

Environment Settings

Dr. Dong-Chul Kim

Topics

Google Colab

Pycharm

Pytorch

VPN

GPU cluster

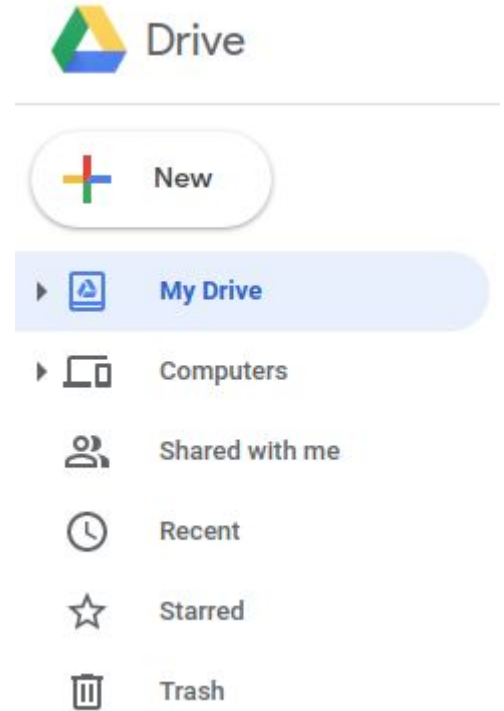
Google Colab

How to use Google Colab

To utilize Colab, a Google account is necessary.

Please sign in to your Google account and proceed to Google Drive.

Click on the "New" button, select "More," and then choose "Google Colaboratory."





Untitled1.ipynb ☆

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

Comment

Share



+ Code + Text

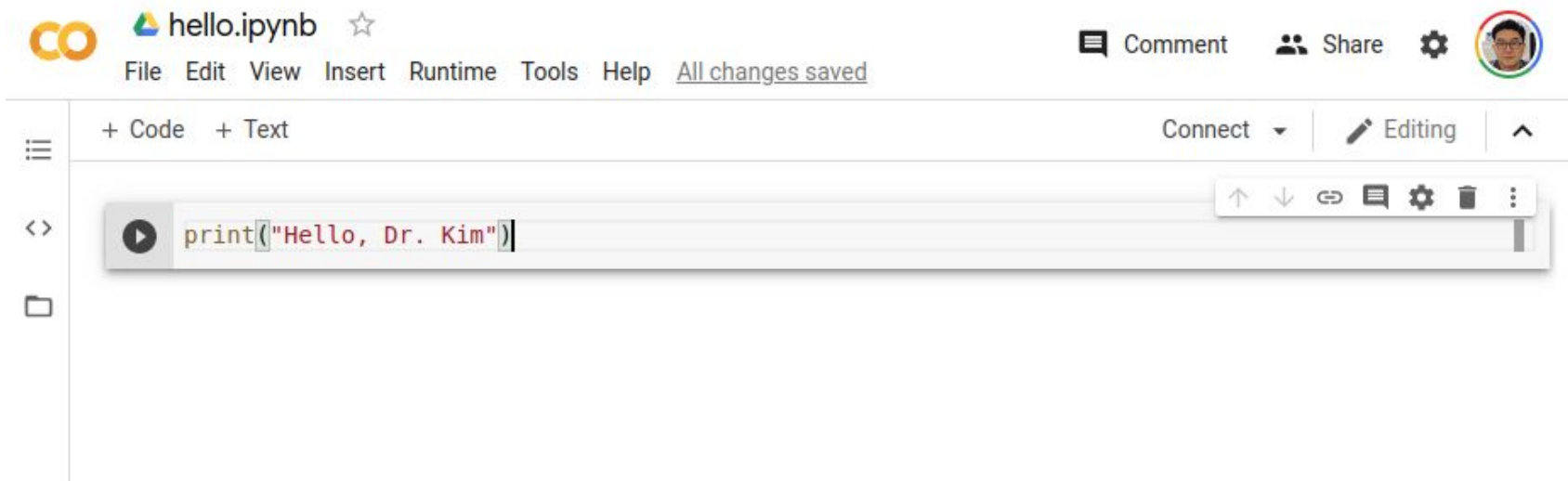
Connect ▾

Editing



Google Colab

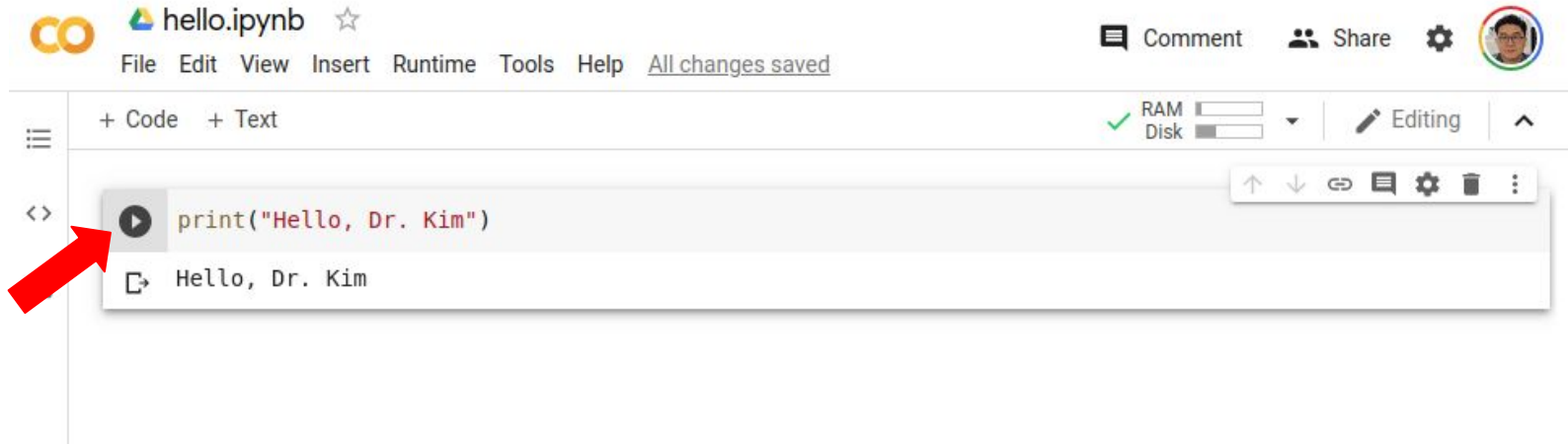
To modify the file name, rename it as "hello.jpynb" and include a single line of code to print a string.



The screenshot displays the Google Colab web interface. At the top left, the Colab logo is followed by the file name "hello.ipynb" and a star icon. Below this is a menu bar with options: File, Edit, View, Insert, Runtime, Tools, and Help. A status message "All changes saved" is visible. On the right side of the top bar, there are icons for Comment, Share, and a user profile picture. Below the top bar, there are buttons for "+ Code" and "+ Text". The main workspace contains a single code cell with a play button icon on the left and the code `print("Hello, Dr. Kim")` in the center. A context menu is open over the code cell, showing icons for undo, redo, link, comment, settings, delete, and a vertical ellipsis. The left sidebar contains icons for a menu, navigation, and a folder.

Run hello.jpynb

Click the play button 



The screenshot shows a Jupyter Notebook interface. At the top left is the Orange3 logo and the file name "hello.ipynb" with a star icon. Below this is a menu bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help", followed by the text "All changes saved". On the top right, there are icons for "Comment", "Share", a settings gear, and a user profile picture. Below the menu bar, there are options to "+ Code" and "+ Text". On the right side of this bar, there are status indicators for "RAM" and "Disk" usage, a pencil icon for "Editing", and an upward arrow. The main area shows a code cell with a play button icon on the left, which is highlighted by a red arrow. The code inside the cell is `print("Hello, Dr. Kim")`. Below the code cell, the output is displayed as "Hello, Dr. Kim".

Lab 3-1: Google Colab

1. Open Google Colab and create a new notebook named "hello.jpynb".
2. Write a Python program in the notebook that prints "Hello, your_name" to the output. Replace "your_name" with your name.
3. Run the program in the Colab notebook to verify that it works correctly.
4. Take a screenshot of your Google Chrome browser showing the output of the program in the Colab notebook.
5. Save the screenshot to your computer.
6. Login to Blackboard and navigate to the lab assignment.
7. Upload the screenshot to Blackboard. Note that you don't need to upload the hello.jpynb file.

Pycharm

Install PyCharm

JET BRAINS

Tools Languages Solutions Support Company Store

PyCharm

Coming in 2020.2 What's New Features Learning Center Buy [Download](#)

PC **PyCharm**

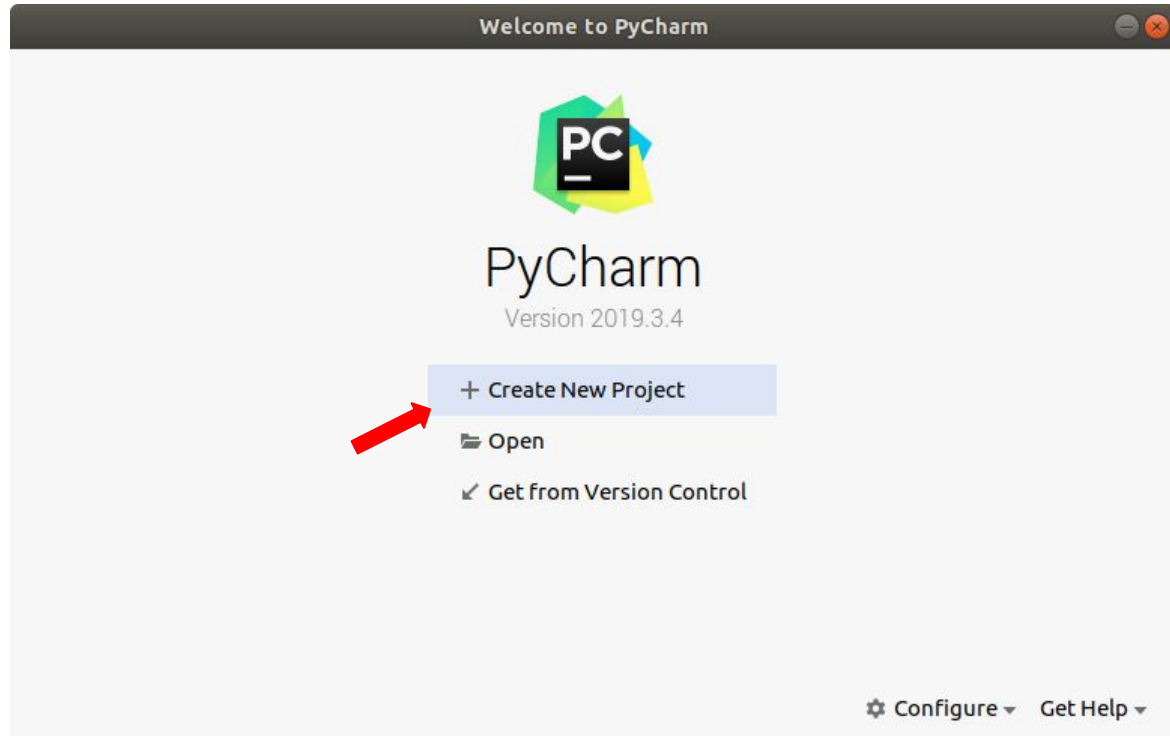
The Python IDE
for Professional Developers

[DOWNLOAD](#)

Full-fledged Professional or [Free Community](#)

WHY PYCHARM

Create a new project



New Project

Location:

▼ Project Interpreter: New Virtualenv environment

New environment using

Location:

Base interpreter:

Inherit global site-packages

Make available to all projects

Existing interpreter

Interpreter:

Create

Cancel

CSCI3328

Add Configuration...

Project

- Project
- CSCI3328 ~/PycharmProjects/CSCI3328
- External Libraries
- Scratches and Consoles

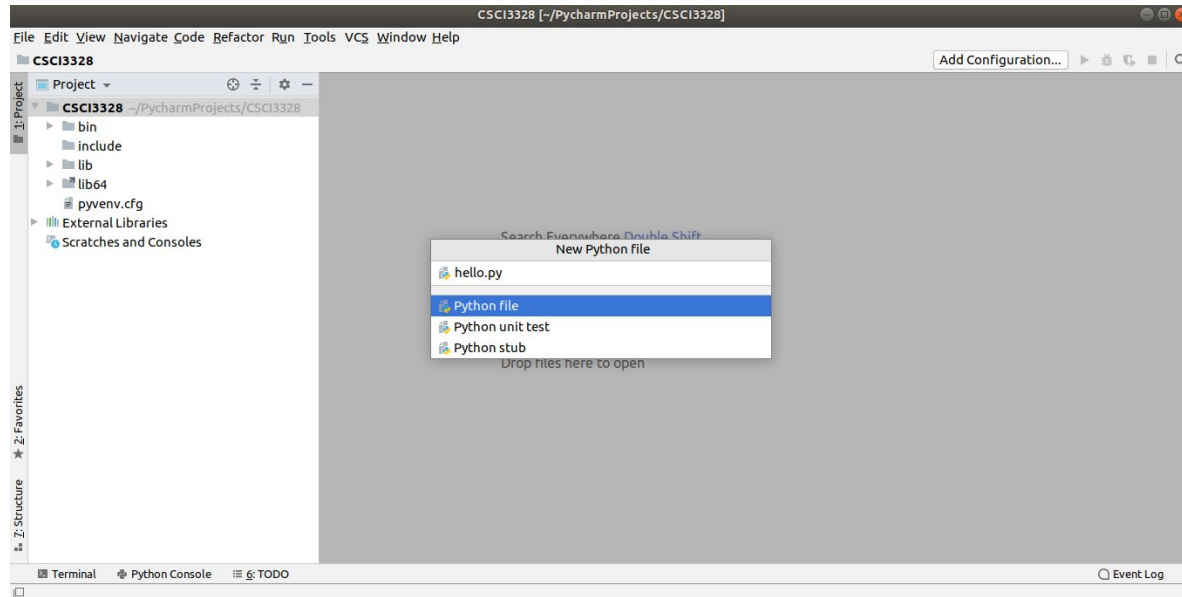
Z: Favorites
Z: StructureSearch Everywhere [Double Shift](#)Go to File [Ctrl+Shift+N](#)Recent Files [Ctrl+E](#)Navigation Bar [Alt+Home](#)

Drop files here to open

Create a python file, `hello.py`

Go to File->New

Enter a filename, `hello.py`



Project ▾



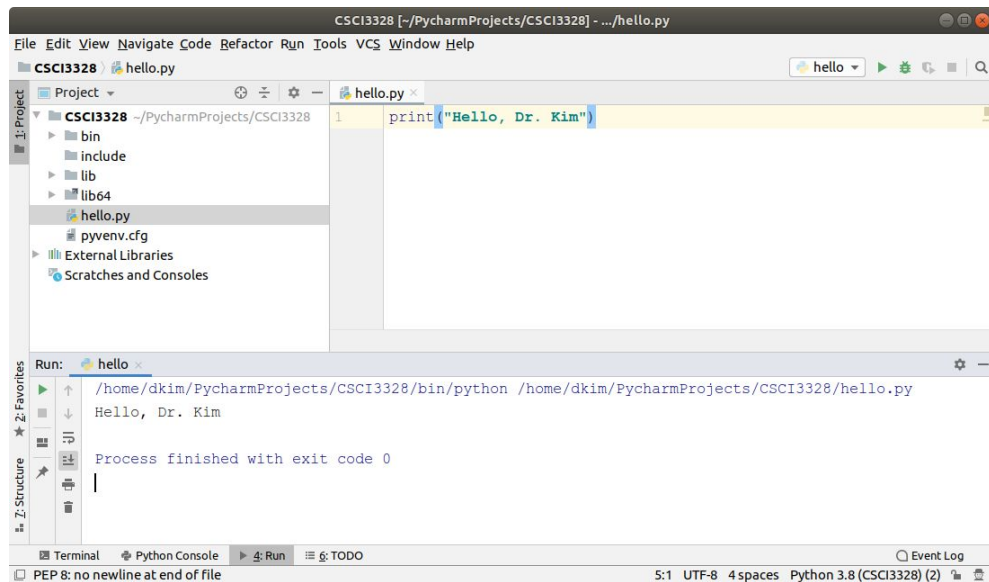
hello.py ×

- ▾ CSCI3328 ~/PycharmProjects/CSCI3328
 - ▾ bin
 - ▾ include
 - ▾ lib
 - ▾ lib64
 - hello.py
 - pyenv.cfg
 - ▾ External Libraries
 - ▾ Scratches and Consoles

```
1 print("Hello, Dr. Kim")
```

Run hello.py

To execute your 'hello' program in PyCharm, right-click in the editor area where your code is open, and select the option 'Run 'hello'' from the context menu.



Lab 3-2

1. Install PyCharm and create a new project with a Python file named 'hello.py'.
2. In this file, write a program to display "Hello, your_name" on the console.
3. Capture the PyCharm window showing your code and its output, and upload this screenshot to Blackboard.
4. There is no need to upload the 'hello.py' file separately.

Pytorch

PyTorch

The screenshot shows the PyTorch website homepage. At the top is a navigation bar with links for 'Get Started', 'Ecosystem', 'Edge', 'Blog', 'Tutorials', 'Docs', 'Resources', and 'GitHub'. Below the navigation bar is a large purple header with the PyTorch logo and the text 'NEW ANNOUNCEMENTS'. Underneath, there is a sub-header 'Catch up on the latest technical insights and tools from the PyTorch community.' and a 'Read More' button. The main content area features three white boxes with the following titles and descriptions:

- MEMBERSHIP AVAILABLE**: Join the Membership that fits your goals. [Join](#)
- PYTORCH 2.1**: We are excited to announce the release of PyTorch 2.1! [Learn More](#)
- PYTORCH EDGE**: Build innovative, privacy-aware experiences with superior productivity, portability, and performance. [Read More](#)

KEY FEATURES & CAPABILITIES

Production Ready

Transition seamlessly between eager and graph modes with TorchScript, and accelerate the path to production with TorchServe.

Distributed Training

Scalable distributed training and performance optimization in research and production is enabled by the torch.distributed backend.

Robust Ecosystem

A rich ecosystem of tools and libraries extends PyTorch and supports development in computer vision, NLP and more.

Cloud Support

PyTorch is well supported on major cloud platforms, providing frictionless development and easy scaling.

[See all Features >](#)

Support Ukraine 🇺🇦
[Help Provide Humanitarian Aid to Ukraine.](#)

Pytorch

PyTorch emerges as a deep learning framework with capabilities to manage tensors and construct dynamic neural networks on Graphical Processing Units (GPUs).

GPU: Enhances computational speed.

Tensor: Represents a data structure utilized within PyTorch.

Dynamic Neural Network: Defines a neural network with the flexibility to modify its architecture during the training process, like adding or removing layers.

Pytorch

PyTorch distinguishes itself through its efficient computational abilities, minimal CPU utilization, user-friendly interface, and lower barriers to entry.

Its simplicity stands out as a significant trait, facilitating faster calculations.

Moreover, PyTorch demands less CPU resources compared to TensorFlow.

There are no regular alterations in its API akin to TensorFlow. It is also characterized by an expansive user community.

Pytorch

See the file: `3_pytorch-basics.ipynb`

VPN

<https://www.utrgv.edu/it/software/virtual-private-network/index.htm>

Lab 3-3

Install VPN client.

Connect to UTRGV network.

Take a screenshot and submit it.

GPU cluster

<https://hpc.utrgv.edu/>

Lab 3-4

Login the gpu cluster.

Take a screenshot and submit it.