

FIRST PRACTICAL SESSION: USE OF STAGRAPHS

1) Open Statgraphics: execute STATGWIN5.1ing.exe in the folder DEIOAC at the desk.
Close the Statwizard window.

2) Introduce the data of the following table.

To introduce text: select the column → right button → *modify column* → *type: character* (here it is also possible to introduce the column name).

GENDER	AGE	Month_birth	DIGIT	RESIDENCE
male	20	1	5	flat
female	21	6	8	other
female	22	10	8	family
male	22	4	6	residence
female	22	7	7	flat
male	20	11	3	family

3) How to create a missing value: press the backspace key “←” and next, “intro”.
It is not the same as pressing the “delete” key (*supr*) and, next, “intro”.

4) Save the data file: *file* → *save* → *save data file*.

5) Close the data sheet: *file* → *close* → *close data file*.

6) Go to PoliformaT → EST GII → recursos → 03|transparencias → English group → curs8990 english.**sf3** (open the file). If the file does not open: save it and, next, go to Statgraphics: *file* → *open* → *open data file*.

7) Select all data (at the head of all columns) → right button of the mouse → *copy* → open Microsoft Excel → *paste*.

8) Create a new column in Excel: $\log(\text{TIME})$; copy the resulting data, and paste them in a new column of Statgraphics.

9) Generate new data: press the heading of an empty column at the right end → right button → *generate data* → *expression: $\log(\text{TIME})$* → OK.

Note: in Statgraphics, $\log(X)$ = Neperian logarithm; $\log_{10}(X)$ = decimal logarithm. In Excel both are decimal logs.

10) Recode data: select column “month_birth” → right button → *recode data* → lower limit =1 ; upper limit=1; new value = January (the same with other months).

This procedure also allows to group data within intervals (used to build contingency tables).

11) *Describe* → *numeric data* → *one-variable analysis* → *data: height* → OK.

Tick mark “*sort column names*” in order to sort column names in alphabetic order.

With a double click, the pane maximizes; with another double click it turns to the previous view.

The four most important buttons:

- input dialog [red button]: allows to change the data.
- tabular options [yellow button] (all tables appear on the left side of the screen)
- graphical options [blue/black] (all plots appear on the right side of the screen)
- save results [diskette button]

12) Press the “*save results*” button and tick mark “summary statistics” and “statistics labels”.

- 13) What is the average weight of students who were born in January?
Select: month_birth=1 (or month_birth="January" if data were previously recoded)
- 14) What is the average height of male students? *Select GENDER="male"*
- 15) What is the average weight of students born in January or February?
Select: month_birth<3 or: month_birth<=2 or: month_birth=1|month_birth=2
- 16) What is the average weight of students born in January or March?
Select: month_birth=1|month_birth=3
- 17) What is the average weight of students born in January and age=20?
Select: month_birth=1&AGE=20
- 18) What is the maximum value of height of female students? Is this value an outlier? Check this with the box-whisker and with the normal probability plot.
- 19) Using Excel, create a new column with data from 1, 2, 131. Copy and paste it to Statgraphics. Name it as "row".
- 20) Identify the female student with highest height. Repeat the analysis without that observation.
- 21) Repeat the analysis after discarding the maximum and minimum values.
- 22) Place the mouse pointer inside the window "*summary statistics*" → right button →
→ *pane options* → activate all parameters.
- 23) Go to the window "*frequency tabulation*". Select all the text → right button → *copy*.
Open Microsoft Word → *edit: paste special* → *unformatted text* →
→ select all text → font: courier new, size=8.
- 24) Activate the window "Box-and-Whisker plot".
Right button → *pane options* → *vertical*
Right button → *locate*
Right button → *graphics options* → (different options to modify the layout of the plot)
- 25) Obtain a box-whisker plot with TIME. In order to obtain a plot with transformed data: Button
input dialog → *data: log(TIME)* → OK.
- 26) Place the mouse pointer within the box-whisker plot → right button → *copy*.
Open a Microsoft Word file → *paste special* → *image (windows metafile)*
(Don't paste it directly, an error occurs!)
Using Word it is possible to modify the attributes of the plot: background color, lines, etc.
- 27) Obtain a scatterplot to study the relationship between height and weight:
Plot → *scatterplots* → *X-Y plot* → Y: weight; X: height → OK
In the upper bar of the plot → Row: 3 → button "*locate by row*" (observation corresponding to row 3 will be highlighted in red).
Press button "*identify*" (button with the symbol "?") → *identify by: month_birth* → OK.
Upper bar of the plot → Lbl: 1 → button "*locate by name*" (all individuals born in January will be highlighted in red).

In this scatterplot, highlight in red all male students. What can be concluded?