

# COMP3057

## Overview of PyTorch and CoLab

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# Introduction to AI platform

- Caffe: Developed by UC Berkeley, written in C++ with Python interface. No one use it.
- Tensorflow: Developed by Google. Deploy the ML model using Python
- Torch: Created by EPFL in lua. My first Deep Learning Platform! No one use it and update it.
- **Pytorch**: Created by Facebook based on Torch. Very popular now.
- Mindspore: Created by Huawei. Looks similar to Pytorch. HUAWEI uses it.
- PaddlePaddle: Created by Baidu. Baidu likes it but no one uses it.
- Google JAX: Created by Google, which uses it very often in their own papers. No one uses them at this moment.

# PyTorch

- People all over the world are using it for research.



## PyTorchDiscuss

Browse and join discussions on deep learning with PyTorch.



## Slack

Discuss advanced topics. Request access: <https://bit.ly/ptslack>



## 中文文档

Docs and tutorials in Chinese, translated by the community.



## 파이토치(PyTorch)

Tutorials in Korean, translated by the community.



## 日本語(PyTorch)

Tutorials in Japanese, translated by the community.



## Maintainers

Learn about the PyTorch core and module maintainers.



## ContributionGuide

Learn how you can contribute to PyTorch code and documentation.



## DesignPhilosophy

PyTorch design principles for contributors and maintainers.



## Governance

Learn about the PyTorch governance hierarchy.

# PyTorch

- Companies all over the world are using it for research.

## COMPANIES & UNIVERSITIES USING PYTORCH

amazon advertising

Reduce inference costs by 71% and drive scale out using PyTorch, TorchServe, and AWS Inference.

[Learn More >](#)



Pushing the state of the art in NLP and Multi-task learning.

[Learn More >](#)



Using PyTorch's flexibility to efficiently research new algorithmic approaches.

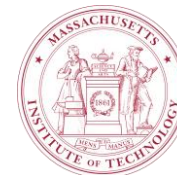
[Learn More >](#)



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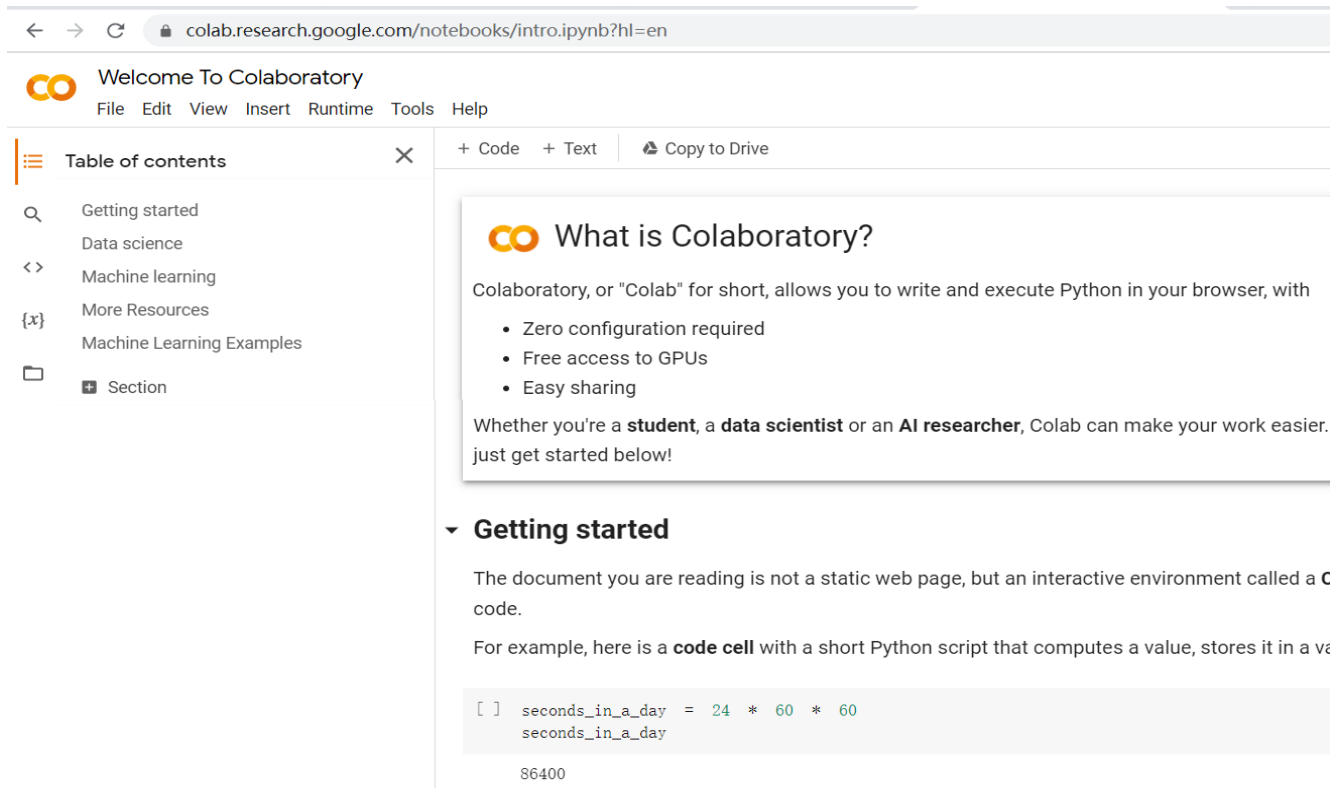


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AND TECHNOLOGY



# PyTorch in Google Colab

- We use Colab for teaching. You are free to try any platforms you like.



The screenshot shows the Google Colaboratory web interface. The browser address bar displays `colab.research.google.com/notebooks/intro.ipynb?hl=en`. The interface includes a 'Welcome To Colaboratory' header with a menu (File, Edit, View, Insert, Runtime, Tools, Help). On the left, a 'Table of contents' sidebar lists sections like 'Getting started', 'Data science', 'Machine learning', 'More Resources', 'Machine Learning Examples', and 'Section'. The main content area features a 'What is Colaboratory?' section with a list of benefits: 'Zero configuration required', 'Free access to GPUs', and 'Easy sharing'. Below this, a 'Getting started' section explains that the environment is interactive and shows a code cell with a Python script that calculates the number of seconds in a day (24 \* 60 \* 60), resulting in 86400.

colab.research.google.com/notebooks/intro.ipynb?hl=en

Welcome To Colaboratory

File Edit View Insert Runtime Tools Help

Table of contents

- Getting started
- Data science
- Machine learning
- More Resources
- Machine Learning Examples
- Section

+ Code + Text Copy to Drive

## What is Colaboratory?

Colaboratory, or "Colab" for short, allows you to write and execute Python in your browser, with

- Zero configuration required
- Free access to GPUs
- Easy sharing

Whether you're a **student**, a **data scientist** or an **AI researcher**, Colab can make your work easier. just get started below!

### Getting started

The document you are reading is not a static web page, but an interactive environment called a **C** code.

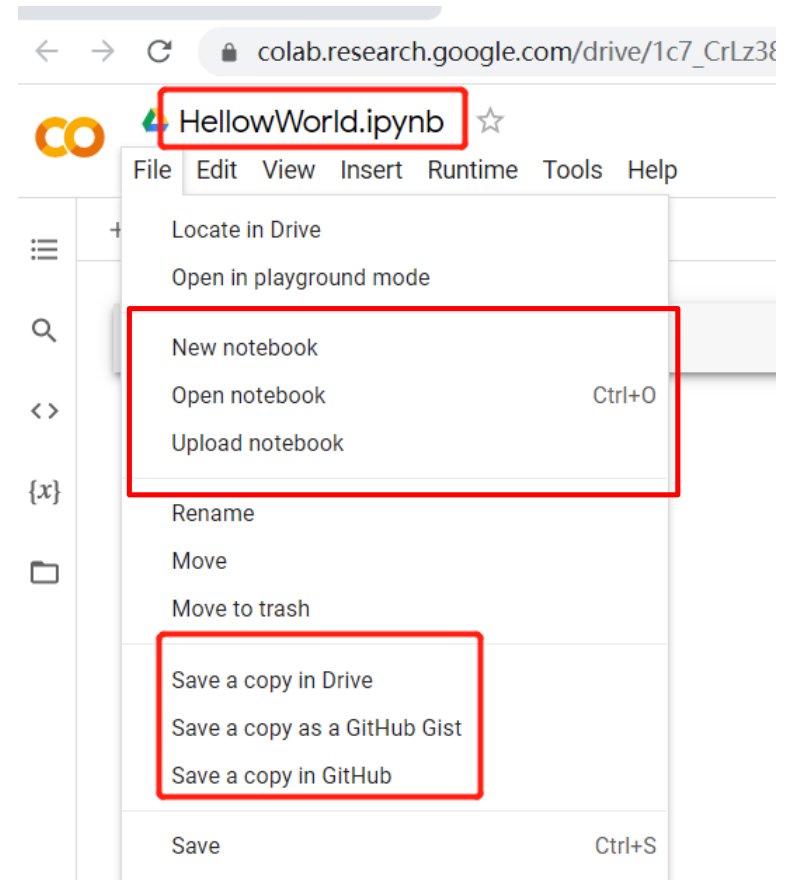
For example, here is a **code cell** with a short Python script that computes a value, stores it in a variable

```
[ ] seconds_in_a_day = 24 * 60 * 60
seconds_in_a_day
```

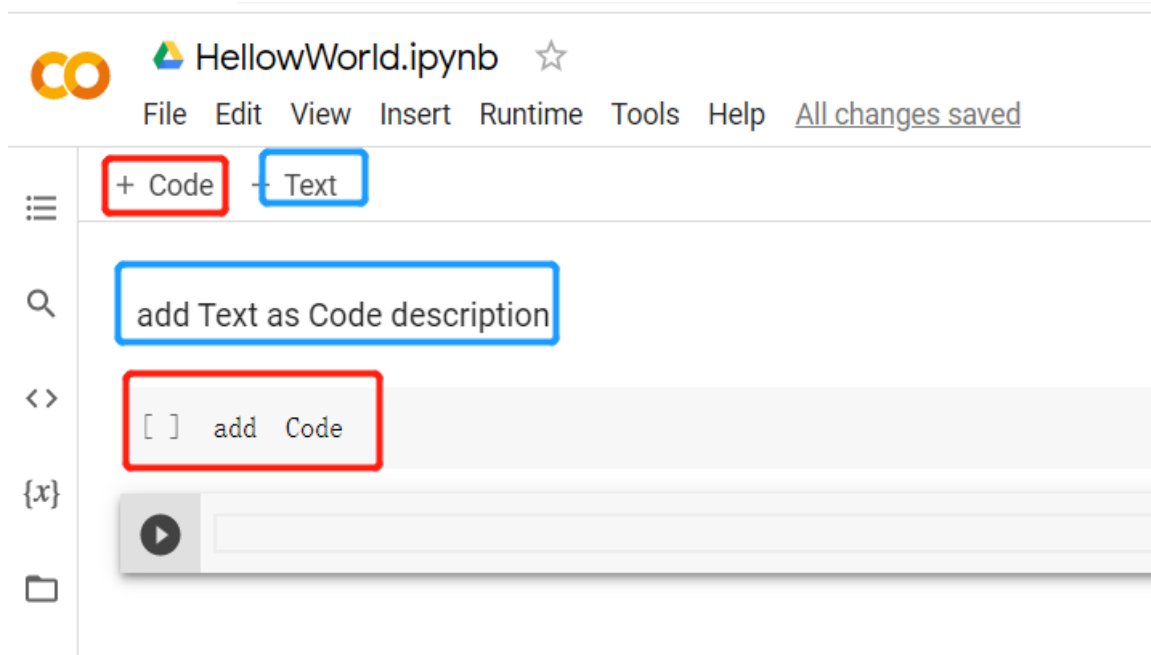
86400

# PyTorch in Google Colab

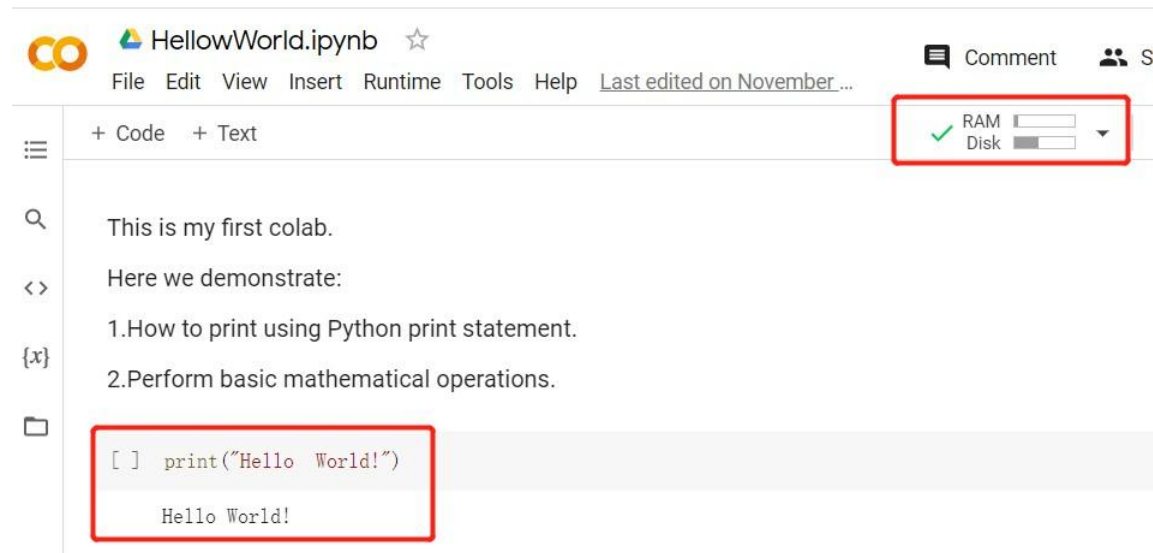
- Create a new file in Colab
- Name it as HelloWorld.ipynb
- Click Open notebook
- Let us write something



# PyTorch in Google Colab

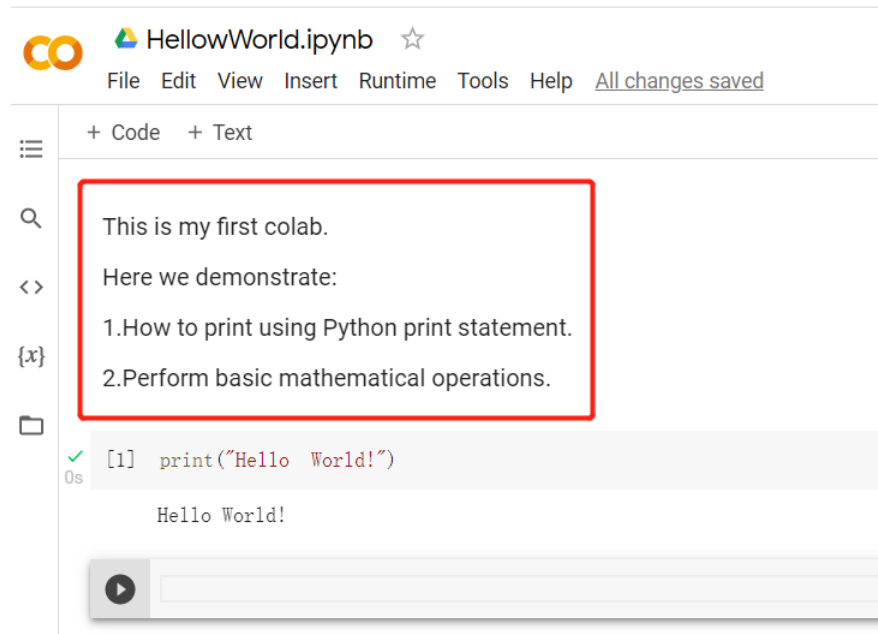


# PyTorch in Google Colab





# PyTorch in Google Colab



# PyTorch in Google Colab

HellowWorld.ipynb ☆

File Edit View Insert Runtime Tools Help [All changes saved](#)

+ Code + Text

This is my first colab.

Here we demonstrate:

- 1.How to print using Python print statement.
- 2.Perform basic mathematical operations.

[1] `print("Hello World!")`

Hello World!

Perform addition of two numbers.

```
a = 3
b = 2
y = a + b
print(y)
```

5

HellowWorld.ipynb ☆

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+ Code + Text

[2] `print()`

5

initialize the variables.

[3] `a = 10`  
`b = 20`

Add a and b to get a + b

[4] `y = a + b`

Print y

`print(y)`

30