

Introduction to Pluto

Vivaldo Mendes
Instituto Universitário de Lisboa (ISCTE-IUL)
vivaldo.mendes@iscte-iul.pt

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Tasks in week 1

- Everything in this course will be done using a computer
 - Practical exercises,
 - Mock tests/exams
 - Formal evaluation moments: tests/exams

Tasks in week 1

- We have to install two programs on your computer:
 - Julia programming language
 - Pluto.jl (one package developed for Julia)
- Week 1 deals only with the introduction to Pluto notebooks
- No macroeconomics will be taught during this week
- Do not worry: this is a macroeconomics course, not a computational one

1. Installing Julia

- The following slides are a short version of more detailed information available [here](#)

Installing Julia on Windows

- Download the correct executable for the Windows OS, by clicking here: *Windows installer Julia v1.11.3*
- Save the downloaded executable somewhere on your computer, or keep it in the *Downloads* folder.
- Click on top of the executable to install Julia
- Allow the installation to be done in the default directory
- Click on: Title of the document **Add Julia to PATH**
- Click on: **Finish**
- Installation completed

Installing Julia on a Mac

1. Choose the correct Apple executable according to the processor (*Intel/Rosetta* or *Apple Silicon*) on your Mac: this means that you have to choose either (2) or (3) below.

2. If your Mac has an Intel or Rosetta processor, you can download the correct executable from here: **macOS x86 (Intel or Rosetta) Julia v1.11.3**
3. If your Mac has an Apple Silicon processor, you can download the correct executable from here: **macOS (Apple Silicon) Julia v1.11.3**
4. Check the **Downloads** folder and drag the executable to the **Applications** folder. Installation completed.

Installing Julia on Linux

See detailed information available [here](#)

2. Running Julia

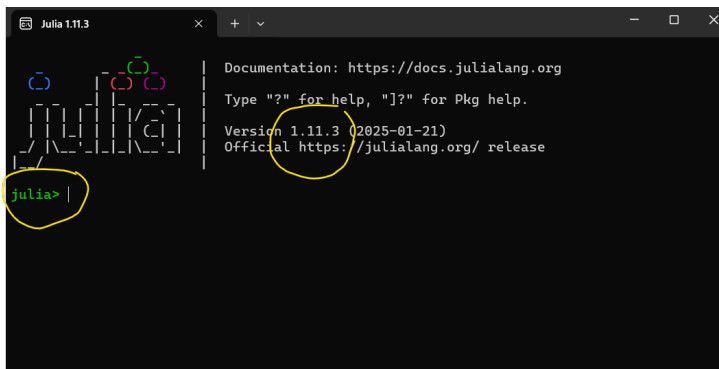
Starting Julia

- To start Julia, click on its icon on the desktop:



Starting Julia

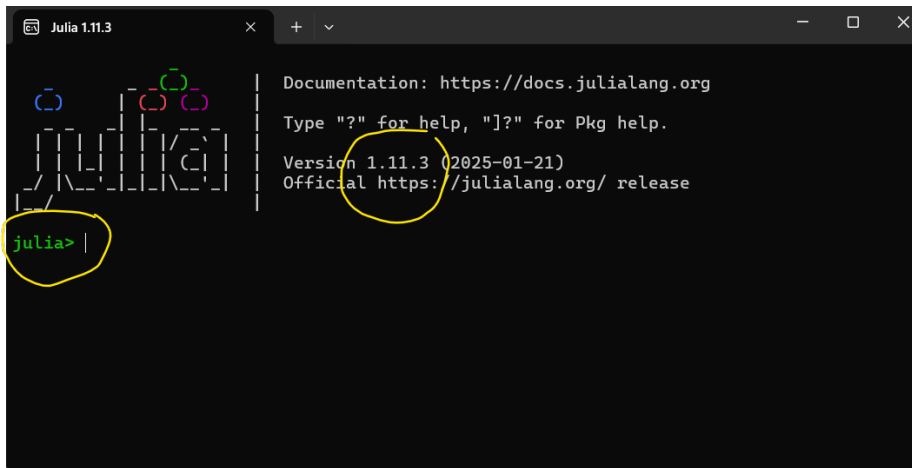
- The following black window will appear on your monitor:



- Julia runs in Two modes: **Julia mode** and **Pkg mode**
- what are these modes for? Next slides

Julia mode

- When we start Julia, by default it runs in Julia mode. In the image below, `julia>` indicates that we are in this mode:



Julia mode

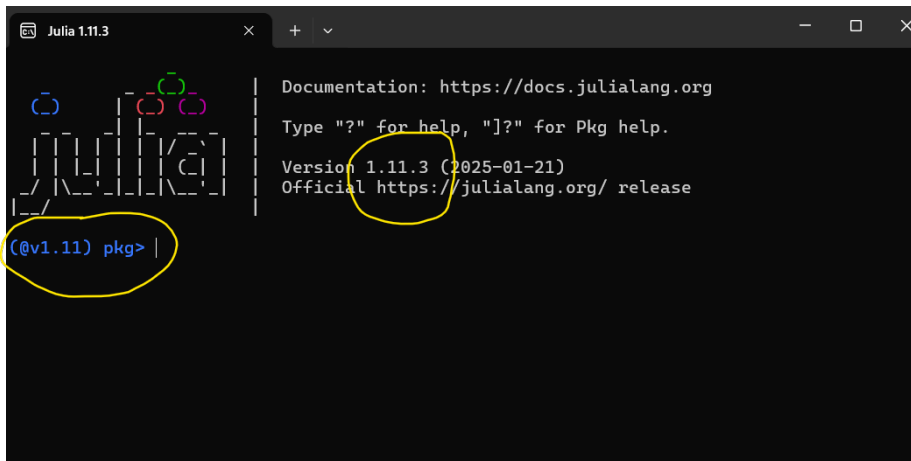
- If you type after `julia>` `4 + 4`, followed by clicking on **Enter**, you will get 8 as the output.
- Julia is installed and running well.
- Julia mode is for doing computation, but its window is ugly and not very handy
- So for computation, we will use **Pluto** instead.

Pkg mode

- To move from Julia mode to Pkg mode, in mode `julia>` type the following character: `]`
- Different keyboards have different ways of typing `]`
 - **Alt Gr** and **9** (usually do it on Windows)
 - **Option** and **9** (usually do it on Mac)

Pkg mode

- Now, we see `(@v1.11) pkg>` in the black window indicating that we are in Pkg mode:



- To go back to Julia mode, click on backspace: ←

3. Installing Pluto

Installing Pluto

- Start Julia, if it is not already running
- Go to Pkg mode: `(@v1.11) pkg>`
- Once in Pkg mode, type:
 - **add Pluto** followed by clicking on **Enter**
- Let the computer do the installation: no further intervention by you is required
- When the installation is finished, go back to mode `julia>` by clicking on backspace: ←
- That is it: Pluto is installed on your computer.

4. Updating your installation

Updating Pluto

- From time to time, new versions of Pluto come out
- We recommend you to update your Pluto installation every two weeks
- It is very simple and takes around 1 minute

Updating Pluto

- Start Julia and go to mode: `(@v1.11) pkg>`
- Once in Pkg mode, type:
 - **Update** followed by clicking on **Enter**
- Let the computer update your system (you do not need to intervene during this process)
- When the updating is finished, go back to mode `julia>` by clicking on backspace: ←.
- It is done.

5. Using Pluto

See more detailed information available [here](#)

Starting Pluto

- Start Julia and keep it in mode `\color{red}{\text{julia>}}`
- Type in its black window: `import Pluto ; Pluto.run()`
- Click on `Enter` and Julia will open Pluto in your browser:



Opening a Pluto notebook

- To open a Pluto notebook, the double-click on top of the file **does not work**
- Neither do the usual drag-and-drop in Mac
- Even if the drag-and-drop seems to work, do not do it ... you will loose your work

Opening a Pluto notebook

You have to tell Pluto where your notebook is located. For this, you have to:

- Put the Pluto notebook in a folder on your computer.
- So your notebook has an address (Path) on your computer
- You have to copy that address and paste it into Pluto's `Open a notebook` window
- How to get the address (Path) of your notebook?
- See next slide

Copy your notebook's path: Windows

Put the cursor on top of your file

- Mouse right-click on your file
- Choose: Properties
- Copy the path in **Location**:
- The Path will look like this: `G:\Macro\Week01`
- Once you have copied the path of your notebook, you can paste it into the `Open a notebook` box in the Pluto window
- See next slide

Copy your notebook's path: Mac

Put the cursor on top of your file

- Mouse right-click on your file
- Choose: Get info
- Copy the path in **Where:**
- The Path will look like this: G:/Macro/Week01
- Once you have copied the path of your notebook, you can paste it into the **Open a notebook** box in the Pluto window
- See next slide

Paste the Path of your notebook into Pluto

1. Suppose the Path of my notebook is:

G:\Macro\Week01 (on Windows)

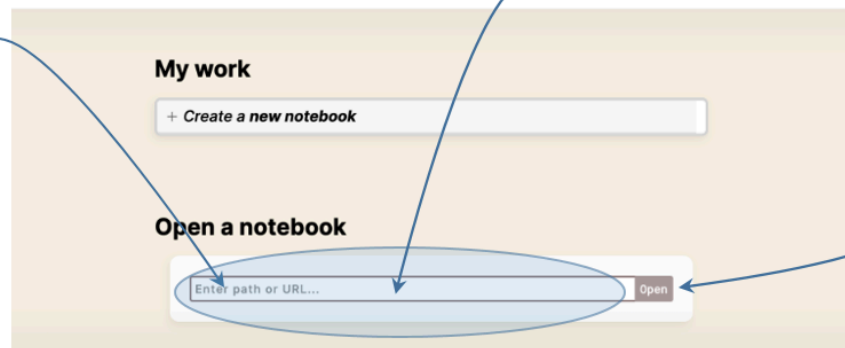
G:/Macro/Week01 (on Mac)

3. End the Path with a slash

\ (on Windows)

/ (on Mac)

2. Paste the Path of your notebook into this box



4. Click on **Open**

5. Click on **Enter**

6. Your Pluto notebook will be opened and running in your browser

End

Bibliography