

Introduction to Python Notebook

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Main Goal

- Introduce you to jupyter python notebook
- introduce you to markdown syntax

What is Jupiter Notebook

Jupyter Notebooks are a powerful way to write and iterate on your Python code for data analysis



What is Jupiter Notebook

- Interactive environment for writing and running code
- Mix of code, data, prose, equations, analysis, and visualization
- Tool for prototyping new code and analysis
- Reproducible workflow for scientific research

**Definitely It's a
wonderful tool for
you!**

Installation: the hard way

install and use on your PC

- step 1: Get Anaconda!

Anaconda python distribution

- Anaconda is a python distribution by Continuum Analytics.
- Anaconda is a completely free enterprise-ready Python distribution for large-scale data processing, predictive analytics, and scientific computing.
- Apart from that, Anaconda ships with easy-to-use installers for almost every platform, that would drastically reduce the burden of setting up the environment (exp. on Windows)

Get Anaconda

<https://www.continuum.io/downloads>



Run Jupiter Notebook

Open the terminal and type python3

```
jupyter notebook
```

- You should see the notebook open in your browser.
- `http://localhost:8888`

Jupyter Notebook: the easy way

Use an online service!

- <https://notebooks.azure.com>
- <https://cocalc.com>
- <https://colab.research.google.com>

Run on Free Co...

Search files, notebooks

Show hidden items

✓	<div></div>	Name	File Type	Modified On	Created On
	<div></div>	00 Programming Environment.ipynb	Notebook	Oct 8, 2019	
	<div></div>	01 Hello World.ipynb	Notebook	Oct 8, 2019	
	<div></div>	01 Introducing the IPython Notebook.ipynb	Notebook	Oct 8, 2019	
	<div></div>	02 Variable Strings and Numbers.ipynb	Notebook	Oct 8, 2019	
<div></div>	<div></div>	03 List and Tuples and Sets.ipynb	Notebook	Oct 8, 2019	
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	<div></div>	05 While Loops and User input.ipynb	Notebook	Oct 8, 2019	
	<div></div>	06 Dictionaries.ipynb	Notebook	Oct 8, 2019	
	<div></div>	07 Introduction to Functions.ipynb	Notebook	Oct 8, 2019	
	<div></div>	07 More Functions.ipynb	Notebook	Oct 8, 2019	

Showing 1 to 10 of 20 search results (1 hidden)

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1

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>

README.md

Writing and running code

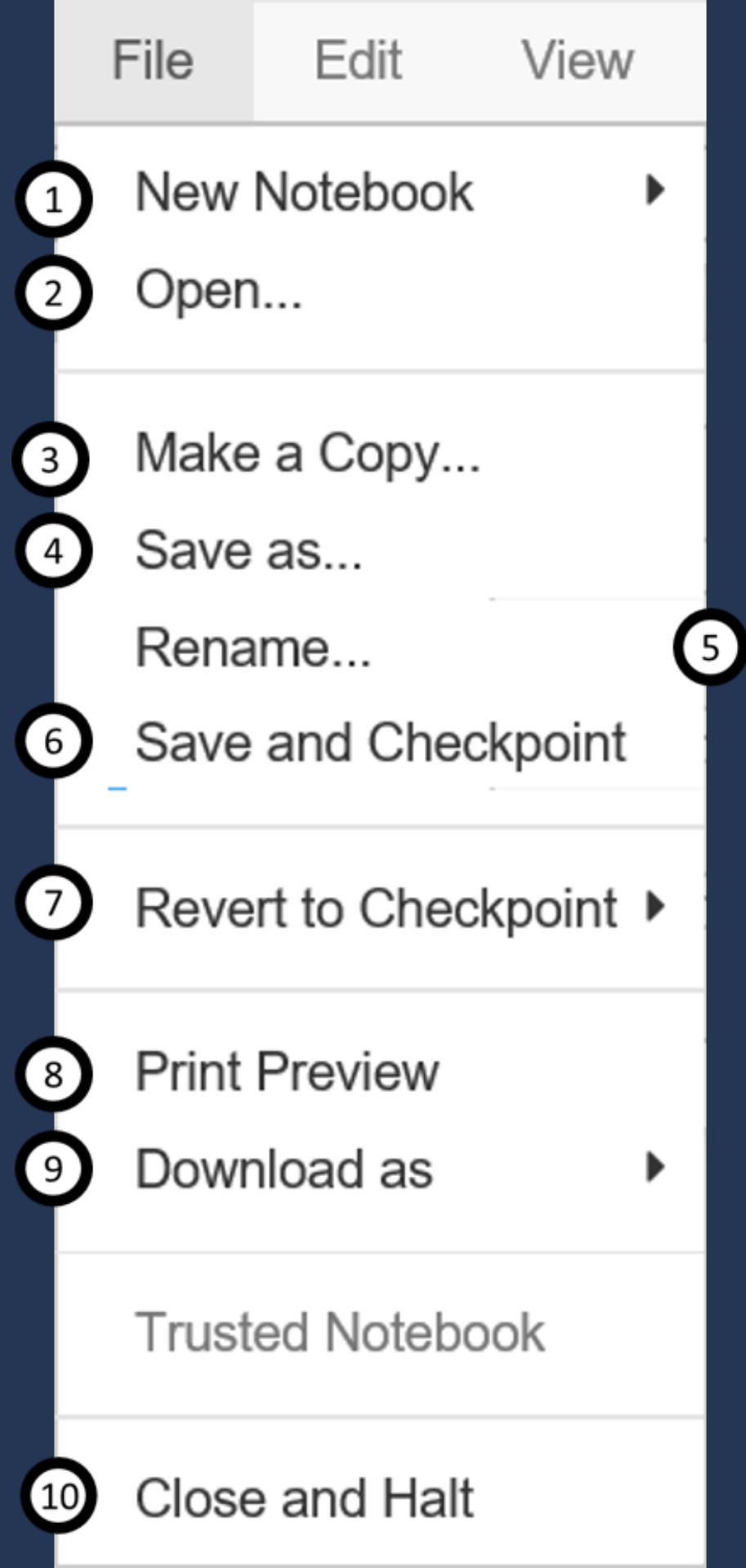
A python Notebook consists of an ordered list of cells

Main cell types:

- Code
- Markdown
- Raw

Basic operations

- edit a cell: double click or enter on it
- run a cell: Click on run button or ctrl + enter
- command mode: esc key or click outside cells



Saving/Loading notebooks

1. Create new Notebook
2. Open an existing Notebook
3. Make a Copy of the Current Notebook
4. Save current Notebook
5. Rename current Notebook
6. Save current Notebook and record Checkpoint
7. Revert Notebook to a previous checkpoint
8. Preview of the printed Notebook
9. Download Notebook as: Different export type
10. Close Notebook & stop running scripts

- 1 Cut Cells
- 2 Copy Cells
- 3 Paste Cells Above
- Paste Cells Below 4
- Paste Cells & Replace 5
- 6 Delete Cells
- 7 Undo Delete Cells
- 8 Split Cell
- 9 Merge Cell Above
- 10 Merge Cell Below
- Move Cell Up 11
- Move Cell Down 12

Edit Cells

1. Cut the selected Cells to clipboard
2. Copy cells from clipboard to current position
3. Paste cells from clipboard above current cell
4. Paste cells from clipboard below current cell
5. Paste cells from clipboard on top of current cell
6. Delete Cells
7. Revert 'Delete cells' invocation
8. Split up a cell from the current position
9. Merge current cell with the one above
10. Merge current cell with the one below
11. Move current cell up
12. Move current cell down

13 Edit Notebook Metadata

14 Find and Replace

15 Cut Cell Attachments

16 Copy Cell Attachments

Paste Cell Attachments 17

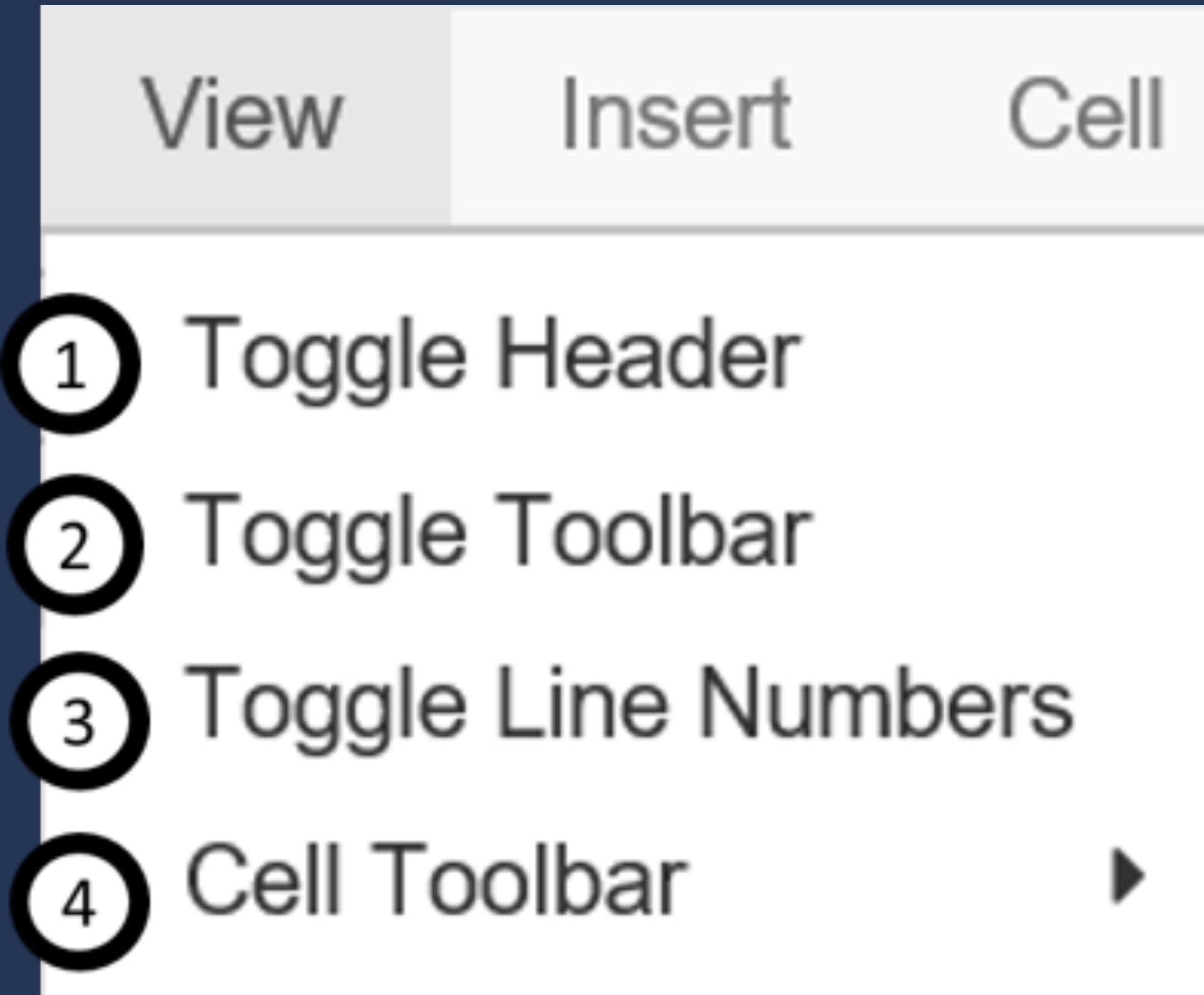
18 Insert Image

Edit Cells /2

1. Adjust metadata underlying the current notebook
2. Find and replace in selected cells
3. Remove cell attachments
4. Copy attachments of current cell
5. Paste attachments of current cell
6. Insert image in selected cells

View Cells

1. Toggle display of Jupyter logo and filename
2. Toggle display of toolbar
3. Toggle line numbers in cells
4. Toggle display of cell action icons:



Insert Cells

1. Add new cell above the current one
2. Add new cell below the current one



Cell

Kernel

Widgets

Execute Cells

1. Run selected cells
2. Run current cells down and create a new one below
3. Run current cells down and create a new one above
4. Run all cells
5. Run all cells above the current cell
6. Run all cells below the current cell
7. Change the cell type of current cell
8. Toggle, toggle scrolling and clear current outputs
9. Toggle, toggle scrolling and clear all output

- | Cell | Kernel | Widgets |
|------------------------------|--------|---------|
| 1 Run Cells | | |
| 2 Run Cells and Select Below | | |
| 3 Run Cells and Insert Below | | |
| Run All | | 4 |
| Run All Above | | 5 |
| 6 Run All Below | | |
| 7 Cell Type | | ▶ |
| 8 Current Outputs | | ▶ |
| 9 All Output | | ▶ |

Modal editor

Jupyter notebook has **modal user interface**

You can do different things depending on which mode the notebook is.

We have two modes:

- edit mode
- command mode

Edit mode

Indicated by a green cell border



```
In [2]: a = 10|
```

in this mode you can edit the cell like a normal editor

Command mode

indicated by a grey cell border



```
In [2]: a = 10
```

in command mode, you are able to edit the notebook as a whole

Not single cell.