

## Jupyter Notebook

Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. It is used for data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more.



## Saving/Loading Notebook

File Edit View

Open an existing Notebook → New Notebook → Create new Notebook

Save Current Notebook → Open... → Make copy of the current Notebook

Save Current Notebook & record Checkpoint → Make a Copy... → Rename current Notebook

Save Current Notebook & record Checkpoint → Save as... → Save and Checkpoint

Preview of the printed Notebook → Revert to Checkpoint → Revert Notebook to a previous Checkpoint

Close Notebook & stop running scripts → Print Preview → Download as → Download Notebook as-IPython Notebook Python HTML Markdown PDF

Close and Halt

## Edit Cells

Edit View Insert

Copy cells from Clipboard to current position → Cut Cells → Cut the selected cells to Clipboard

Paste cells below current cell → Copy Cells → Paste cells above current cell

Delete cells → Paste Cells Above → Paste cells on top of current cell

Split up cell from current position → Paste Cells Below → Revert 'Delete cells' invocation

Merge current cell with below → Paste Cells & Replace → Merge current cell with above

Move current cell down → Delete Cells → Move current cell up

Find and replace in selected cells → Undo Delete Cells → Adjust Metadata underlying the current Notebook

Copy attachments of current cell → Split Cell → Remove cell attachments

Insert image in selected cells → Merge Cell Above → Paste attachments of current cell

Insert Image

## View Cells

View Insert Cell

Toggle display of Toolbar → Toggle Header → Toggle display of Jupyter logo & Filename

Toggle display of cell action icons → Toggle Toolbar → Toggle line numbers in cell

Toggle Line Numbers

Cell Toolbar

## Insert Cells

Insert Cell Cell Kernel

Add new cell below the current one → Insert Cell Above → Add new cell above the current one

Insert Cell Below

## Keyboard Shortcuts

Command	Description
enter	enter edit mode
Command + a; Command + c; Command + v	select all; copy; paste
Command + z; Command + y	undo; redo
Command + s	save and checkpoint
Command + b; Command + a	insert cell below; insert cell above
Shift + Enter	run cell, select below
Shift + m	merge cells
Command + ]; Command + [	indent; dedent
Ctrl + Enter	run cell
Option + Return	run cell, insert cell below
Escape	enter command mode
Escape + d + d	delete selected cell
Escape + y	change cell to code
Escape + m	change cell to markdown
Escape + r	change cell to raw
Escape + 1	change cell to Heading 1
Escape + n	change cell to heading n
Escape + b	create cell below
Escape + a	Insert cell above

## Magic Commands

Statement	Explanation	Example
%magic	Comprehensively lists and explains magic functions	%magic
%automagic	When active, enables you to call magic functions without the '%'	%automagic
%quickref	Launch IPython quick reference	%quickref
%pastebin	Pastebins lines from your current session.	%pastebin 3 18-20 ~1/1-5
%debug	Enters the interactive debugger	%debug
%hist	Print command input and output history	%hist
%pdb	Automatically enter python debugger after any exception	%pdb
%cpaste	Opens up a special prompt for manually pasting Python code for execution	%cpaste
%reset	Delete all variables and names defined in the current namespace	%reset
%run	Run a python script inside a notebook	%run script.py
%who, %who_ls, %whos	Display variables defined in the interactive namespace, with varying levels of verbosity	%who, %who_ls, %whos
%xdel	Delete a variable in the local namespace. Clear any references to that variable	%xdel variable
%time	Times a single statement	In [561]: %time method = [a for a in data if b.startswith('http')]

## Execute Cells

Cell Kernel Widgets

Run Current Cells down & create one below → Run Cells → Run Selected Cells

Run all Cells → Run Cells and Select Below → Run Current Cells down & create one above

Run all Cells above the current one → Run Cells and Insert Below → Run all Cells below current one

Toggle & clear current outputs → Run All → Change the cell type

Run All Above → Toggle & clear all outputs

Run All Below

## Kernel Cells

Kernel Widgets Help

Restart Kernel → Interrupt → Interrupt kernel

Restart Kernel & Run all cells → Restart → Interrupt kernel & Clear all output

Shutdown all cells → Restart & Clear Output → Reconnect to a remote Notebook

Run other installed kernels → Restart & Run All

Change kernel

## Widgets

Widgets Help

Clear Notebook with Interactive widget → Save Notebook Widget State → Save Notebook with Interactive widget

Embed current widgets → Clear Notebook Widget State

Download Widget State → Download all widget models in use

Embed Widgets

## Help

Help

Built-in keyboard shortcuts → User Interface Tour → Walk through a UI Tour

Notebook help topics → Keyboard Shortcuts → Edit the Built-in keyboard shortcuts

Python help topics → Edit Keyboard Shortcuts

NumPy help topics → Notebook Help → Markdown available in Notebook

Matplotlib help topics → Python Reference → IPython help topics

Pandas help topics → NumPy Reference → SciPy help topics

SciPy Reference → Matplotlib Reference → SymPy help topics

SymPy Reference → pandas Reference

About → About Jupyter Notebook

# MARKDOWN SYNTAX



**Markdown** is a way to style text on the web. You control the display of the document; formatting words as bold or italic, adding images, and creating lists are just a few of the things we can do with Markdown. Mostly, Markdown is just regular text with a few non-alphabetic characters thrown in, like # or \*.

## HEADERS

```
# This is an <h1> tag
## This is an <h2> tag
##### This is an <h6> tag
```

## EMPHASIS

```
*This text will be italic*
_This will also be italic_

**This text will be bold**
__This will also be bold__

*You **can** combine them*
```

## BLOCKQUOTES

As Grace Hopper said:

```
> I've always been more interested
> in the future than in the past.
```

As Grace Hopper said:

```
| I've always been more interested
| in the future than in the past.
```

## LISTS

### Unordered

```
* Item 1
* Item 2
  * Item 2a
  * Item 2b
```

### Ordered

```
1. Item 1
2. Item 2
3. Item 3
  * Item 3a
  * Item 3b
```

## IMAGES

```
![GitHub Logo](/images/logo.png)
```

Format: ![Alt Text](url)

## LINKS

```
http://github.com - automatic!
```

```
[GitHub](http://github.com)
```

## BACKSLASH ESCAPES

Markdown allows you to use backslash escapes to generate literal characters which would otherwise have special meaning in Markdown's formatting syntax.

```
\*literal asterisks\*
```

```
*literal asterisks*
```

Markdown provides backslash escapes for the following characters:

\ backslash	() parentheses
` backtick	# hash mark
* asterisk	+ plus sign
_ underscore	- minus sign (hyphen)
{ curly braces	. dot
[] square brackets	! exclamation mark