Create, upload, and edit Jupyter Notebooks

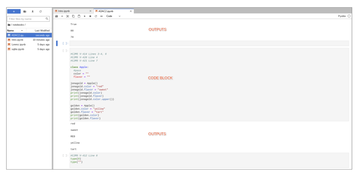
Jupyter Notebook is an open-source web application for creating and sharing documents containing live code, mathematical formulas, visualizations, and text. This is a great tool to practice developing and presenting code in a standardized text block format that is interactive and shareable. You can create code, mathematical formulas, data visualizations, and even freestyle text.

You will be using Jupyter Notebook to write, execute, and present your own code throughout this program. This reading will guide you through creating and uploading your own notebook; that way, you'll have everything you need to practice your Python skills in upcoming activities.

Jupyter Notebook

You can access Jupyter Notebook directly from your browser or download the desktop application onto your device to work with over 100 programming languages, including some you might already know like R and Python.

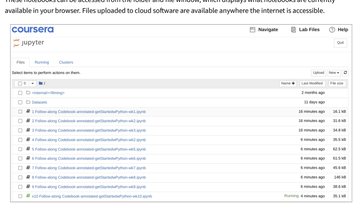
When you first access the Notebook interface, you can find both outputs and code in a horizontal block format. Select **View**|**Show Line Numbers** to view a code block's line number identification.



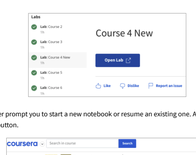
From here, you will be able to create or upload your own notebook to start coding.

Create a notebook

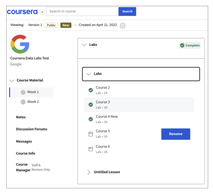
You can create and code new files directly in the Jupyter Notebook interface or upload files to work with from a drive. These notebooks can be accessed from the folder and file window, which displays what notebooks are currently available in your browser. Files uploaded to cloud software are available anywhere the internet is accessible.



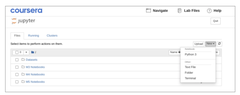
You can access the Jupyter Notebook for this program in Coursera's *Labs* section. If you have not previously been in a lab, select ***Open Lab***.



Coursera Labs will either prompt you to start a new notebook or resume an existing one. Access in-progress labs by selecting the ***Resume*** button.



Select **New** to create a new notebook.

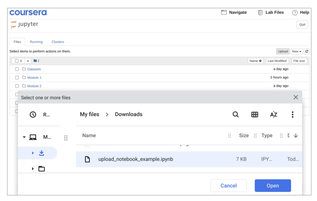


Make sure to select the ***Python 3*** engine for your notebook so that you are coding in the appropriate language.

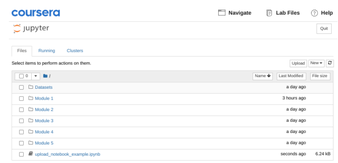
Upload a notebook

You can upload any Jupyter Notebook file or other file converted to a notebook. If the file doesn't have an .ipynb extension, it will need to be converted in the application creating the .py extension first. You can check out StackOverflow for more information about how to convert .py to .ipynb files. To upload a notebook to Coursera, click the **Upload** button and select it from your files.

Once you have selected the appropriate file, select open to import it.



By default, files are sorted alphabetically, but you can toggle this to sort by your most recent files instead.

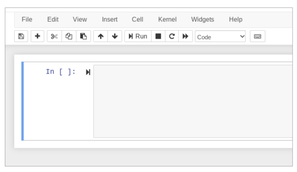


Double-click on the new notebook file to load it. **Click** the ***Run*** button when row [1] is selected to generate sample data. The following example illustrates lessons in Get Started with Python, including import libraries, using the Numpy library to generate random numbers, graph outputs, and view descriptive statistics.

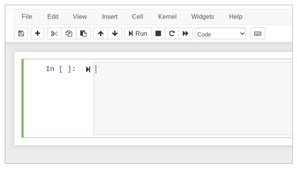
Command/edit mode

Notebooks have two working modes: command mode and edit mode. Command mode is used to interact with the notebook as a whole and perform actions like adding, moving, and deleting cells. Edit mode is used to type code or markdown text into a particular cell.

Command mode is indicated by a blue bar on the left side of the current cell.



Edit mode is indicated by a green bar on the left and also a thin green border around the active cell.



To enter into edit mode, simply click into a cell to insert your cursor there or use the navigation arrows on your keyboard to select a cell and press Enter. To revert back to command mode, click anywhere outside the cell or press the escape key.

Common actions

Most actions can be performed using both a mouse/graphic interface and keyboard shortcuts. Here are some of the most common actions.

Add a new cell

- Click on Insert in the menu bar at the top of the notebook. Options are to insert a new cell above or below the current cell.
- Keyboard shortcuts (while in command mode):
  - **a:** Insert a cell above the current cell
  - **b:** Insert a cell below the current cell

Delete a cell

- Use command mode to select a cell or group of cells.
- Click on Edit in the menu bar at the top of the notebook and select Delete Cells from the dropdown menu.
- Keyboard shortcut (while in command mode):
  - **dd** (press D two times)

Move a cell

- Use command mode to select a cell or group of cells.
- Click on the up arrow button or down arrow button in the menu bar at the top of the notebook to move the selected cell(s) up or down

Run a cell

- Select a cell and click the **Run** button in the menu bar at the top of the notebook.
- Keyboard shortcuts:
  - **Ctrl + Enter:** Run selected cell
  - **Shift + Enter:** Run selected cell and select next cell
  - **Alt + Enter:** Run selected cell and insert new cell below
- You can run cells from both command mode and edit mode

Press **h** while in command mode for a pop-up window with all available keyboard shortcuts. You can also check out Jupyter Notebook interface components for more detailed descriptions of various notebook features.

Key takeaways

Jupyter Notebook provides a coding platform where you can develop and debug your own code. Knowing how to use and interact with notebooks will prepare you for upcoming activities where you will try out new Python skills and prepare for the end-of-course project. Python will be a great tool in your toolkit—it will open up more advanced analytics tools like machine learning and automated analysis. And, using Jupyter Notebook will be a great way to build your Python knowledge!

Resources for more information

- Jupyter Notebooks interface training
- Jupyter software homepage
- Jupyter documentation
- Jupyter Notebooks cloud (online)
- Jupyter community forum
- Jupyter notebooks community forum
- Python community forum
- StackOverflow questions (crowdsource forum to help solve problems)
- Jupyter Notebooks installation

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