

Introduction to Pluto Notebooks

Week 1

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

1. Installing Julia

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

Installing Julia on Windows

- To download the correct executable for the Windows OS, you can download it by clicking here: [*Windows installer Julia v1.10.5*](#)
- 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: Add Julia to PATH
- Click on: Finish
- Installation completed

Installing Julia on Mac

1. Be careful to choose the correct Apple executable according to the processor (Intel/Rosetta or Apple Silicon) you have 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 v1.10.5*](#)
3. If your Mac has an Apple Silicon processor, you can download the correct executable from here: [*macOS \(Apple Silicon\) Julia v1.10.5*](#)
4. Check your **Downloads** folder and drag it to the **Applications** folder
5. Installation completed.

Installing Julia on Linux

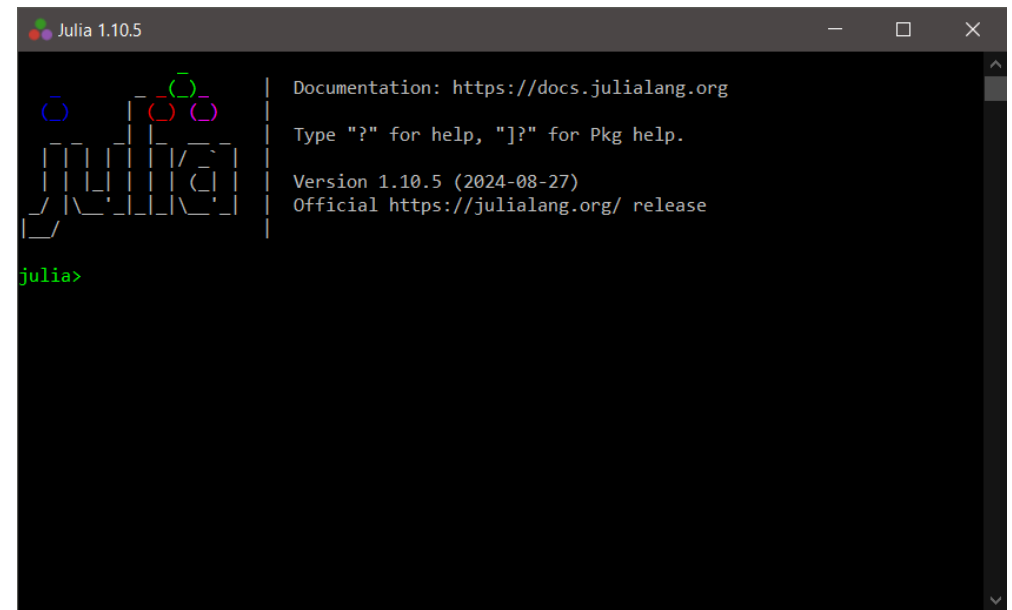
See detailed information available [here](#)

Running Julia

To start Julia, search for its icon on the desktop and click on it:



A black window like the following one will appear on your monitor:

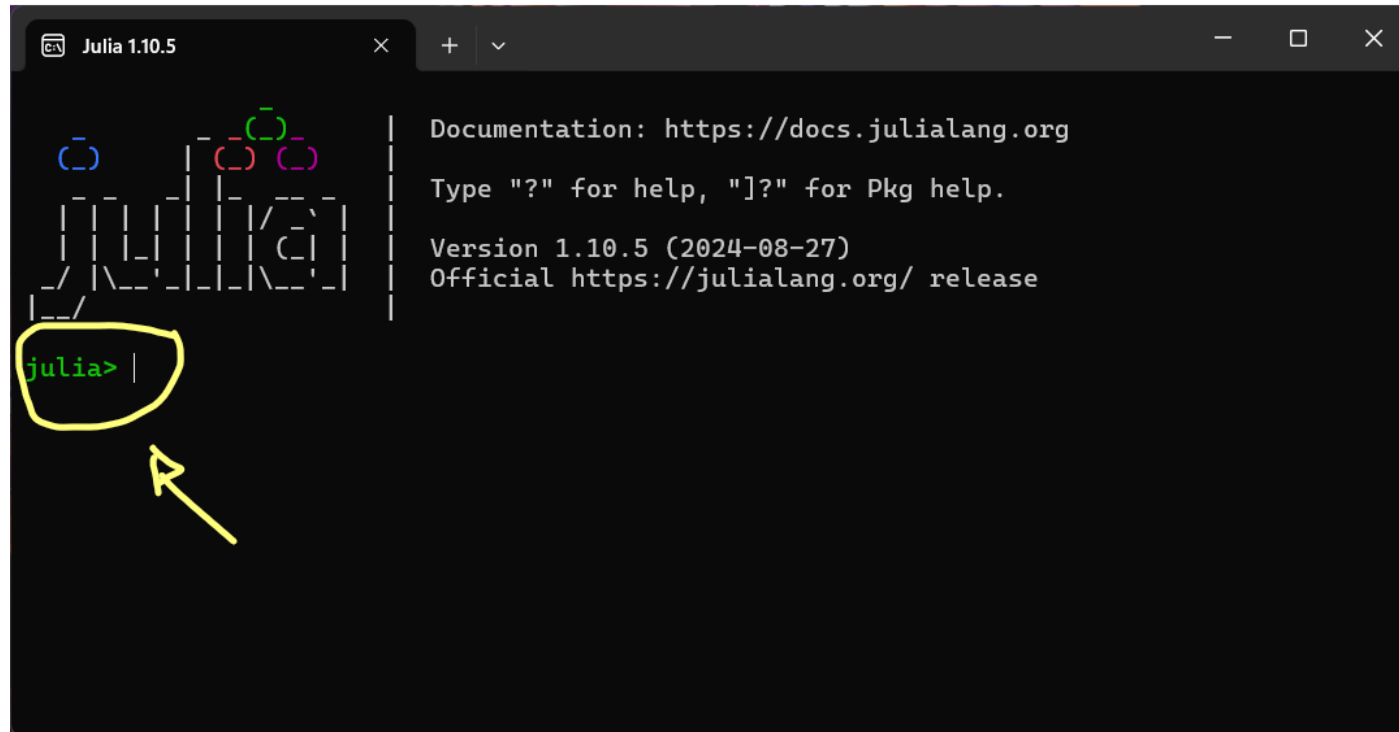


```
Julia 1.10.5
Documentation: https://docs.julialang.org
Type "?" for help, "]"? for Pkg help.
Version 1.10.5 (2024-08-27)
Official https://julialang.org/ release
julia>
```

- Julia runs in Two modes: *Julia mode* and *Pkg mode*

Julia mode

- When we start Julia, by default it runs in Julia mode, see **julia>** below



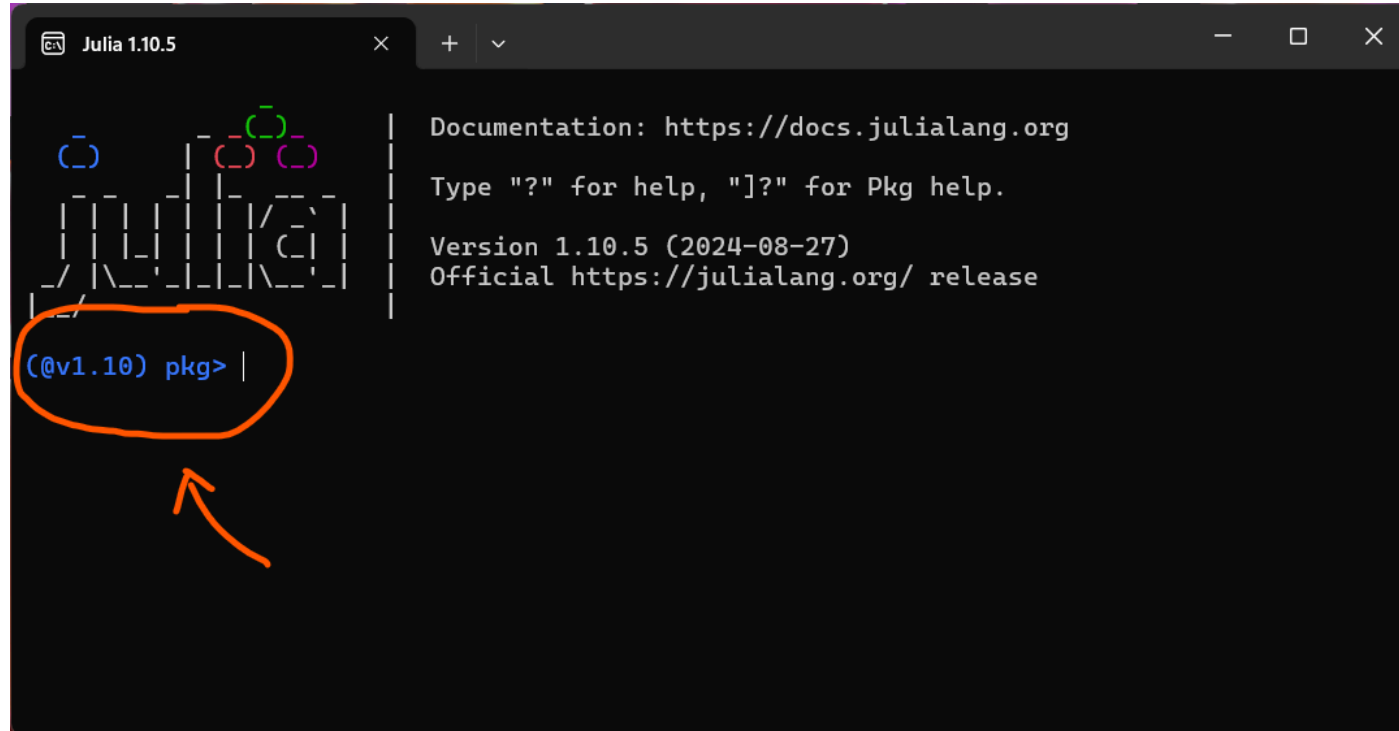
```
Julia 1.10.5
Documentation: https://docs.julialang.org
Type "?" for help, "]?" for Pkg help.
Version 1.10.5 (2024-08-27)
Official https://julialang.org/ release

julia> |
```

- If you type: **4+4** , followed by clicking on **Enter** , you will get 16 as the output.
- Julia mode is for doing computation. But for this task we will use **Pluto** instead.

Pkg mode

- To move from mode `julia>` to mode `(@v1.10) pkg>`, click on the keys:
 - `Alt Gr` and `9` (on Windows) or `Option` and `9` (on Mac)
- Now, we see `(@v1.10) pkg>` in the black window indicating the mode we have:



```
Julia 1.10.5
```

```
Documentation: https://docs.julialang.org
Type "?" for help, "]" for Pkg help.
Version 1.10.5 (2024-08-27)
Official https://julialang.org/ release

(@v1.10) pkg> |
```

- To go back to Julia mode, click on the keyboard's `Backspace`

2. Installing Pluto

Intalling Pluto

- Start Julia, if it is not already running
- Go to Pkg mode: `(@v1.10) 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 the keyboard's key: `Backspace`
- That is it: Pluto is installed on your computer.

3. Upgrading your installation

Upgrading Pluto


- From time to time, new versions of Pluto come out
- We recommend you to upgrade your Pluto installation every two weeks
- It is very simple and takes around 1 minute to upgrade it
- Start Julia and move to mode: `(@v1.10) pkg>`
- Once in Pkg mode, type:
 - `upgrade` followed by clicking on `Enter`
- Let the computer upgrade your system (you do not need to intervene during this process)
- When the upgrading is over, go back to mode `julia>` by clicking on the keyboard's key: `Backspace`.
- It is done.

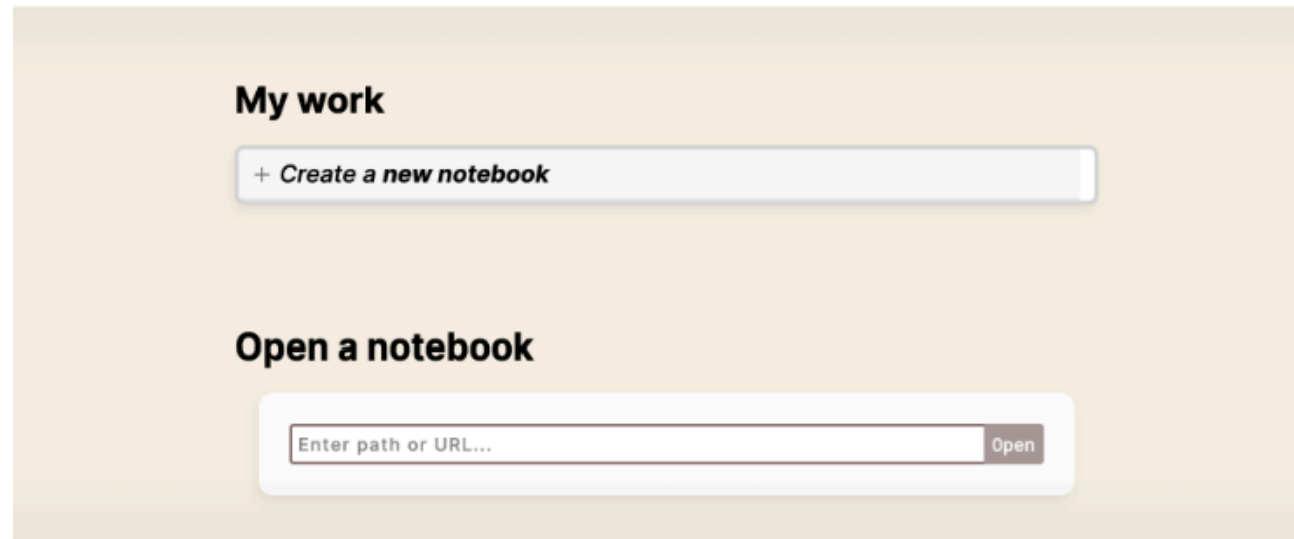
4. Using Pluto

See more detailed information available [here](#)

Starting Pluto

- Start Julia and keep it mode `julia>`
- Type the following text in its black window: `import Pluto; Pluto.run()`
- Click on `Enter` and Julia will open Pluto in your browser. You will get:

welcome to Pluto.jl 



Opening a Pluto notebook

- To open Pluto notebook, the double-click on top of the file *does not work*
- Neither do the usual drag-and-drop in Mac
- 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 the Path of your notebook

Windows	Mac
<ul style="list-style-type: none">- 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	<ul style="list-style-type: none">- 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 the Path of your notebook, you can Paste it into the **Open a notebook** box in 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)

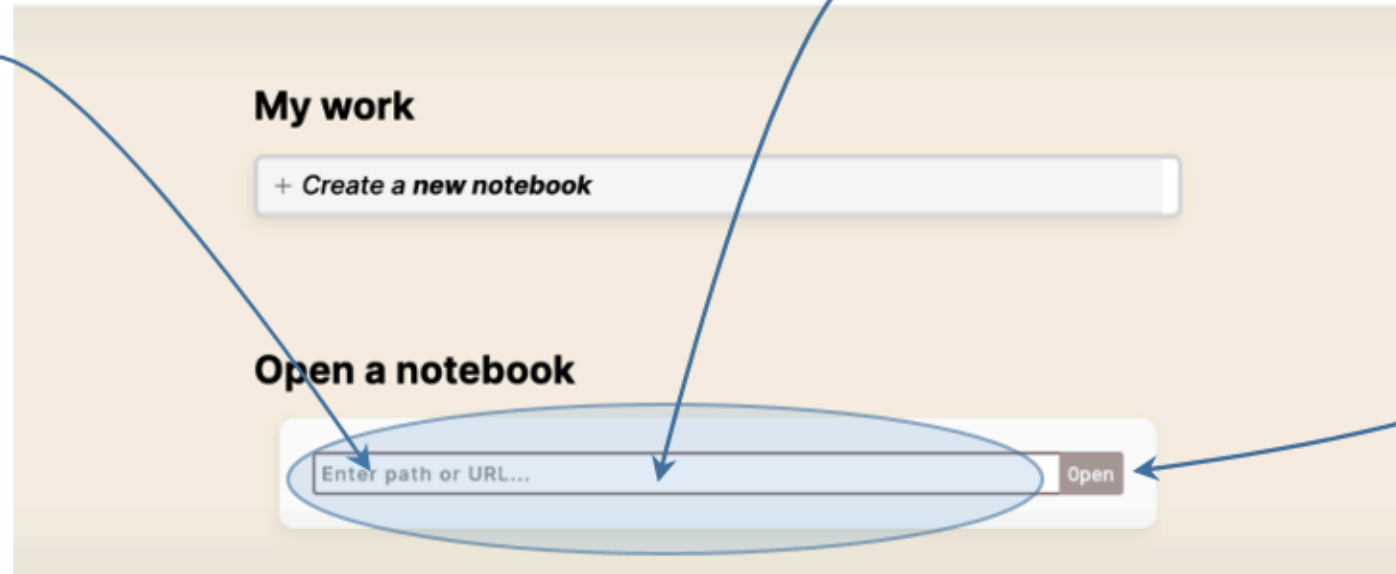
3. End the Path with a slash:

`\` (on Windows)

`/` (on Mac)

welcome to Pluto.jl 

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