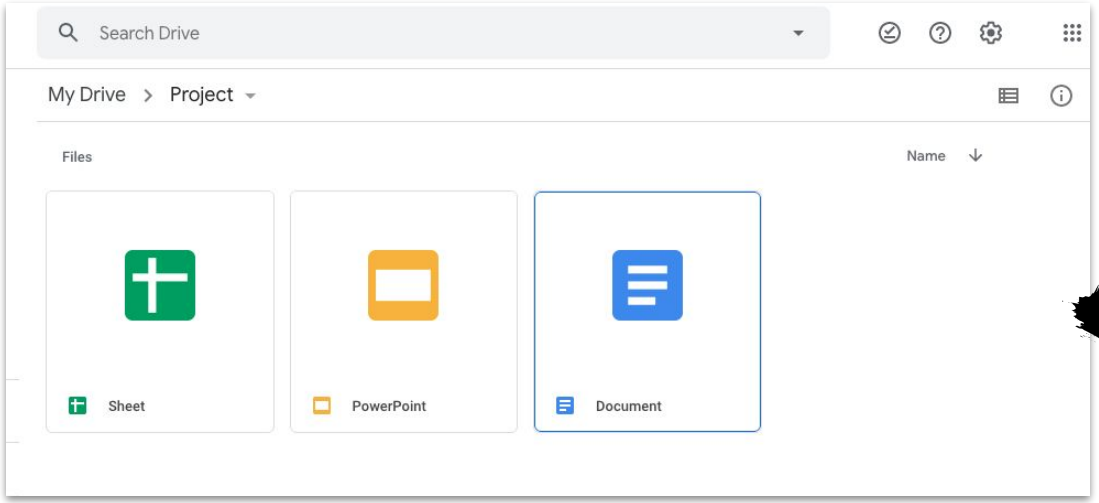
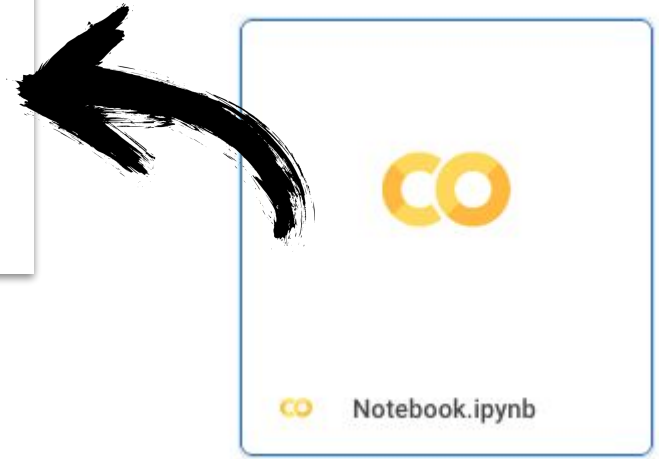
Colab

or

Now You Can Share Your Notebook Files on Google Drive

Almost Nothing New...



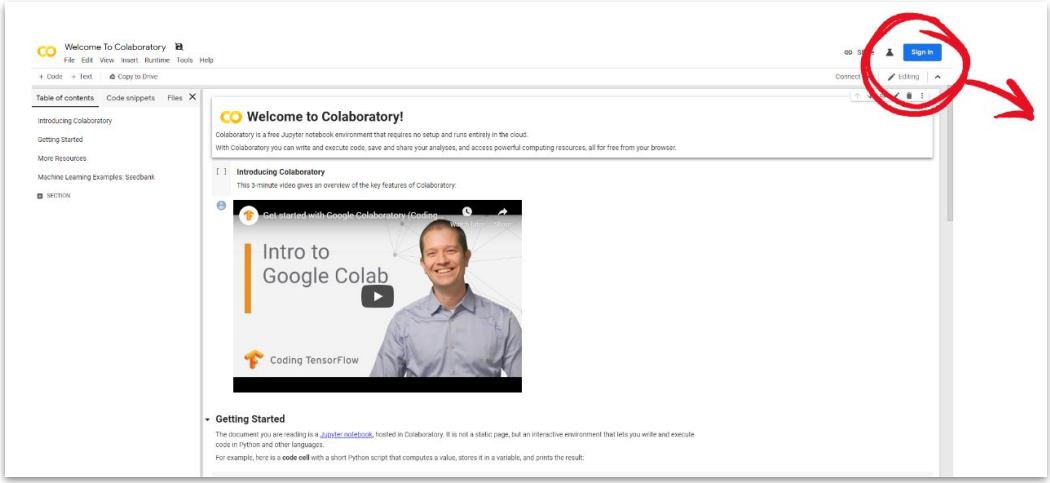


Now you can share your Jupyter Notebook files on Google Drive, just like the way you share documents, sheets, and powerpoints.

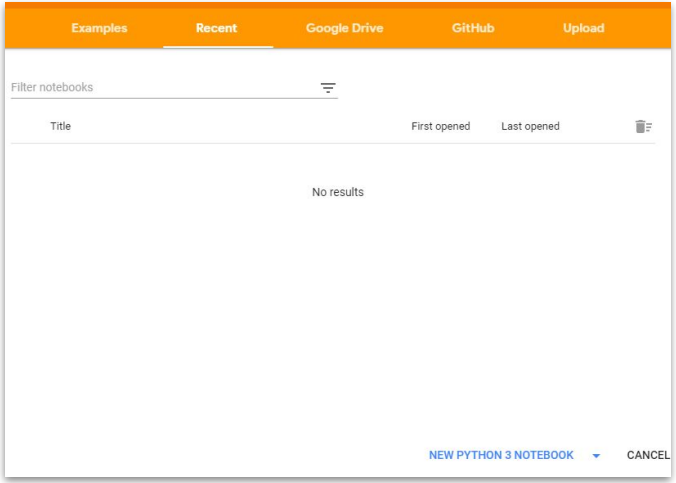
Where to Start?

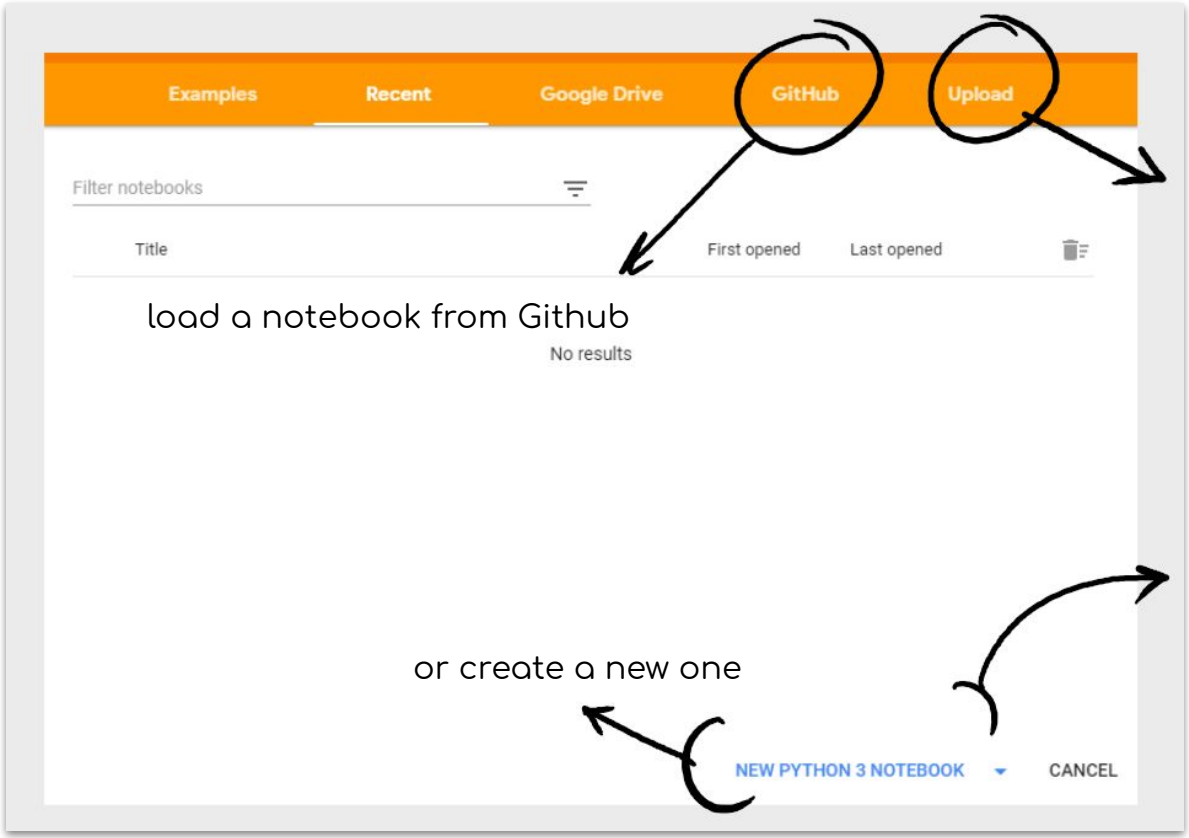
The first time, you need to visit this link https://colab.research.google.com/

In case you are not signed in your Google account:



and after signing in:

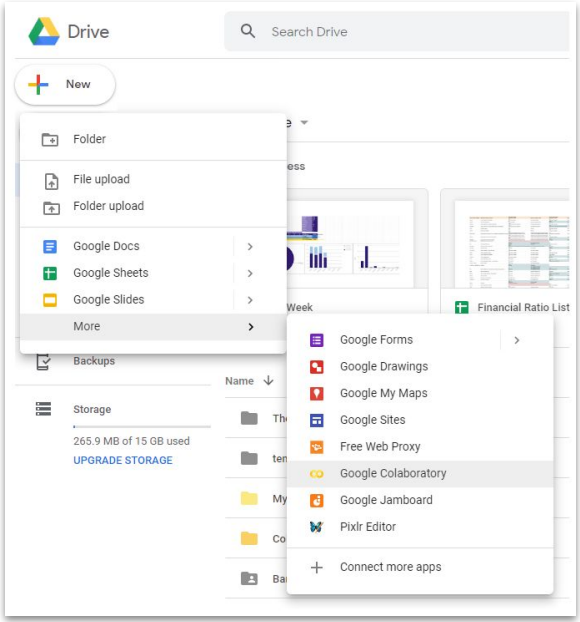




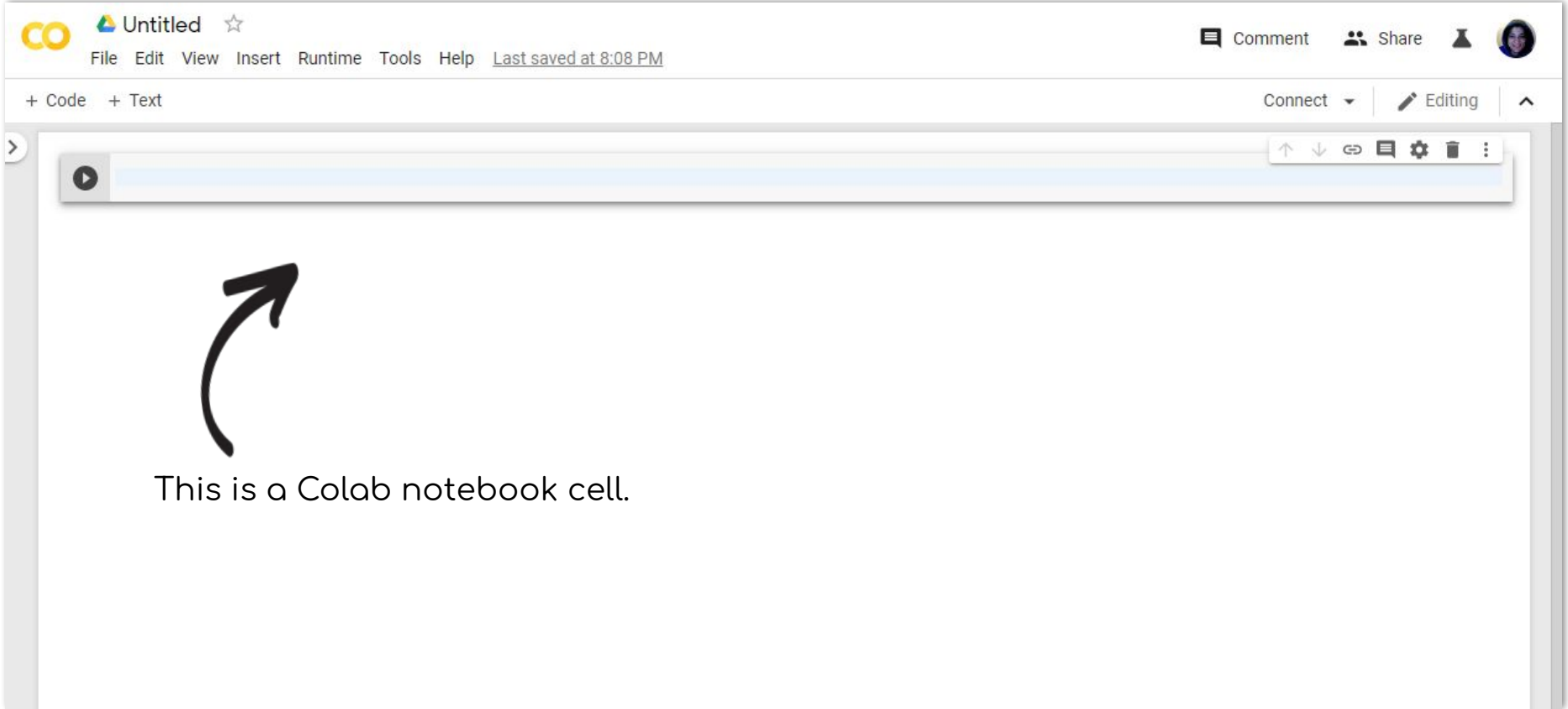
upload a local notebook

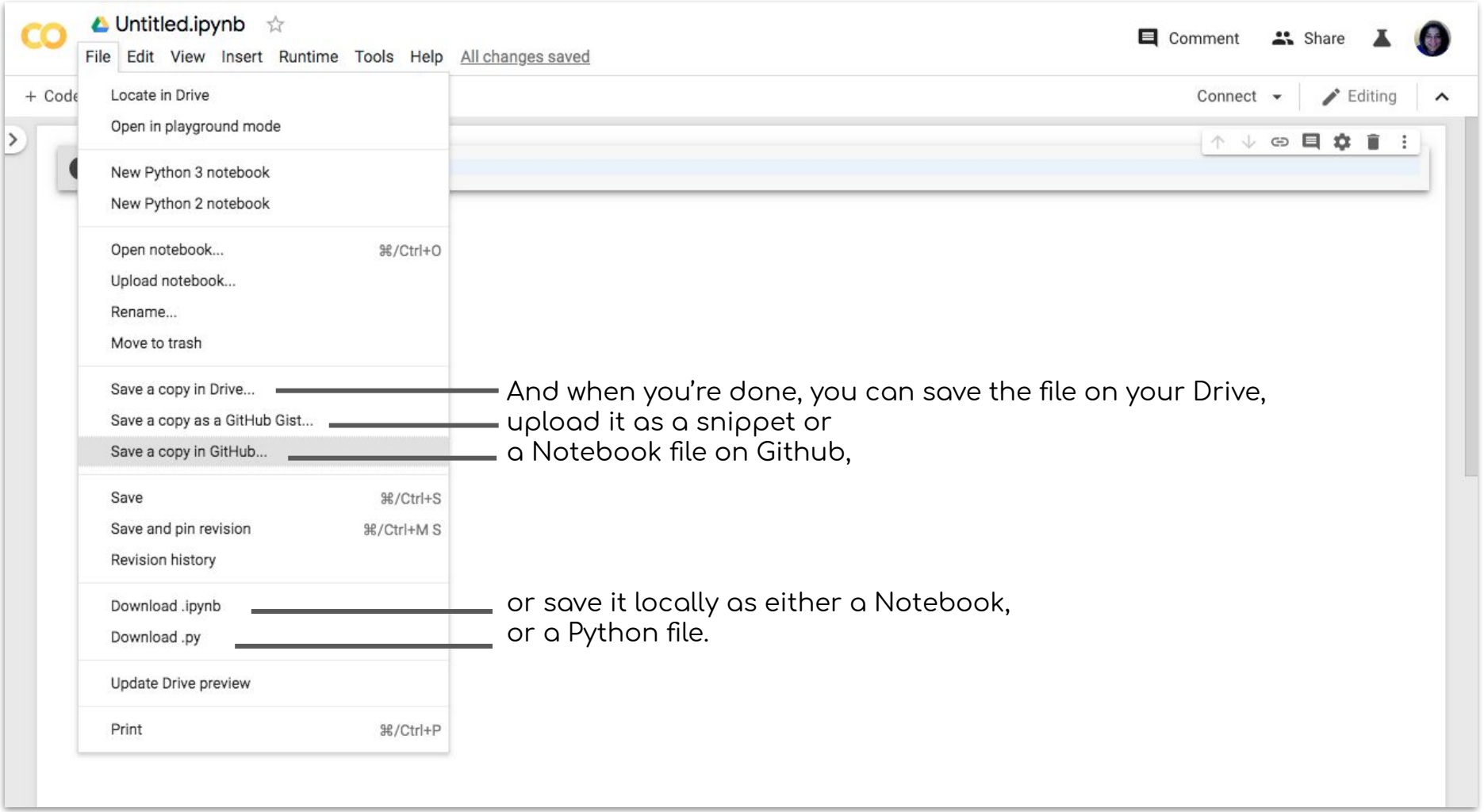
load a notebook from Github

or create a new one



This is what your newly created notebook file looks like




Untitled.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment Share
Connect Editing
Locate in Drive
Open in playground mode
New Python 3 notebook
New Python 2 notebook
Open notebook... ⌘/Ctrl+O
Upload notebook...
Rename...
Move to trash
Save a copy in Drive...
Save a copy as a GitHub Gist...
Save a copy in GitHub...
Save ⌘/Ctrl+S
Save and pin revision ⌘/Ctrl+M S
Revision history
Download .ipynb
Download .py
Update Drive preview
Print ⌘/Ctrl+P
And when you're done, you can save the file on your Drive,
upload it as a snippet or
a Notebook file on Github,
or save it locally as either a Notebook,
or a Python file.

So, Why Colab?

- It's a full option!
- You can share
- Cloud computing for free
- It's the fun version of Jupyter Notebook

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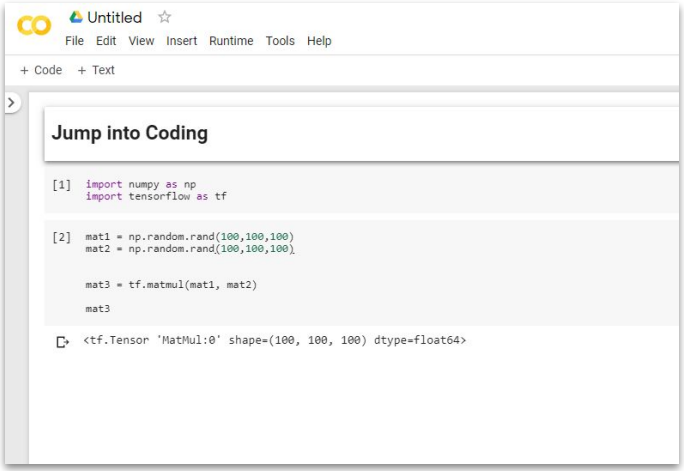

You don't need to install ANYTHING (at least for this course); nor you need to deal with different environments on your system.

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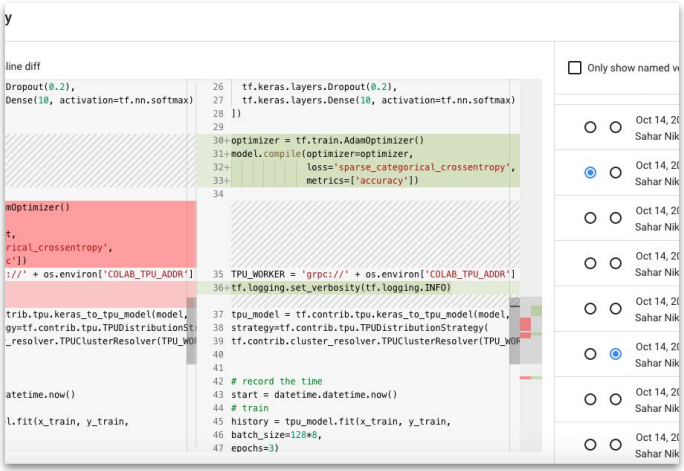

You can collaborate in Notebook framework, while having access to an amazing version control interface, unlike Github's mess with Notebook files.

You can add Colab Notebooks directly to Git repos.

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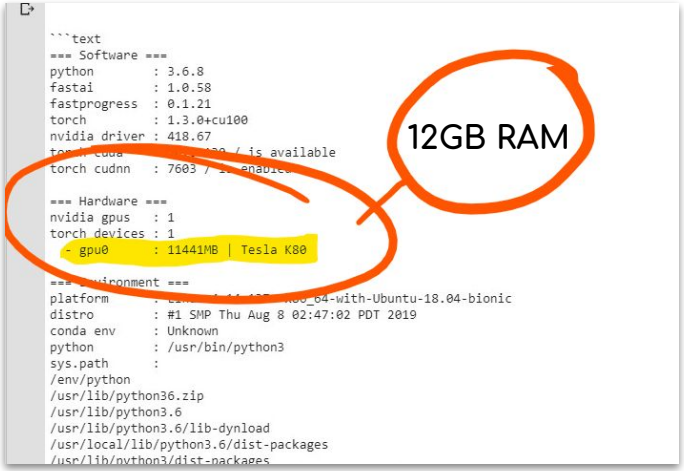


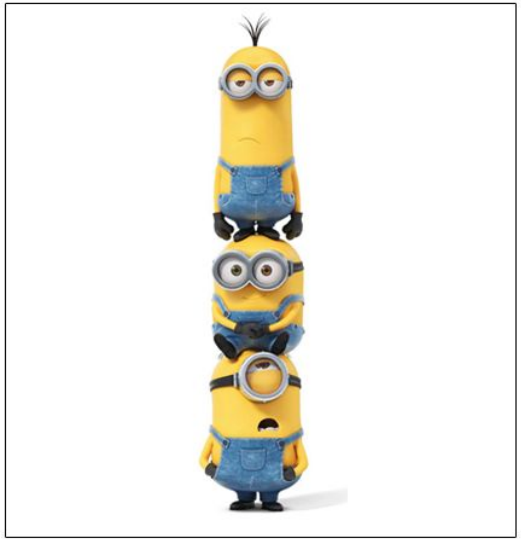
You have free access to 12GB of RAM and can work with the NVIDIA Tesla K80 GPU.

CPU, GPU, and TPU

CPU

One guy, capable of doing any task, but, obviously, only one at a time

Working unit: Scaler



GPU

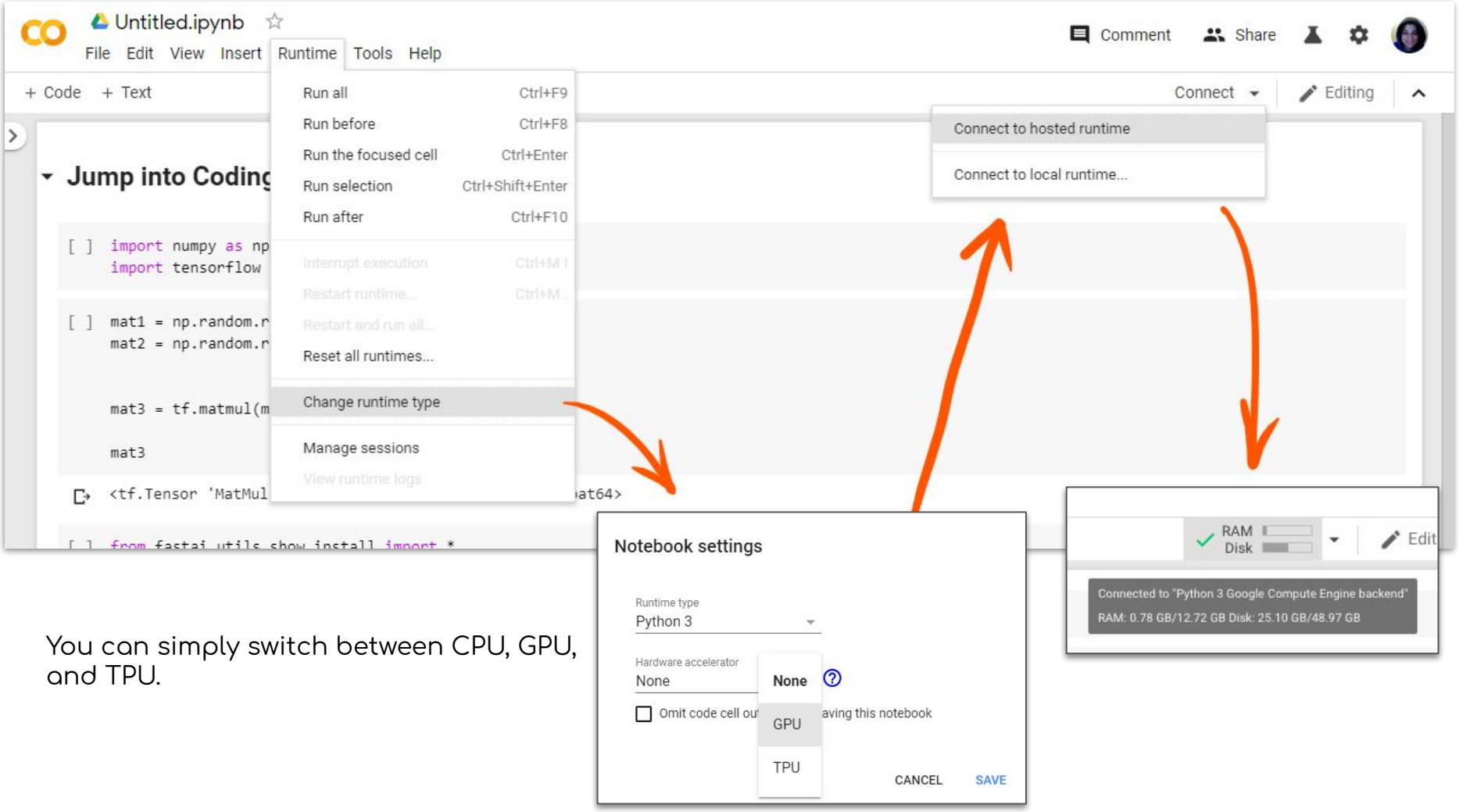
Bunch of guys, doing a few specialized tasks; can do the same task with many different values, simultaneously

Working unit: Vector

TPU

Special unit, called MXU, designed for matrix multiplication

Working unit: Matrix



You can simply switch between CPU, GPU, and TPU.

Drawbacks

- Don’t leave the Colab open, for lunch if your lunchtime is more than 90 minutes
- Even if you skip lunch and also dinner, *runtime* will reset after 12 hours
- Employing maximum TPU power needs you to change your model
- Heavy computations? Google will restrict your access temporarily

Conclusion: Not good for research, but wonderful for school
Use it wisely, and it’s probably enough for your final project

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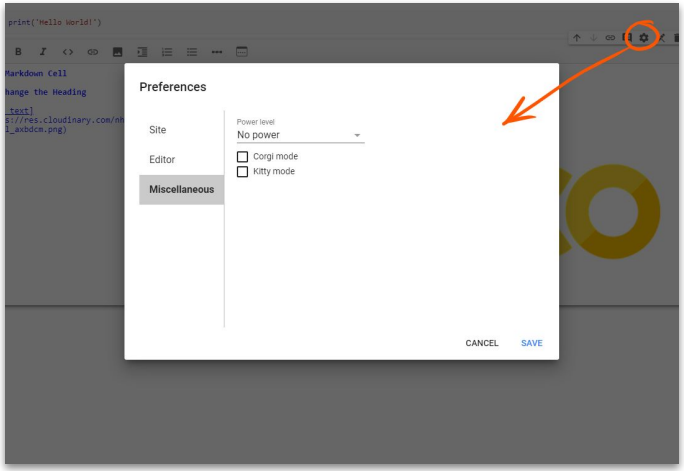

- Link to cells
- Comments
- User-friendly markdowns with realtime preview
- Automate search offer on Stack Overflow
- Automate offer for code samples
- ...

And whenever you're bored, stuck, and tired, don't forget to play with **Miscellaneous** options in **Preference**

How to Submit Homework Using Colab?

- For each interested Group, a folder will be created and shared with the members on Google Drive
- Every week, the homework Colab notebook will be uploaded in those folders
- You work on those files and that's about it!
- After the deadline, your share mode will be changed to view only
- After the grading is done, you'll be back to editor mode
- Local notebook files and Colab notebooks are easily and neatly convertible, so even if one member of a group is interested to work with Colab, it is still possible for the group to submit the homework using Colab

- If interested, send an email including, at least, one Google account username plus the group number to Luke

TensorFlow 2.0.0

```
import tensorflow as tf
print(tf.__version__)
```

```
The default version of TensorFlow in Colab will soon switch to TensorFlow 2.x.
We recommend you upgrade now or ensure your notebook will continue to use TensorFlow 1.x via the %tensorflow_version 1.x magic: more info.
1.15.0
```

You should run this line magic before importing tensorflow.

So if you already ran the cell for importing TF, you need to reset the runtime, then run the line magic and import TF afterward.

```
[1] %tensorflow_version 2.x
TensorFlow 2.x selected.
import tensorflow as tf
print(tf.__version__)
2.0.0
```

Thanks and Questions