open, showing options like Reports, Descriptive Statistics, Compare Means, General Linear Model, Correlate, Regression, Loglinear, Classify, Data Reduction, Scale, Nonparametric Tests, Survival, and Multiple Response. The "Descriptive Statistics" submenu is also open, highlighting "Frequencies...". The data grid shows a variable "id" with values 1 through 6. A portion of another variable is visible, showing values 15, 16, 12, 8, 15, and 15.

| | id | |
|---|----|--|
| 1 | 1 | |
| 2 | 2 | |
| 3 | 3 | |
| 4 | 4 | |
| 5 | 5 | |
| 6 | 6 | |

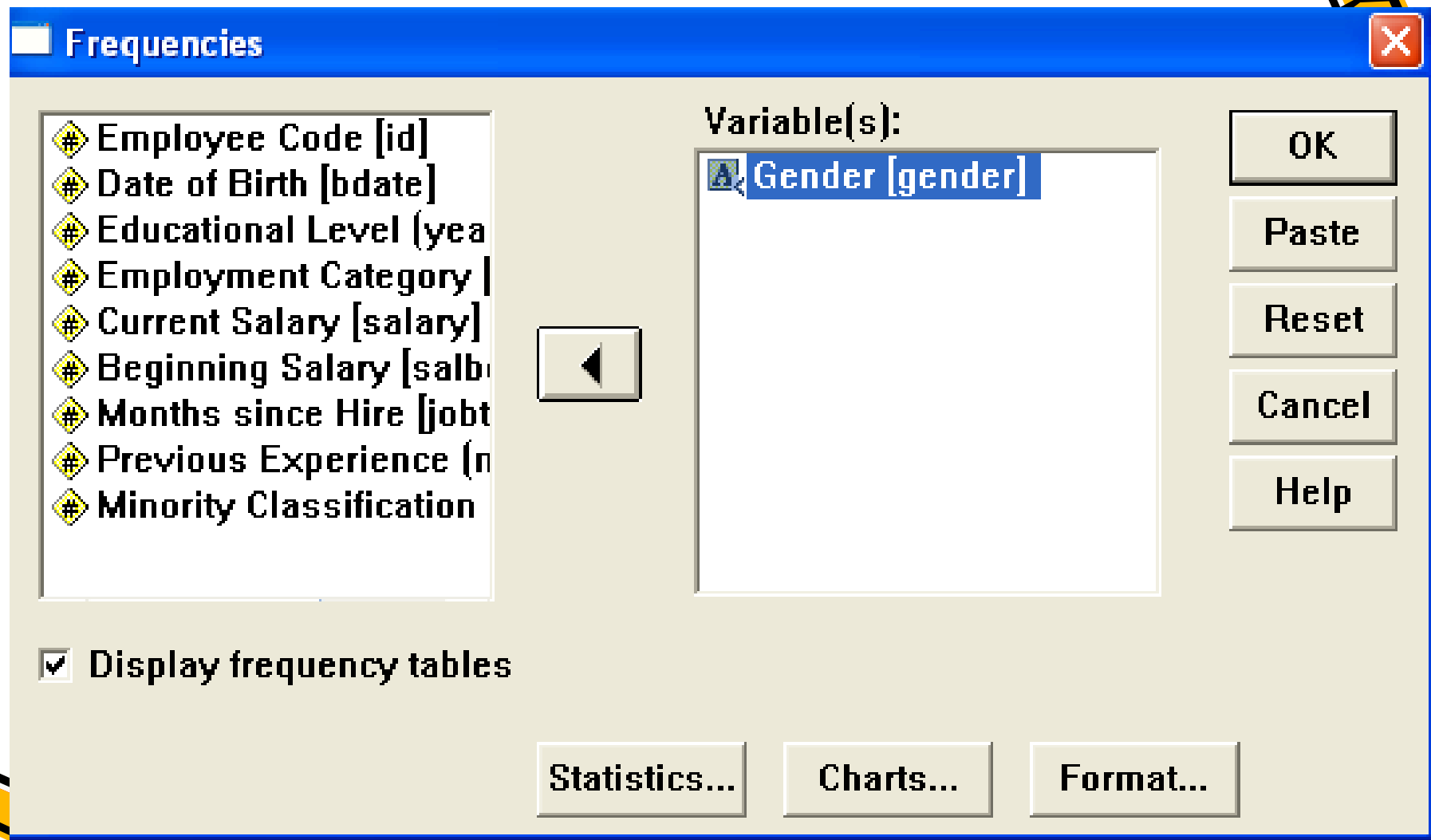
Below the data grid, a portion of another variable is visible, showing values 15, 16, 12, 8, 15, and 15.

| | |
|----|----|
| 15 | Ma |
| 16 | CI |
| 12 | CI |
| 8 | CI |
| 15 | CI |
| 15 | CI |

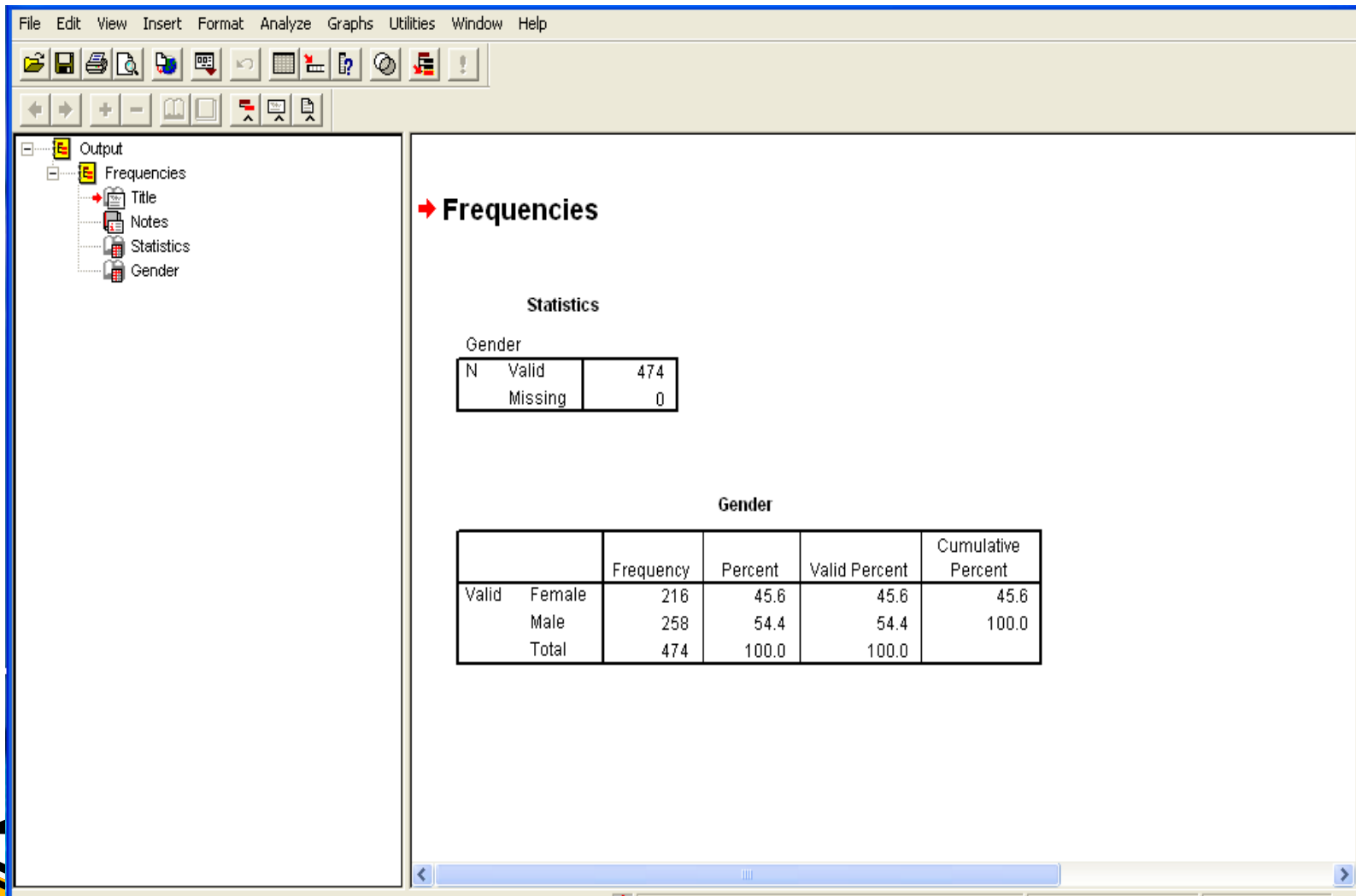
Then a dialog box like this will appear



If you selects gender and then ok



The output viewer will appear like this



Printing your output file

- Select..
- File
- Print
- OK
- Or click on the print button in the button bar.

Saving your output file

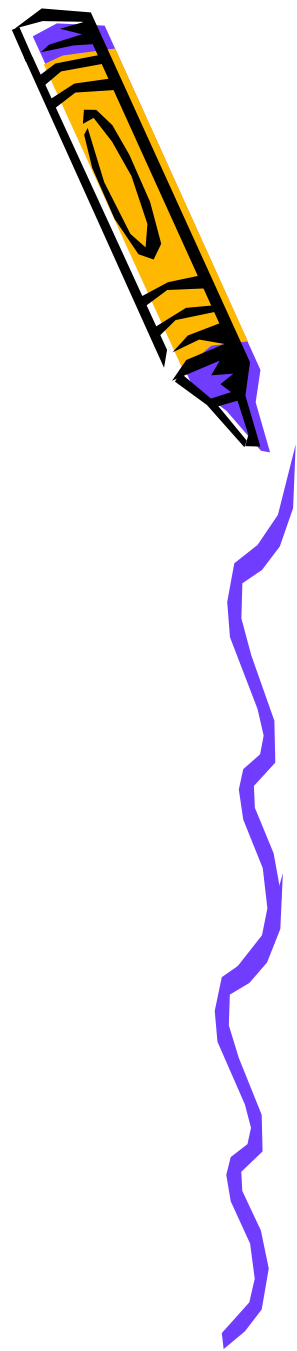
- Make sure the **Output Viewer** Window is active

Click on

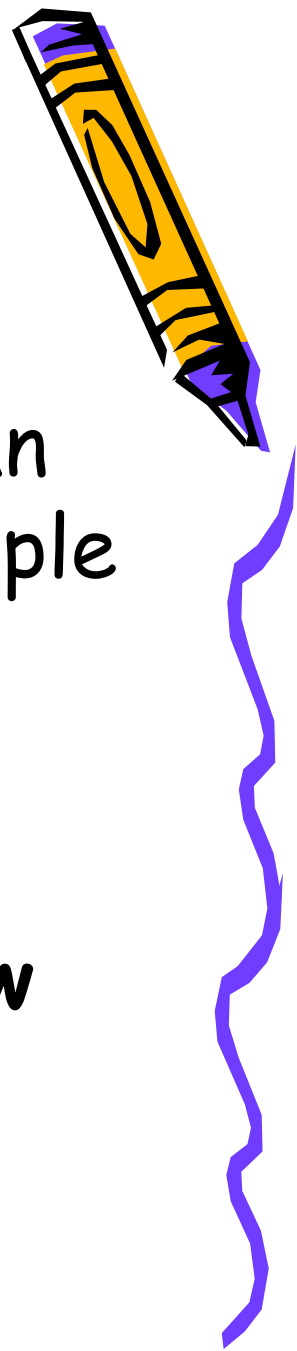
- File
- Save
- Or click on the save button in the button bar.

Leaving SPSS

- Select..
- File
- Exit



Practical



- In this exercise you will retrieve an SPSS data file and carry out a simple analysis.
- this exercise also will allow you to become familiar with the two main windows - the **Data Editor Window** and the **Output Viewer Window**.



Importing Data From Excel Files

Data can be imported into SPSS from Microsoft Excel and several other applications with relative ease.

- To open an Excel file, select the following menu options from the menu in the Data Editor window in SPSS:
- **File Open...**
- First, select the desired location on disk using the *Look in* option. Next, select Excel from the *Files of type* drop-down menu. The file you saved should now appear in the main box in the *Open File* dialog box. You can open it by double-clicking on it. You will be presented with one more dialog box:



Opening Excel Data Source [X]

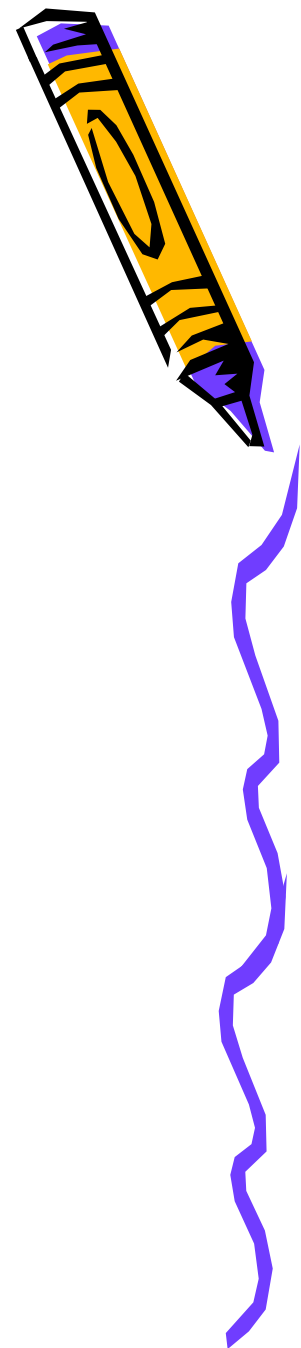
C:\TEMP\Book1.xls

☒ Read variable names from the first row of data.

Worksheet: Sheet1 [A1:D12]

Range: Sheet1 [A1:D12]
Sheet2 [A1:B1]

OK Cancel Help





This dialog box allows you to select a spreadsheet from within the Excel Workbook.

The drop-down menu in the example shown above offers two sheets from which to choose. As SPSS only operates on one spreadsheet at a time, you can only select one sheet from this menu.

This box also gives you the option of reading variable names from the Excel Workbook directly into SPSS. Click on the *Read variable names* box to read in the first row of your spreadsheet as the variable names.



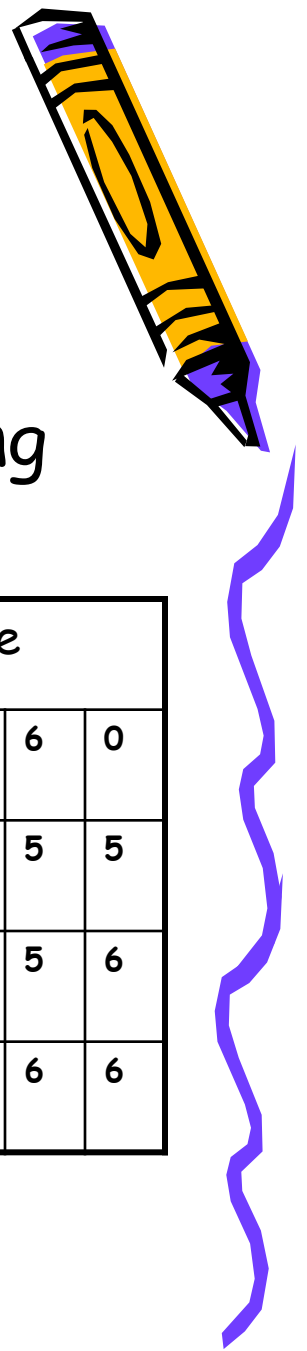
Practical

- Create the following excel file and import it to SPSS

| id | surname | forename | age | sex | pulse | s bl p |
|----|---------|----------|-----|-----|-------|--------|
| 1 | Mohamed | Ahmed | 12 | 1 | 70 | 120 |
| 2 | Yousef | Fekry | 10 | 1 | 65 | 125 |
| 3 | Khaled | Aser | 12 | 1 | 69 | 160 |
| 4 | Mohamed | Mona | 12 | 0 | 68 | 130 |
| 5 | Yousef | Randa | 15 | 0 | 64 | 140 |



Creating your own SPSS Data File Using the Data Editor

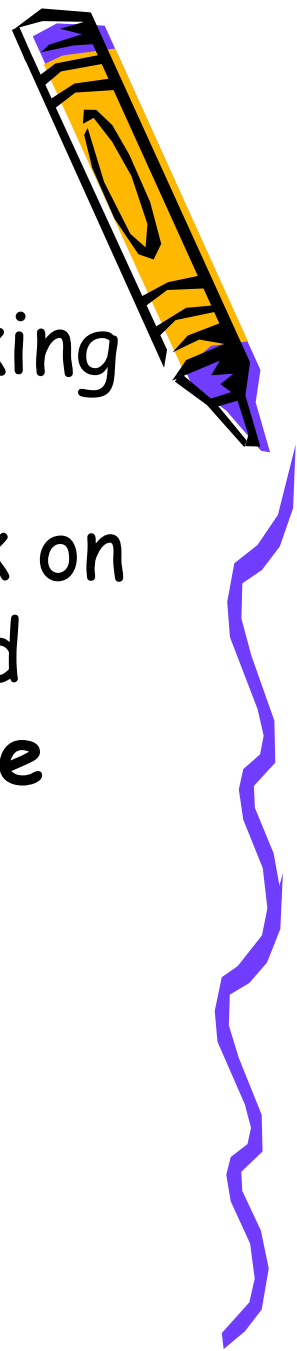


We will create data file from the following data sheet

| Id | forename | | | | | | | | ◌surname | | | | | | | sex | age | | |
|----|----------|---|---|---|---|--|--|--|----------|---|---|---|---|---|---|-----|-----|---|---|
| | A | H | M | E | D | | | | A | L | I | | | | | | | | |
| 1 | A | H | M | E | D | | | | A | L | I | | | | | 1 | | 6 | 0 |
| 2 | S | A | M | I | R | | | | E | L | M | A | S | R | Y | 1 | | 5 | 5 |
| 3 | M | A | R | O | A | | | | M | O | H | M | A | D | | 2 | | 5 | 6 |
| 4 | M | A | N | A | L | | | | D | A | O | A | D | | | 2 | | 6 | 6 |

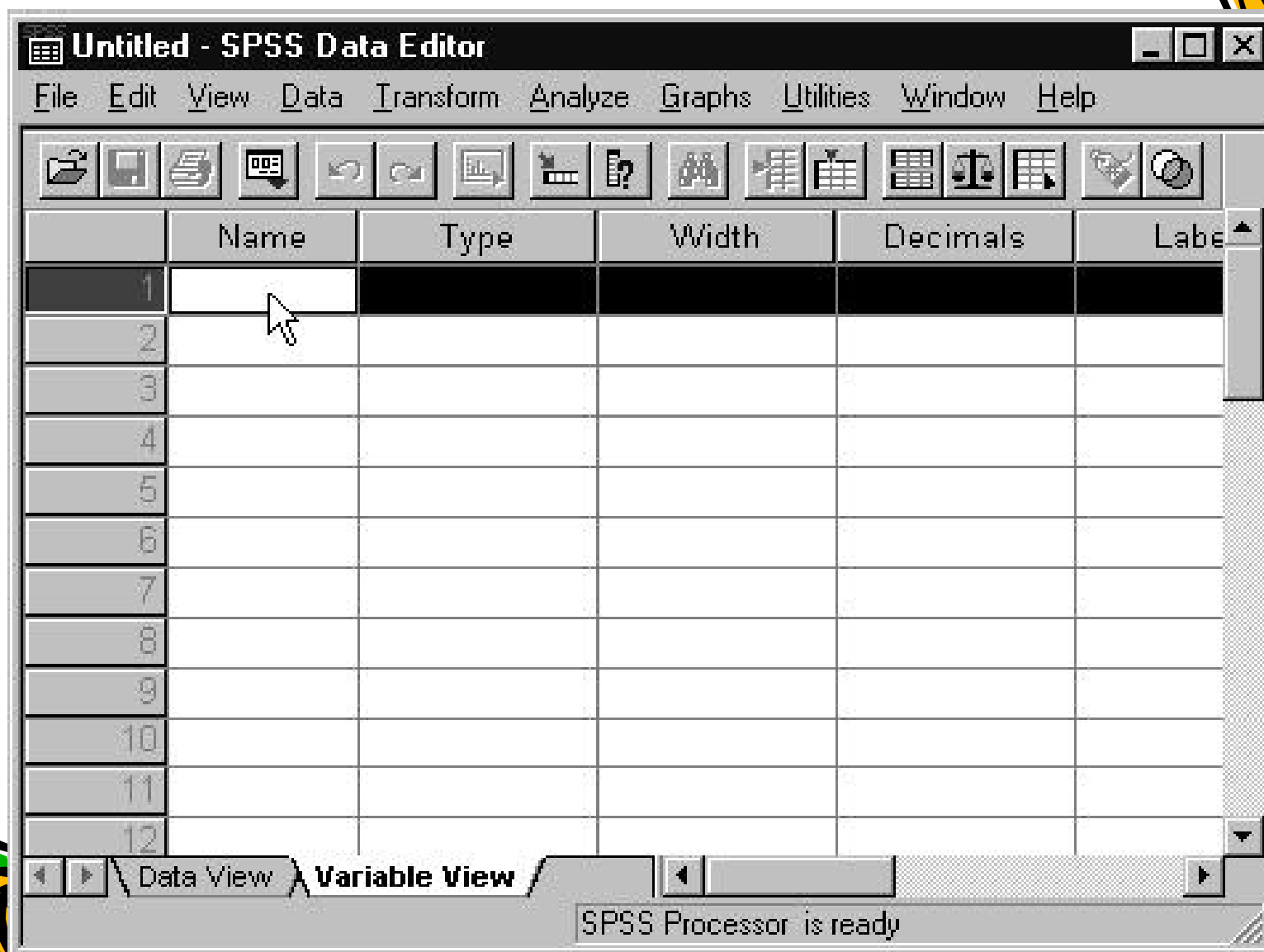


Defining the variables



Start SPSS in the usual way by clicking on the **SPSS** icon. With the **Data Editor** Window active, double click on the first blank data column headed **var.** This takes you to the **Variable View** window. The first row is highlighted, with the first column, headed **Name**, selected





Variable names

1. Must have *no more* than 8 characters
2. Must be unique in any one file
3. Must start with a letter and contain no spaces

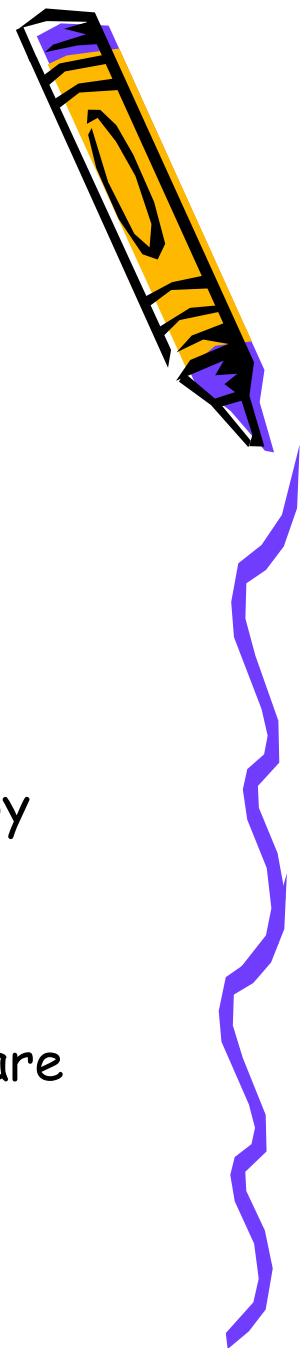
e.g. **SEX** – **age** – **var1** – **x**

If a variable has more than 8 characters then SPSS will truncate after the eighth. So both **DISTANCE1** and **DISTANCE2** will both be seen as **DISTANCE** in a variable list.

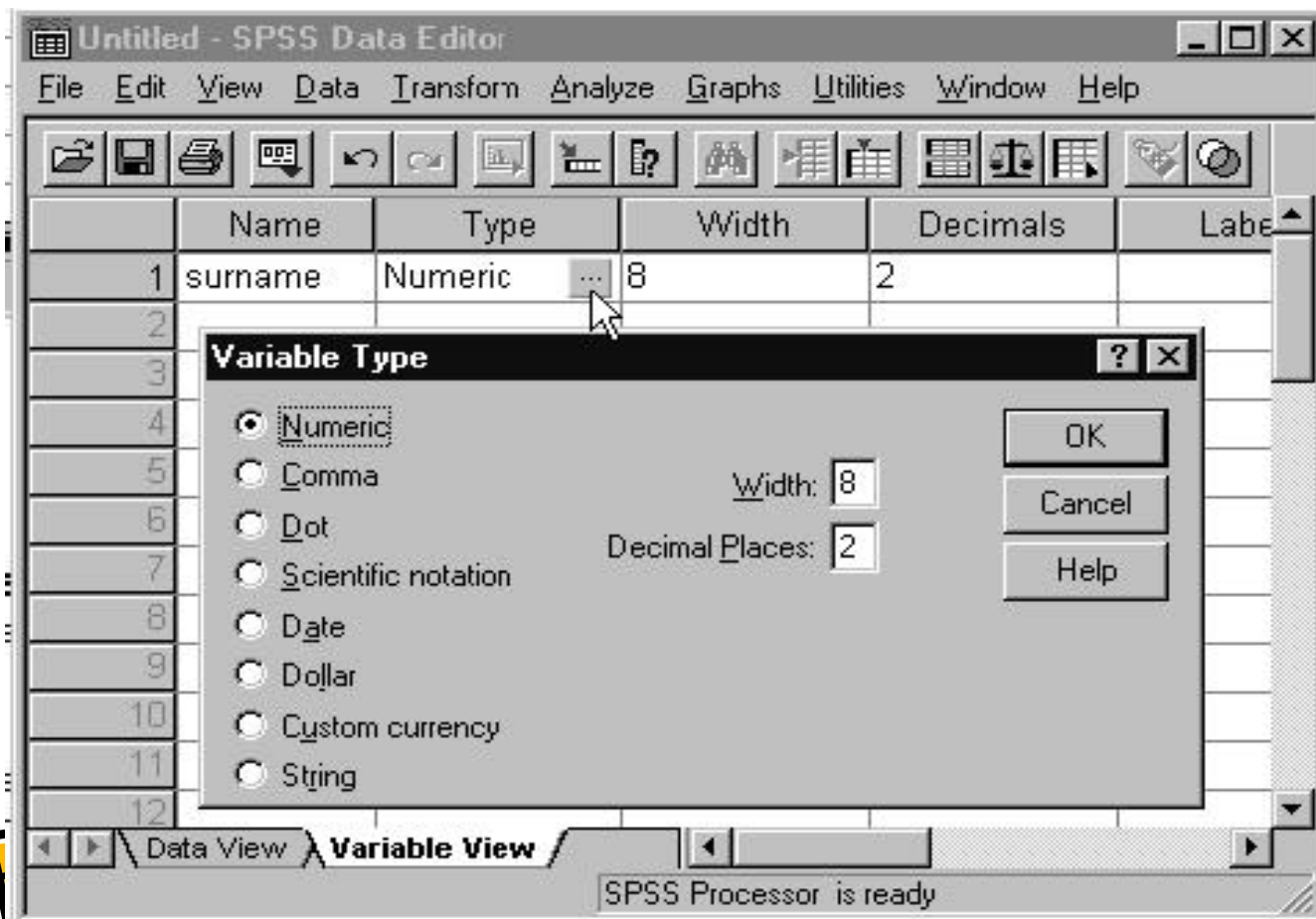
4. Must not be any of the following, which are “reserved” by SPSS.

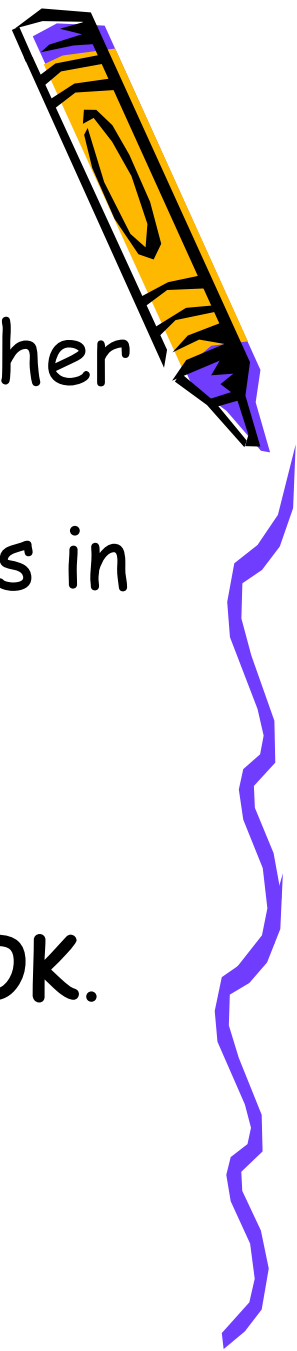
**ALL EQ AND WITH NOT OR THRU BY GE GT LE
NE TO**

5. SPSS is not case sensitive, so **MARSTAT** and **marstat** are recognized as the same variable.



In the **Name** box, type the variable name **surname**. Then click in the next cell in the **Type** column), or press the **TAB** key. The remaining columns will be completed with the default choices.





- Select **String**. This allows you to enter the surnames as letters, rather than numbers. Then click on and delete the number 8 which appears in the center of the **Variable Type** dialog box. Retype the number 15. This is how many characters your variable is allowed to be. Click on **OK**.





- The variables ID, sex and age can be defined in a simpler way because they are **numeric variables**. The default is numeric.
- Click in the second cell in the **Name** column, and type **sex**. Then move to the third cell by clicking in it with your mouse or by pressing the **Enter** key or the **down arrow** key on your keyboard. The defaults will be entered automatically, and we don't need to make any changes



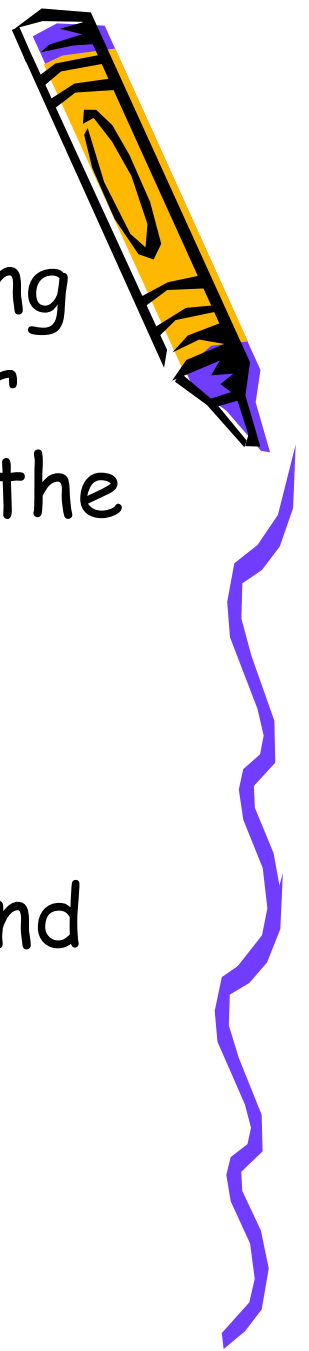
SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

SPSS Processor is ready

| | Name | Type | Width | Decimals | Label |
|----|---------|---------|-------|----------|-------|
| 1 | surname | String | 15 | 0 | |
| 2 | sex | Numeric | 8 | 2 | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |

Entering the Data

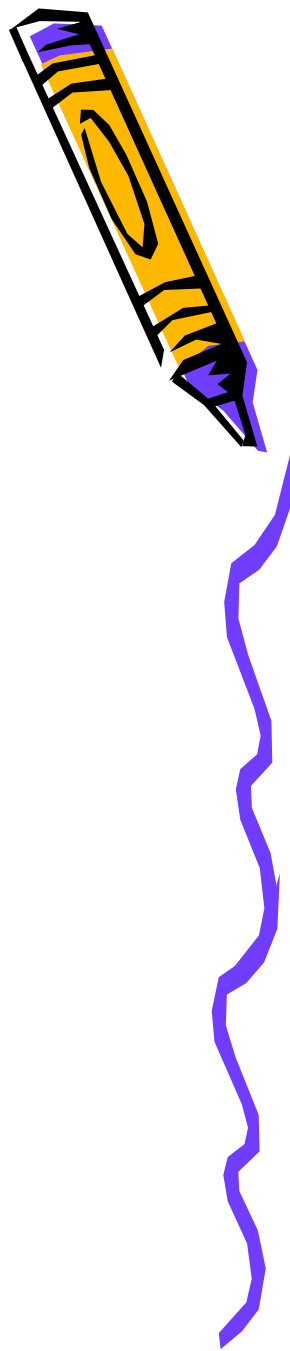


- Return to the **Data View** by clicking on the tab at the bottom. To enter the data, just click your cursor in the first cell and start typing in the names and numbers.
- Use the backspace key on the keyboard to delete any mistakes and replace with the correct numbers.



Saving the Data

- Save your data as an SPSS Data file by selecting
 - File
 - Save



Adding Labels

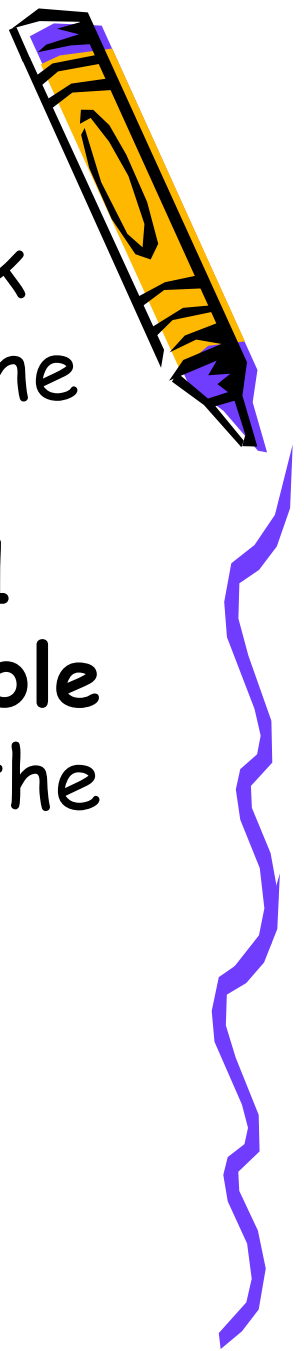


- After SPSS has read the data for each of the variables into the **Data Editor** Window, labels can be defined to give meaningful descriptions for them.
- Obviously, a variable named **sex** does not really need a label, but one named **var1** clearly does so that anyone reading the SPSS output can understand what information is stored as **var1**.
- There are two kinds of label that can be applied to each variable, variable labels and value labels.
- Variable labels expand on the variable name – they tell you what question was asked, and value labels tell you what the numerical code given to each response means. So “Sex of respondent” would be the variable label for **sex** and “Male” and “Female” would be the value labels given to the codes M and F respectively.



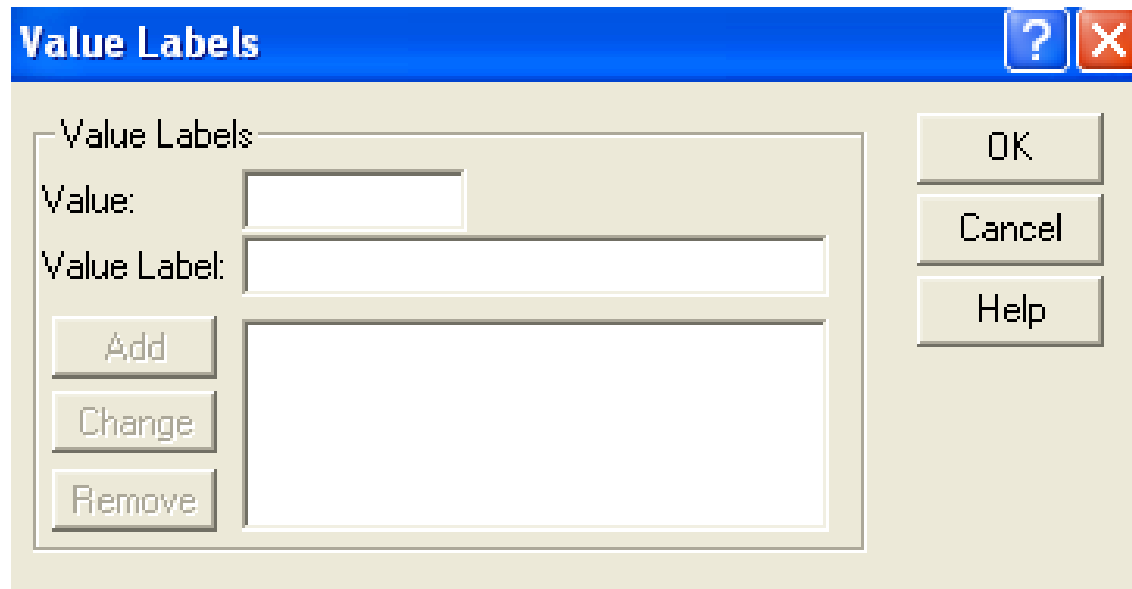
Variable Labels

- To label the variables, double click on the variable name e.g. **var1** in the column heading of the **Data View**. This takes you directly to the **var1** line of the **Variable View**. A **Variable Label** for **var1** can be typed into the cell in the **Label** column.

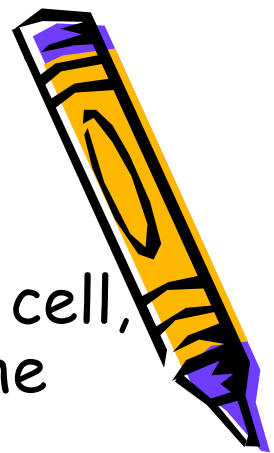


Value Labels

- The **Values** column will initially have the entry **None**. To add **Value Labels**, select the **Values** cell, and click on the button on the right to open the **Value Labels** dialogue box



The image shows a screenshot of a software dialog box titled "Value Labels". The dialog box has a blue title bar with a question mark icon and a red close button icon. The main area is light beige. On the left, there is a section labeled "Value Labels" containing two input fields: "Value:" and "Value Label:". Below these fields are three buttons: "Add", "Change", and "Remove". To the right of the input fields are three buttons: "OK", "Cancel", and "Help". A large, empty rectangular area is located below the "Add", "Change", and "Remove" buttons.



Each value is typed into the **Value** box, followed by its label in the **Value Label** box.

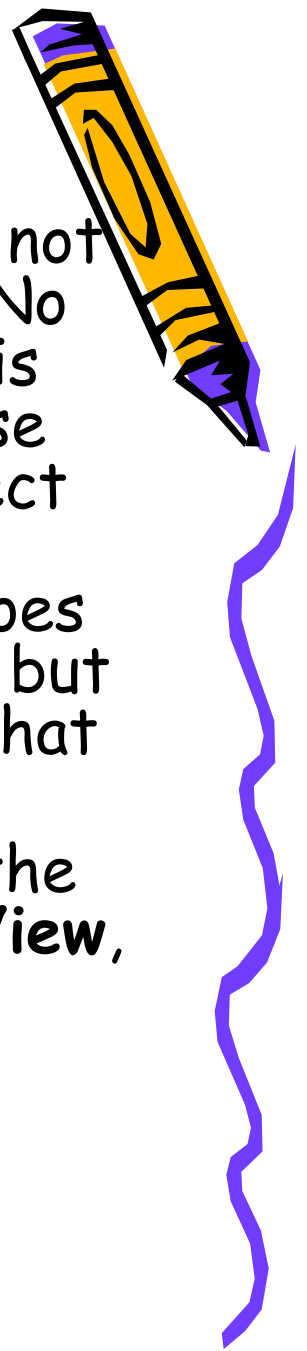


Finally, the **Add** button is clicked. Any errors can be corrected by highlighting the label in the big box, making it the current entry, modifying it, and clicking on **Change**.

When you have finished adding the **Value Labels**, click on **OK**.



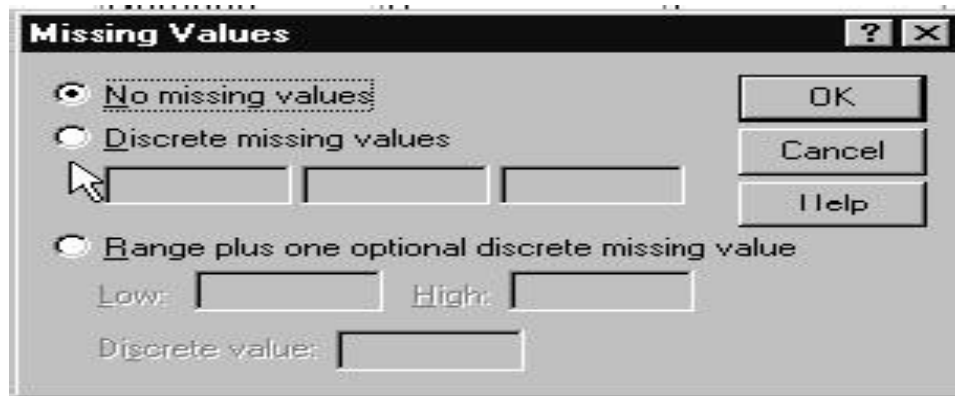
Missing Values



Codes representing information not collected or not applicable (e.g. the code 99 for age, meaning 'No response') need to be specified as missing. This will cause SPSS to omit respondents with these values from calculations (it would not be correct to calculate the average age of the sample including 99 as a valid value since that value does not mean that the respondent is 99 years old, but that no information on age was collected for that individual).

- To add **Missing Values**, for a variable, select the **Missing** cell for the variable in the **Variable View**, and click on the button. The **Missing Values** dialogue box appears





You can either specify up to three separate missing values or a range of values. e.g. The values missing may be 0 for 'Not applicable', 8 for 'Don't know' and 9 for 'No response'.

Or

You may wish to use the missing values to exclude all those over 65 from an analysis and you could specify that 65 through to the highest value is missing



Looking at your data using value labels

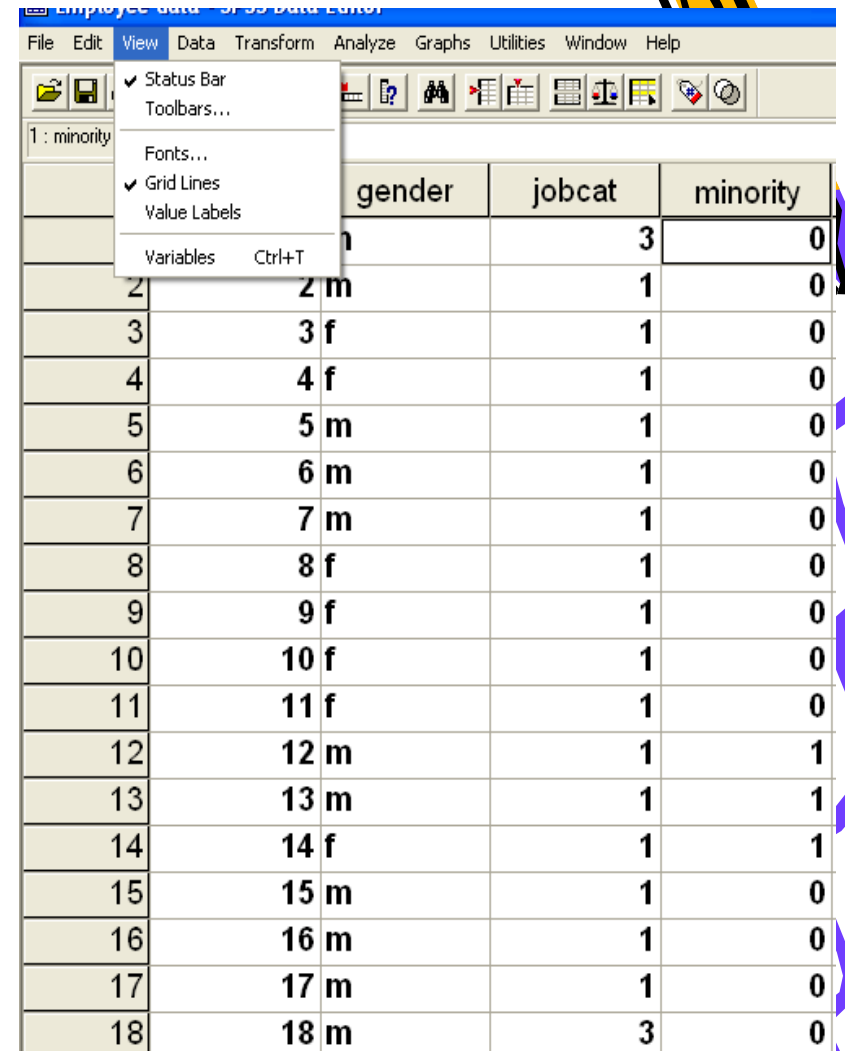


if you have file like this and you wish to see value labels select

View

value Labels

Or click on the button
2nd from the right
on the toolbar,



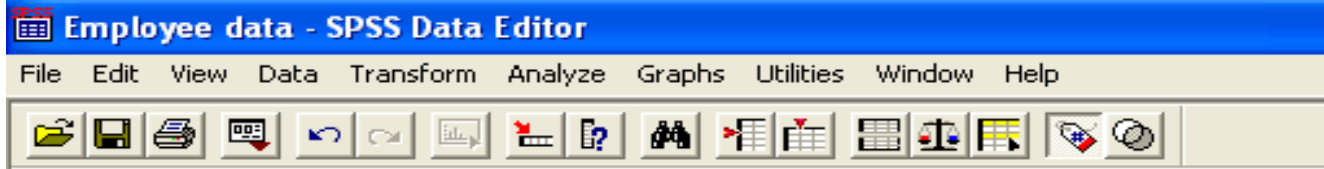
Employee data - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

1 : minority

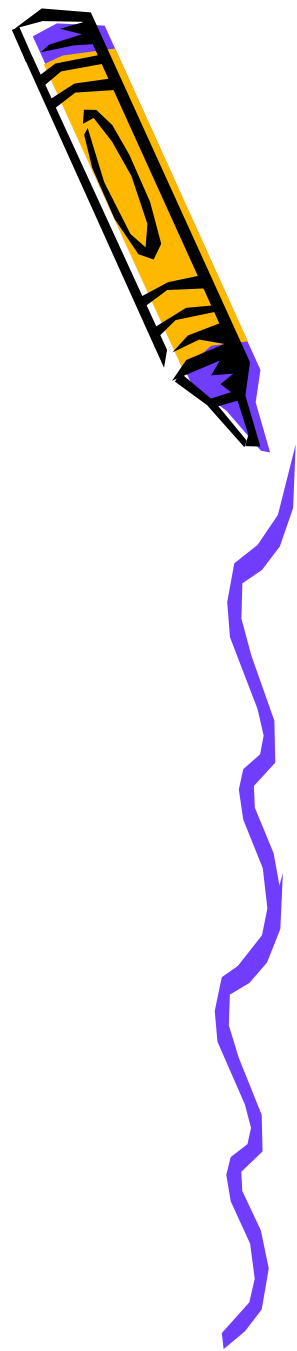
gender jobcat minority

| | | | |
|----|------|---|---|
| 1 | | 3 | 0 |
| 2 | 2 m | 1 | 0 |
| 3 | 3 f | 1 | 0 |
| 4 | 4 f | 1 | 0 |
| 5 | 5 m | 1 | 0 |
| 6 | 6 m | 1 | 0 |
| 7 | 7 m | 1 | 0 |
| 8 | 8 f | 1 | 0 |
| 9 | 9 f | 1 | 0 |
| 10 | 10 f | 1 | 0 |
| 11 | 11 f | 1 | 0 |
| 12 | 12 m | 1 | 1 |
| 13 | 13 m | 1 | 1 |
| 14 | 14 f | 1 | 1 |
| 15 | 15 m | 1 | 0 |
| 16 | 16 m | 1 | 0 |
| 17 | 17 m | 1 | 0 |
| 18 | 18 m | 3 | 0 |

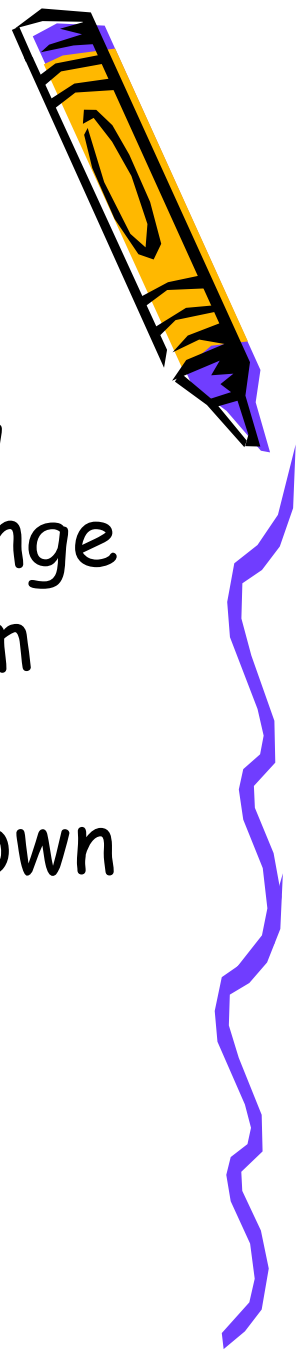


1 : minority 0

| | id | gender | jobcat | minority |
|----|----|--------|----------|----------|
| 1 | 1 | Male | Manager | No |
| 2 | 2 | Male | Clerical | No |
| 3 | 3 | Female | Clerical | No |
| 4 | 4 | Female | Clerical | No |
| 5 | 5 | Male | Clerical | No |
| 6 | 6 | Male | Clerical | No |
| 7 | 7 | Male | Clerical | No |
| 8 | 8 | Female | Clerical | No |
| 9 | 9 | Female | Clerical | No |
| 10 | 10 | Female | Clerical | No |
| 11 | 11 | Female | Clerical | No |
| 12 | 12 | Male | Clerical | Yes |
| 13 | 13 | Male | Clerical | Yes |
| 14 | 14 | Female | Clerical | Yes |
| 15 | 15 | Male | Clerical | No |
| 16 | 16 | Male | Clerical | No |
| 17 | 17 | Male | Clerical | No |
| 18 | 18 | Male | Manager | No |



Changing data values using Value Labels

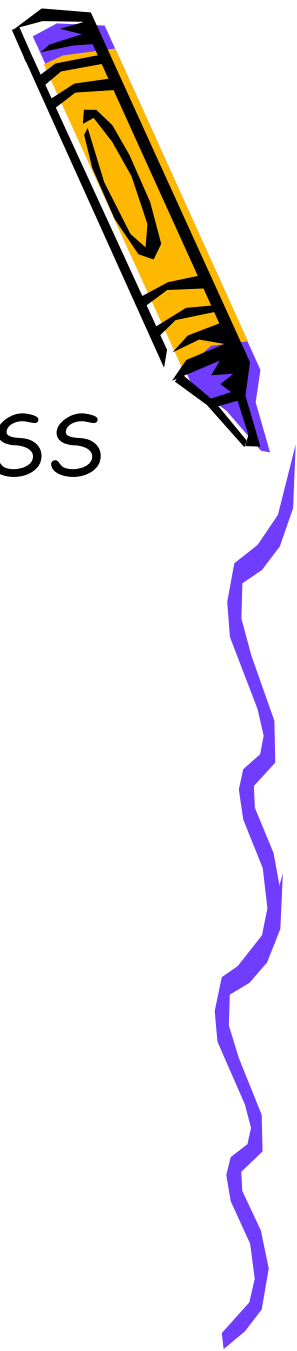


While you are viewing the data using the Value Labels view, you can change data values in a different way from typing the new value into the **Data View** window or by using a drop down menu with the value labels

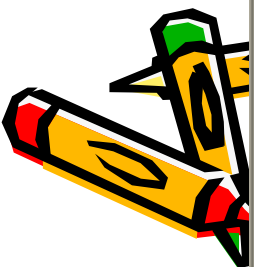
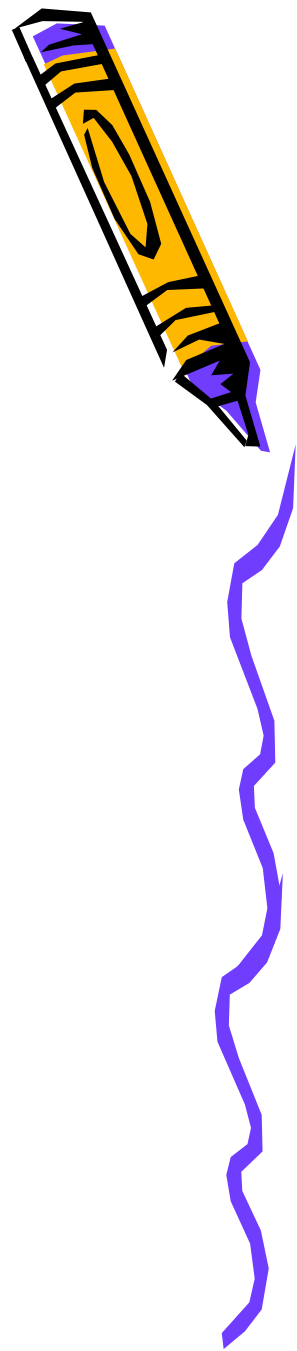


Practical


In this exercise you will be using SPSS for Windows to create a data file and define VARIABLE LABELS, VALUE LABELS and MISSING VALUES for each variable.



| | var1 | var2 | var3 | var4 | var5 |
|----|------|------|------|------|------|
| 1 | 1 | 57 | 3 | 2 | 5 |
| 2 | 2 | 38 | 2 | 2 | 1 |
| 3 | 2 | 25 | 3 | 4 | 1 |
| 4 | 2 | 51 | 2 | 2 | 1 |
| 5 | 2 | 31 | 2 | 3 | 2 |
| 6 | 2 | 99 | 9 | 9 | 5 |
| 7 | 2 | 71 | 3 | 3 | 1 |
| 8 | 1 | 38 | 3 | 2 | 3 |
| 9 | 2 | 37 | 3 | 2 | 4 |
| 10 | 2 | 23 | 3 | 4 | 1 |
| 11 | 1 | 35 | 2 | 2 | 4 |
| 12 | 1 | 71 | 3 | 3 | 3 |
| 13 | 1 | 33 | 2 | 2 | 3 |
| 14 | 2 | 44 | 2 | 2 | 1 |
| 15 | 2 | 39 | 2 | 2 | 3 |
| 16 | 1 | 39 | 3 | 2 | 2 |
| 17 | 1 | 31 | 3 | 2 | 3 |
| 18 | 2 | 51 | 2 | 2 | 3 |
| 19 | 1 | 51 | 2 | 2 | 3 |
| 20 | 2 | 51 | 3 | 2 | 1 |
| 21 | 1 | 68 | 3 | 3 | 8 |
| 22 | 2 | 29 | 3 | 2 | 3 |
| 23 | 1 | 21 | 2 | 1 | 3 |
| 24 | 1 | 44 | 2 | 2 | 2 |
| 25 | 1 | 45 | 2 | 2 | 3 |



Coding Sheet



| | Variable label | Variable name | Value labels | Codes |
|----|--|---------------|--|---------------------------------|
| Q1 | Respondent's sex | RSEX | Male Female | 1 2 |
| Q2 | Respondent's age | RAGE | (Code is age in years) No response | 99 |
| Q3 | Which income group would you place yourself? | SRINC | High income Middle income Low income No response | 1 2 3 9 |
| Q4 | How well are you managing on your income? | HINCM | Very well Quite well Not very well Not at all well Don't know No response | 1 2 3 4 8 9 |
| Q5 | Respondent's social class | RSCLASS | Professional Intermediate Skilled Semi-skilled Unskilled Unable to classify Not applicable | 1 2 3 4 5 8 0 |



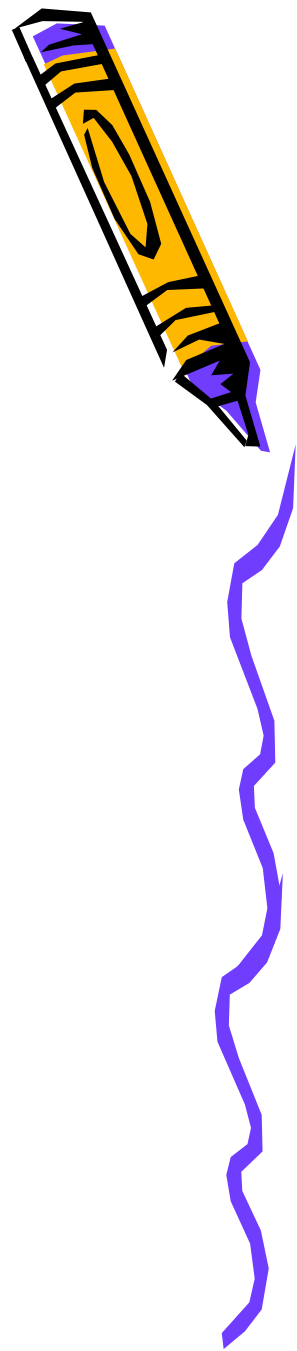
Treat the responses Don't know, No response, Not applicable, Unable to classify as missing values for all of the variables.

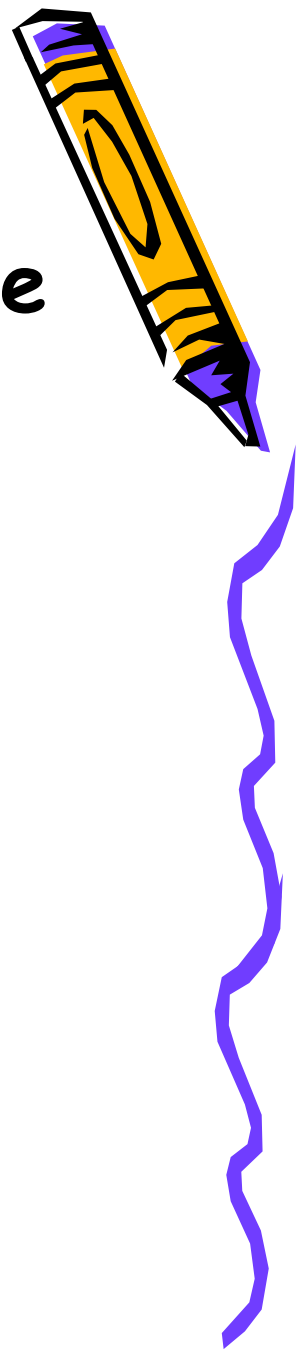
- At the end of this lecture, you should be able to

- Know how to start SPSS
- Identify SPSS menu bar
- Identify SPSS Data editor tool bar
- Recognize the data editor and its view
i.e. *Data View & Variable View*
- Know how to Exit SPSS



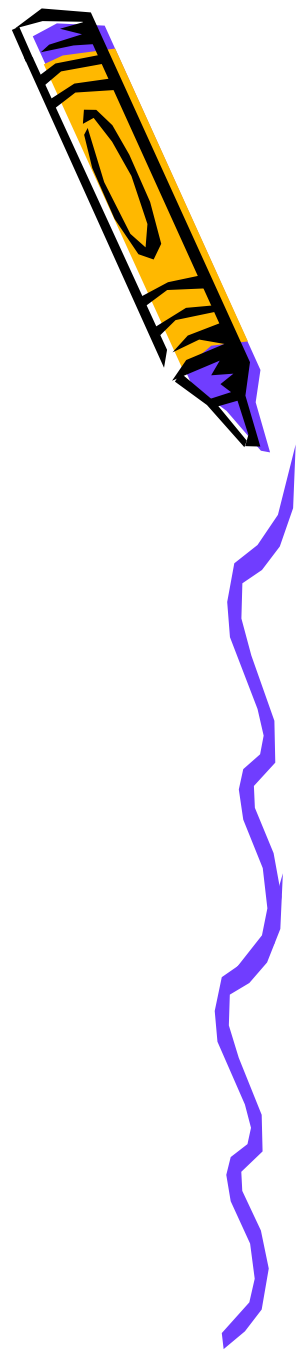
- Open Spss file
- Use frequency procedure
- Show The Output Viewer
- Use cross tab procedure
- Print your output file
- Save your output file
- Open SPSS file
- Open Excel file





- Creating your own SPSS Data File Using the Data Editor
 - Defining the variables
 - entering the Data
 - Saving the Data
- Adding Labels
 - variable labels and
 - value labels.





Thank you

