Getting Started With Google Colab

What is Colaboratory?

Colaboratory is a research tool for machine learning education and research. It's a **Jupyter notebook** environment that requires no setup to use.

Jupyter is the open source project on which Colaboratory is based. Colaboratory allows you to use and share Jupyter notebooks with others without having to download, install, or run anything on your own computer other than a browser.

it also allows absolutely anyone to develop deep learning applications using popular libraries such as ***PyTorch***, ***TensorFlow***, ***Keras***, and ***OpenCV***.

What can I do ?

You can

- create notebooks in Colab, upload notebooks, store notebooks, share notebooks
- mount your Google Drive and use whatever you've got stored in there
- import most of your favorite directories
- upload your personal Jupyter Notebooks, upload notebooks directly from GitHub, download your notebooks
- just about everything else that you might want to be able to do

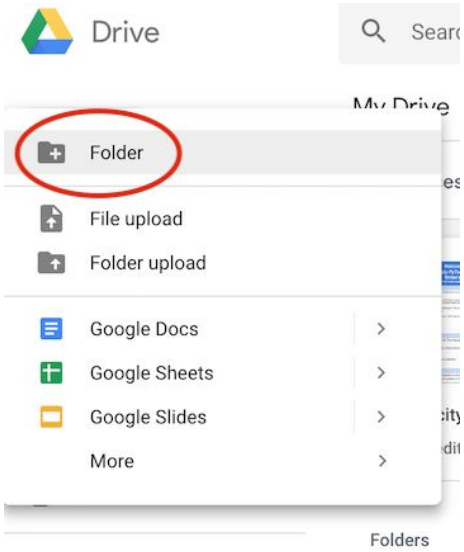
Colab a great way to dive into deep learning

What makes Colab a great way to dive into deep learning is that it includes pre-installed versions of TensorFlow and PyTorch, so you don’t have to do any setup beyond typing import torch, and every user can get free access to a NVIDIA T4 GPU for up to 12 hours of continuous runtime. For free.

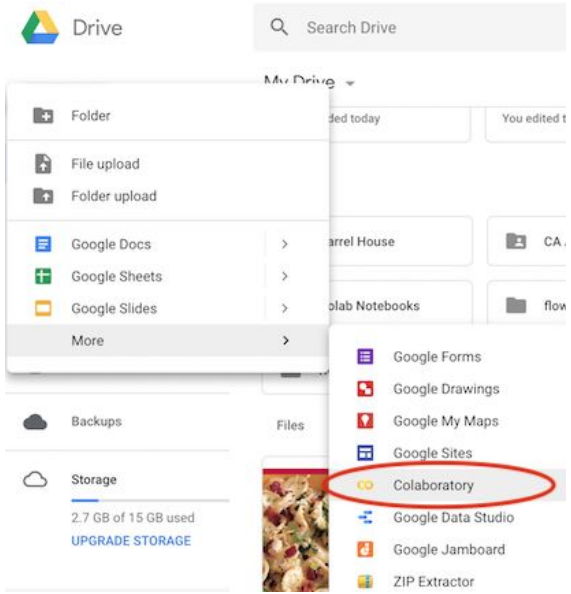
It also offers the ability to connect to more recent GPUs and Google’s custom TPU hardware in a paid option, but you can pretty much do every example in this book for nothing with Colab.

Setting up your drive

it’s not a bad idea to specify the folder where you want to work

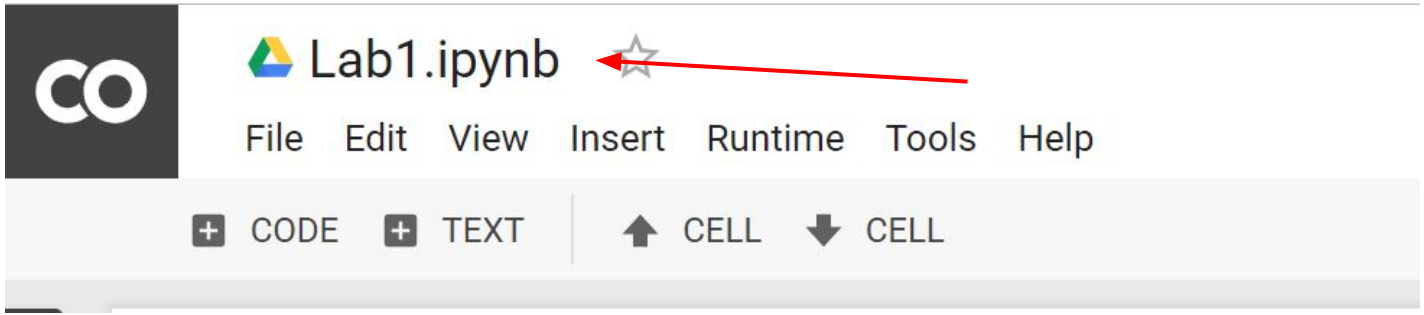


If you want, while you’re already in your Google Drive you can create a new Colab notebook.



Getting started

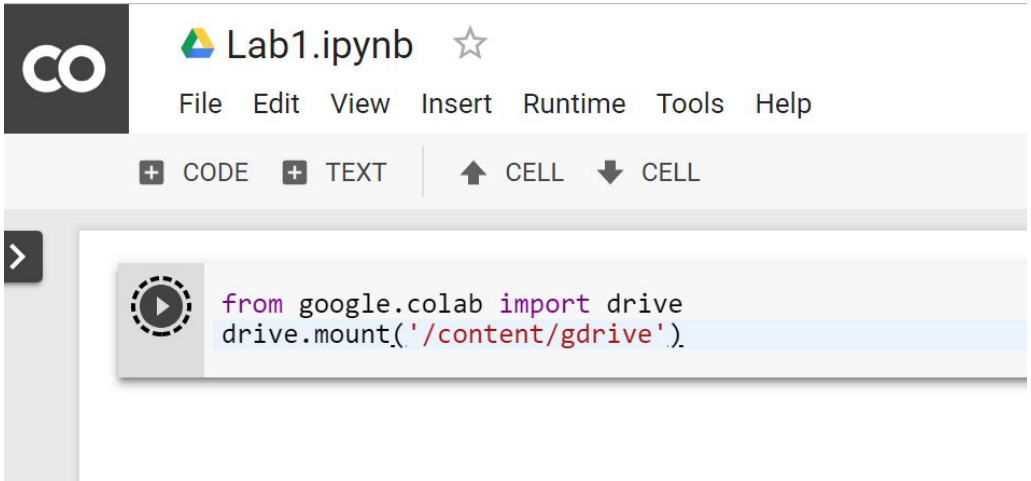
You can rename your notebook by clicking on the name of the notebook and changing it or by dropping the “File” menu down to “Rename.”



Mount your Google Drive (step 1)

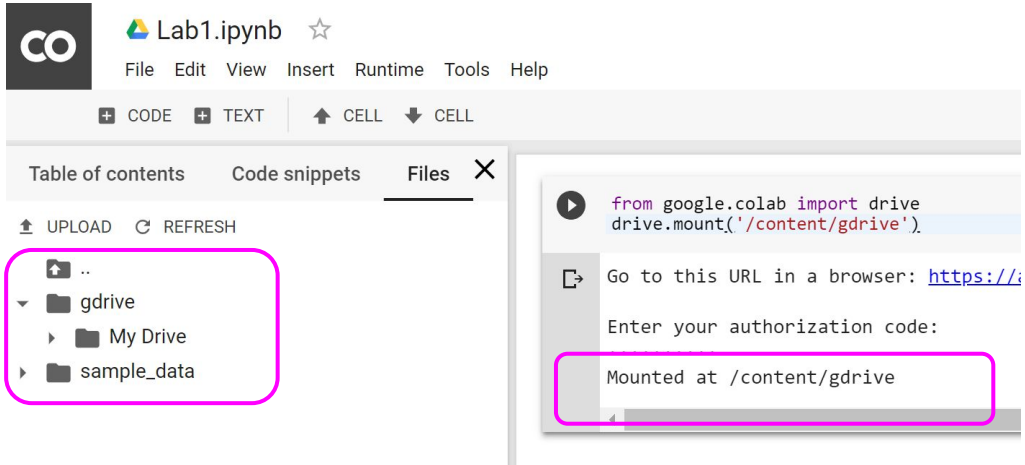
Use the following commands inside the Notebook

```
from google.colab import drive
drive.mount('/content/gdrive')
```



Mount your Google Drive (step 2)

Run the cell, click the link, copy the code on the page, paste it in the box, hit enter, and you'll see this when you've successfully mounted your drive.



Some useful commands (use !)

you can reach your drive any time with

```
!ls "/content/gdrive/My Drive/"
```

If you'd rather download a shared zip file link, you can use:

```
!wget -cq https://s3.amazonaws.com/content.udacity-data.com/courses/nd188/flower_data.zip
```

```
!unzip -qq flower_data.zip
```

Importing libraries

For the most part, you can import your libraries by running import like you do in any other notebook.

```
# Import resources
%matplotlib inline
%config InlineBackend.figure_format = 'retina'

import time
import json
import copy

import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
import PIL

from PIL import Image
from collections import OrderedDict


import torch
from torch import nn, optim
from torch.optim import lr_scheduler
from torch.autograd import Variable
import torchvision
from torchvision import datasets, models, transforms
from torch.utils.data.sampler import SubsetRandomSampler
import torch.nn as nn
import torch.nn.functional as F

import os
```

Try a pip install!

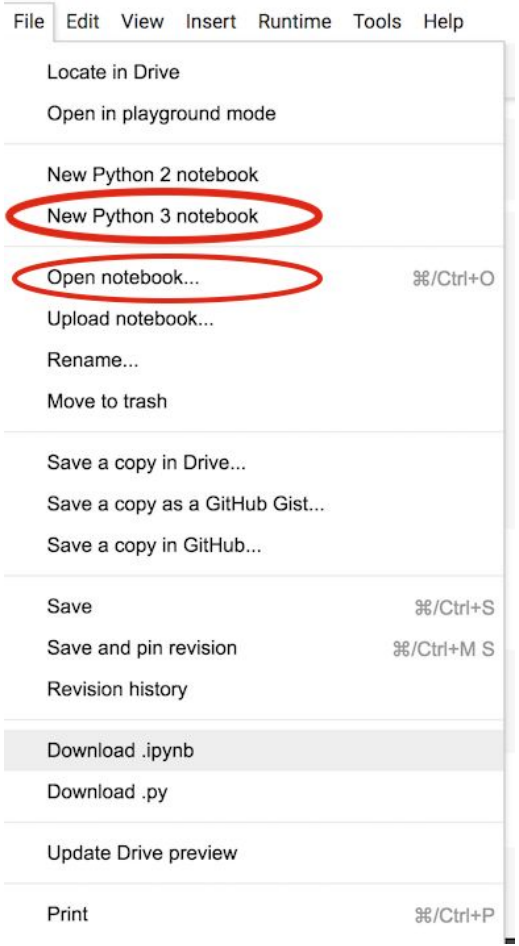
Just be aware that Google Colab wants an exclamation point before most commands.

```
!pip install -q keras
```

```
import keras
```

Adding new notebooks

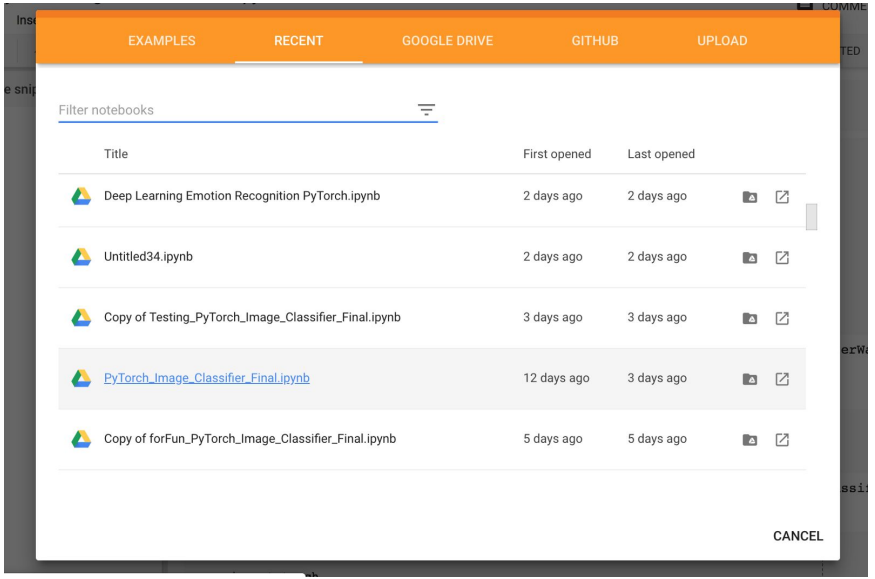
It’s easy to create a new notebook by dropping “File” down to “New Python 3 Notebook.” If you want to open something specific, drop the “File” menu down to “Open Notebook…”



Adding new notebooks

Then you'll see a screen that looks like this:

As you can see, you can open a recent file, files from your Google Drive, GitHub files, and you can upload a notebook right there as well.



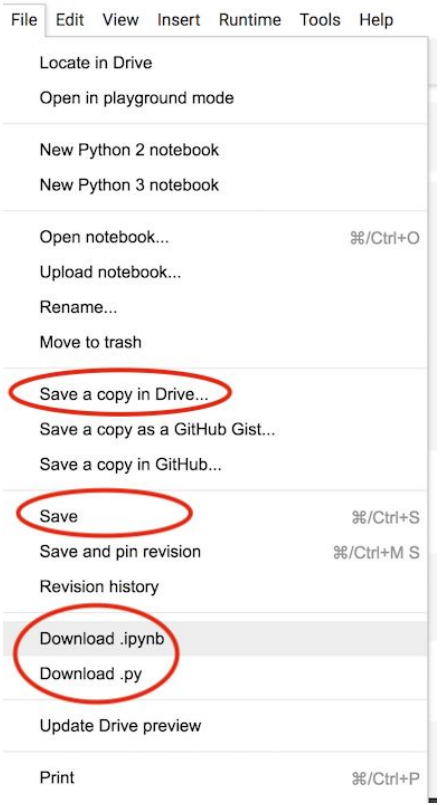
Saving notebooks

Saving your work is simple!

You can do a good ol' "command-s".

You can create a copy of your notebook by dropping "File" -> "Save a Copy in Drive."

You can also download your workbook by going from "File" -> "download .ipyb" or "download .py."



Learn more

https://colab.research.google.com/notebooks/basic_features_overview.ipynb

https://jupyter.org/