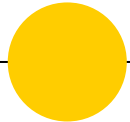


# Jupyter notebooks





## Cell type

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- **Code:** you write code
  - Live code
  - Interactive widgets
  - Plots
- **Markdown:** body-text, and contain markdown - you write text to organise your notebook
  - Narrative text
  - Equations
  - Images
  - Video
  - Embedded LaTeX equations
- **Raw NBConvert:** contents in raw cells are not evaluated by notebook kernel



# Shortcuts – Command Mode (press ESC)

**Ctrl-Cmd-S**: Show search dialog  
**F**: find and replace  
**Ctrl-Shift-F**: open the command palette  
**Ctrl-Shift-P**: open the command palette  
**Enter**: enter edit mode  
**P**: open the command palette  
**Shift-Enter**: run cell, select below  
**Ctrl-Enter**: run selected cells  
**Alt-Enter**: run cell and insert below  
**Y**: change cell to code  
**M**: change cell to markdown  
**R**: change cell to raw  
**1**: change cell to heading 1  
**2**: change cell to heading 2  
**3**: change cell to heading 3  
**4**: change cell to heading 4  
**5**: change cell to heading 5  
**6**: change cell to heading 6

**Shift-Down**: extend selected cells below  
**Shift-J**: extend selected cells below  
**A**: insert cell above  
**B**: insert cell below  
**X**: cut selected cells  
**C**: copy selected cells  
**Shift-V**: paste cells above  
**V**: paste cells below  
**Z**: undo cell deletion  
**D**, **D**: delete selected cells  
**Shift-M**: merge selected cells, or current cell with cell below if only one cell is selected  
**Ctrl-S**: Save and Checkpoint  
**S**: Save and Checkpoint  
**L**: toggle line numbers  
**O**: toggle output of selected cells  
**Shift-O**: toggle output scrolling of

**Up**: select cell above  
**Down**: select cell below  
**J**: select cell below  
**Shift-K**: extend selected cells above  
**Shift-Up**: extend selected cells above

**H**: show keyboard shortcuts  
**I**, **I**: interrupt the kernel  
**0**, **0**: restart the kernel (with dialog)  
**Esc**: close the pager  
**Q**: close the pager  
**Shift-L**: toggles line numbers in all cells, and persist the setting  
**Shift-Space**: scroll notebook up  
**Space**: scroll notebook down



## Shortcuts – Edit Mode (press Enter)

`Tab` : code completion or indent  
`Shift-Tab` : tooltip  
`Ctrl-]` : indent  
`Ctrl-[` : dedent  
`Ctrl-A` : select all  
`Ctrl-Z` : undo  
`Ctrl-/` : comment  
`Ctrl-D` : delete whole line  
`Ctrl-U` : undo selection  
`Insert` : toggle overwrite flag  
`Ctrl-Home` : go to cell start  
`Ctrl-Up` : go to cell start  
`Ctrl-End` : go to cell end  
`Ctrl-Down` : go to cell end  
`Ctrl-Left` : go one word left

`Ctrl-Right` : go one word right  
`Ctrl-Backspace` : delete word before  
`Ctrl-Delete` : delete word after  
`Ctrl-Y` : redo  
`Alt-U` : redo selection  
`Ctrl-M` : enter command mode  
`Ctrl-Shift-F` : open the command palette  
`Ctrl-Shift-P` : open the command palette  
`Esc` : enter command mode  
`Shift-Enter` : run cell, select below  
`Ctrl-Enter` : run selected cells  
`Alt-Enter` : run cell and insert below  
`Ctrl-Shift-Minus` : split cell at cursor  
`Ctrl-S` : Save and Checkpoint  
`Down` : move cursor down  
`Up` : move cursor up



## Notebooks checkpoints

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- Jupyter creates a checkpoint file every single time you create an `.ipynb` file
- It then updates the checkpoint file every single time you manually save your progress for the initial `.ipynb` (save and checkpoint)
- You can revert to the latest checkpoint



## Nb viewer

- Any public URL on or GitHub can be shared
- It renders it as a static web page
- <https://nbviewer.jupyter.org/>



## Markdown

**Headings:** Use #s followed by a blank space for notebook titles and section headings:

# title

## major headings

### subheadings

#### 4th level subheadings

**Emphasis:** Use this code: **Bold:** `__string__` or `**string**` *Italic:* `_string_`  
or `*string*`



## Markdown

---

**Mathematical symbols:** Use this code: `$ mathematical symbols $`

**Monospace font:** Surround text with a back single quotation mark. ( ` ) Use monospace for file path and file names and for text users enter or message text users see.

**Line breaks:** Sometimes markdown doesn't make line breaks when you want them. Use 2 spaces or this code for a manual line break: `<br>`





## Markdown

---

**Colors:** Use this code: `<font`

`color=blue|red|green|pink|yellow>Text</font>` Not all markdown code works within a font tag, so review your colored text carefully!

**Indented quoting:** Use a greater than sign (`>`) and then a space, then type the text. The text is indented and has a gray horizontal line to the left of it until the next carriage return.



## Markdown

---

**Bullets:** Use the dash sign ( `-` ) with a space after it, or a space, a dash, and a space ( `-` ), to create a circular bullet. To create a sub bullet, use a tab followed a dash and a space. You can also use an asterisk instead of a dash, and it works the same.

**Numbered lists:** Start with `1.` followed by a space, then it starts numbering for you. Start each line with some number and a period, then a space. Tab to indent to get subnumbering.



## Markdown

**Graphics:** You can attach image files directly to a notebook only in Markdown cells. Drag and drop your images to the Markdown cell to attach it to the notebook. To add images to other cell types, you can use only graphics that are hosted on the web. You can't add captions for graphics at this time. Use this code: ``

**Geometric shapes:** Use this code with a decimal or hex reference number from here: [UTF-8 Geometric shapes](#)

`&#reference_number;`



# Markdown

**Horizontal lines:** Use three asterisks: `***`

**Internal links:** To link to a section, use this code: `[section title]`  
`(#section-title)` For the text in the parentheses, replace spaces and special characters with a hyphen. Make sure to test all the links!

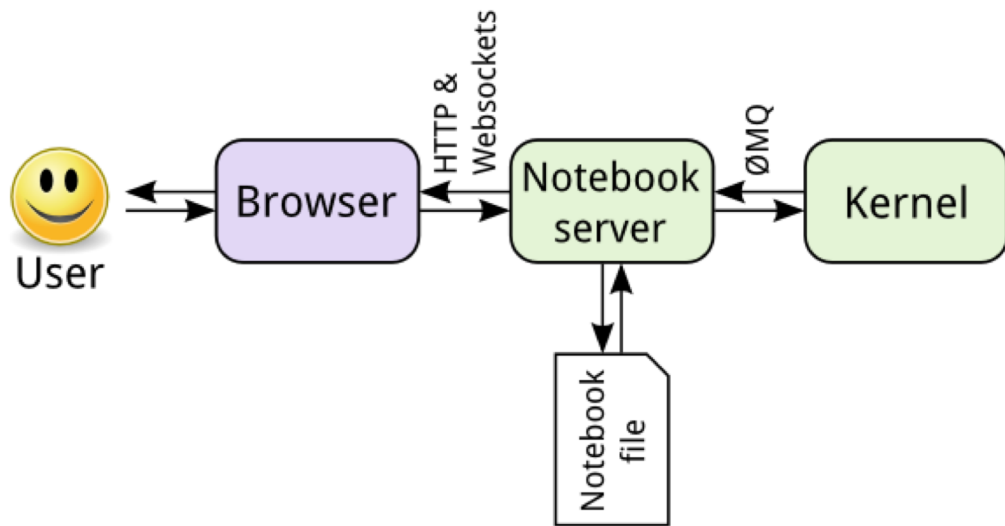
Alternatively, you can add an ID for a section right above the section title.  
Use this code: `<a id="section_ID"></a>` Make sure that the section\_ID is unique within the notebook.

Use this code for the link and make sure to test all the links! `[section title]`  
`(#section_ID)`

**External links:** Use this code and test all links! `[link text](http://url)`




## Notebooks architecture






# What is running?

 jupyter










[Files](#) [Running](#) [Clusters](#)

Currently running Jupyter processes 

Terminals ▾

There are no terminals running.

Notebooks ▾

 examples/Notebook/Index.ipynb	Shutdown
 examples/Notebook/What is the IPython Notebook.ipynb	Shutdown
 examples/Notebook/Running the Notebook Server.ipynb	Shutdown
 examples/Notebook/Notebook Basics.ipynb	Shutdown
 examples/Notebook/Running Code.ipynb	Shutdown
 examples/Notebook/Working With Markdown Cells.ipynb	Shutdown
 examples/Notebook/Custom Keyboard Shortcuts.ipynb	Shutdown
 examples/Notebook/JavaScript Notebook Extensions.ipynb	Shutdown
 examples/Notebook/Notebook Security.ipynb	Shutdown



## Exercise

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- *Create a notebook* which introduces someone and her/his holidays preference with a picture and a link to a youtube video
- *Explain the purpose* of the notebook with beautiful *markdown*!
- *Write a function* that inputs the user name
- *Add a photo* of you
- *Write a function* that inputs their holidays preference
- *Add a photo* of the holiday destination
- *Add a link* to a youtube video with the destination
- Remember to add *markdown* cells to introduce each part