

Programming tools for mathematics
TP N° 1

Launch MATLAB :

Exercise α (alpha)

Type the following commands on the **Command Window**, what do you notice , both on Command window, workspace and command history windows ?

- | | |
|--------------------------------------|---|
| a) <code>>>a =5</code> | i) <code>>>%</code> what is this character for? |
| b) <code>>> A = 5.6</code> | j) <code>Clc</code> |
| c) <code>>> b = 7 ;</code> | k) <code>clc</code> |
| d) <code>>> B = 'salam'</code> | l) <code>quit</code> |
| e) <code>>>5 ;</code> | n) What is the working mode on the command window? |
| f) <code>>> ans = A + b</code> | |
| h) <code>>> A</code> | |

Exercise β (Beta) (Workspace)

- Use up key (\uparrow) of the keyboard to retrieve workspace variables.
- What are showed information of each variable?
- Right click on the workspace strip to show more information , what are they
- Delete workspace variables, one by one, following one of the next steps :
 - select the variable \rightarrow right click \rightarrow delete
 - select the variable \rightarrow edit menu \rightarrow delete
 - select the variable \rightarrow del (keyboard key) \rightarrow confirm deletion
- Use the direction key again (\uparrow) to retrieve workspace variables.
- Save your workspace by following the steps below :
 - Click on the File menu \rightarrow Save Workspace As
 - then, on the dialog box, type a file name \rightarrow save .
 - What do you notice on the Current Folder window?
- Type `>>clear B,` what is this command used for ?
 - Identify three methods to delete all the workspace variables simultaneously.
- retrieve your variables as following :

File menu \rightarrow Import Data \rightarrow on dialogbox that appears, double click on the file you created previously(of extension.mat) \rightarrow on this last dialogbox , titled import wizard, click on the finish button \rightarrow what do you notice on the Workspce ?
- Double click on a variable of your choice.
 - What is the name of the window that appears, what is its utility?
 - Modify the value of this variable using this last window, is this modification saved?
 - Can you save only one variable?

Exercise γ (Gamma) Command History

- 1 Notice on the command history window, at which time have you started working ? what do the green lines represent?
- 2 What is the impact of `clc` and `clear` commands on the command history ? try it.
- 3 How to delete any command from this window ? try by deleting `clear` and `clc` commands from the current session.
- 4 Double click (two times) on dashes – of your session (%--date et heure), what do you notice ?
- 5 How to re-run only one instruction?

Exercise δ (Delta) Current Folder

- a. what is the actual directory you work on?
- b. What are MATLAB files in the current folder? Which extensions ?
- c. Type the instruction : `A=5, printmatrix(A)`, what do you notice ?
- d. Modify the current folder path as follows :
C:\ProgramFiles\MATLAB\R2011a\extern\examples\compiler
- e. What are MATLAB files in the current folder now?
- f. Retype `printmatrix(A)` instruction, what do you notice, explain !
- g. Type these commands, what are the results ?

`>>which printmatrix >>which sin >>flames`

Exercise λ (Lambda)

Open the MATLAB editor (**Code Editor**) to start working in programming mode , by following :
(File→New →Script)

- a. First type these commands :
`tic, A = ones(1000,1000);`
`B=A/2; toc`
`Temps1=toc`
- b. Continue on the same file with these lines :
`tic, for i=1:1000; for j=1:1000;A(i,j)=1; end, end`
`for i=1:1000; for j=1:1000; B(i,j)=A(i,j)/2; end, end, toc`
`Temps2=toc`
- c. Save the file on the current folder. What is its extension ?
- d. Execute your code : by typing the file name (without its extension) on the command window (behind the command-line prompt)
- e. Compare Temps1 et Temps2 results , explain the difference ?
- f. What do you notice on the workspace ?

Exercise ξ (Zeta)

Personnalise the MATLAB desktop

- ✓ Try different desktop layouts via Desktop menu. Return to the default layout.
- ✓ select File menu→ Preferences command or the bouton (Start→Preferences).
- ✓ On the faced toolbox, select the pane *General* →*Confirmation Dialogs*. What are this options usefulness? Check the option : « *Confirm before exiting MATLAB* ».
- ✓ Close MATLAB, what do you notice ?

Supplementary Exercises :

1. Save your personalised desktop, modify it , finally, return to the personalized one
2. On the shortcuts bar, create a common shortcut to the `clc` and `clear` command
3. Modify the size and/or the font of command window text.

