



Basic Mobile Lab 2 (521200-1)

Sehwan (Paul) Kim, Ph.D

Associate Professor, Dept. Biomedical Engineering,
School of Medicine, Dankook University, Korea

Vice President, Beckman Laser Institute Korea,
Dankook University, Korea

Senior Specialist, Beckman Laser Institute,
University of California, Irvine, USA

Contents of this week

Google Colaboratory

1. Why to use it
2. How to use it (lab)
3. Basic setups (lab)

Task :

1. Python Quiz
2. Numpy & Pandas Quiz

Review materials

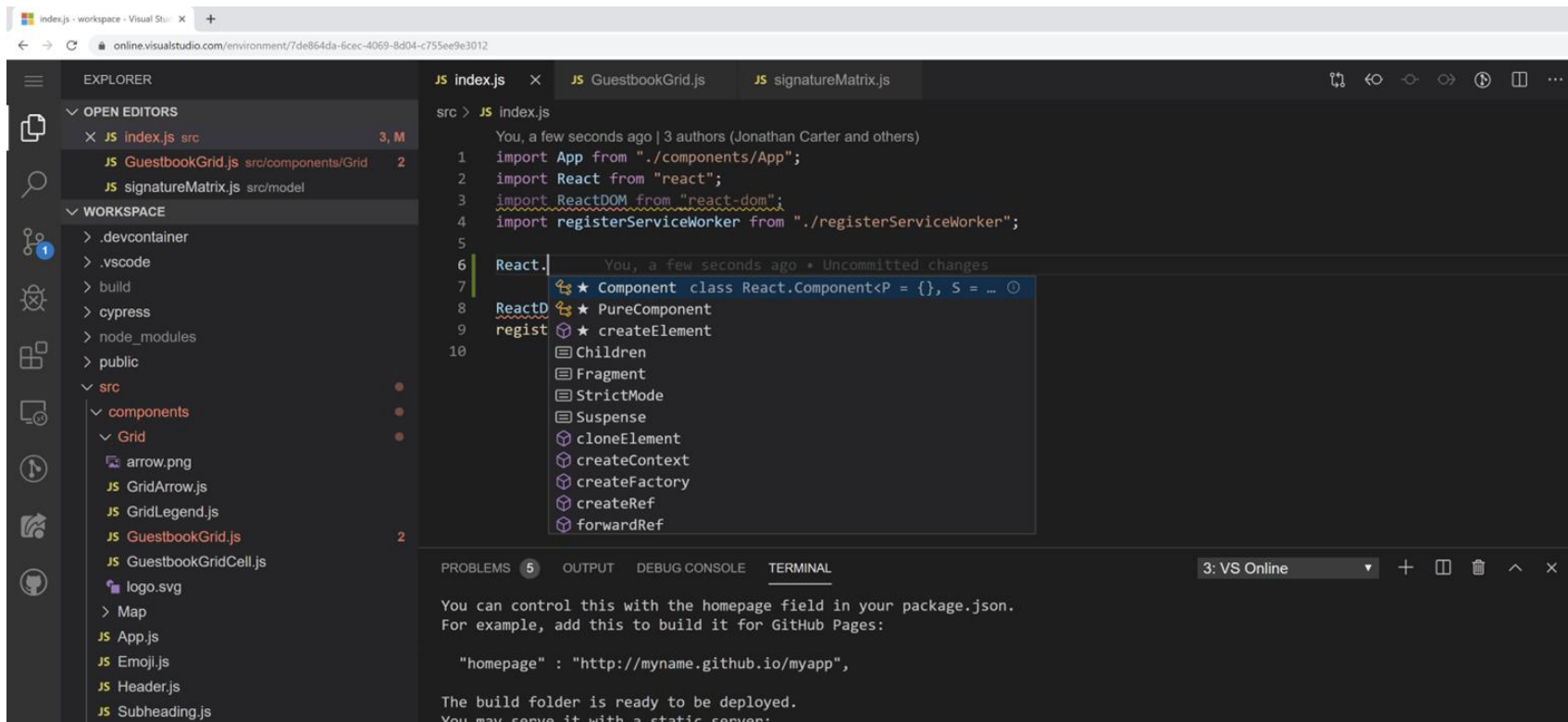
1. Pyplot

Google colab : why to use it?

The logo for Google Colab, featuring the word "colab" in a stylized font. The "co" is yellow with a gradient, and the "lab" is orange. The letters are bold and rounded.

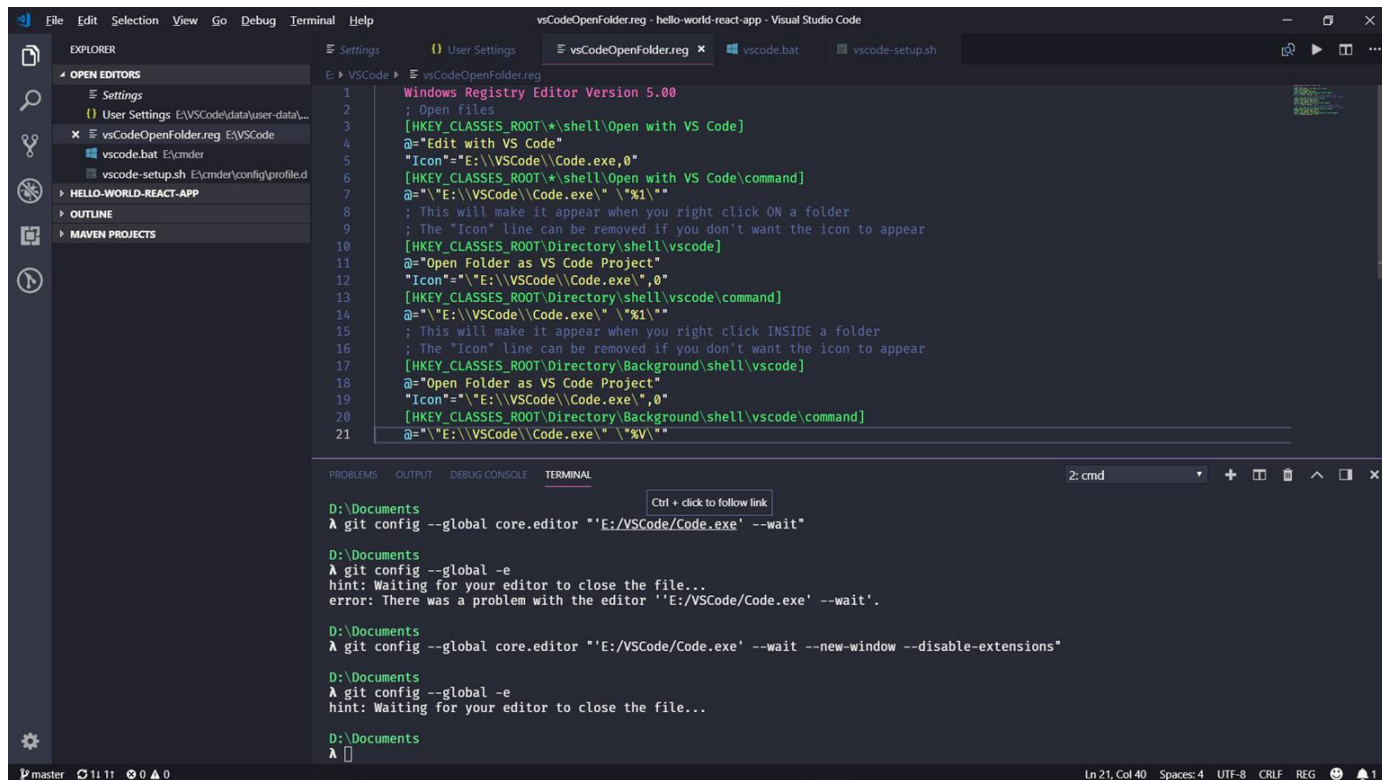
Google colab : why to use it?

Visual studio



Google colab : why to use it?

VS code



The screenshot displays the Visual Studio Code interface. The Explorer sidebar on the left shows the file structure with folders for 'Settings', 'HELLO-WORLD-REACT-APP', and 'MAVEN PROJECTS'. The main editor area is open to a file named 'vsCodeOpenFolder.reg', which contains Windows Registry Editor commands for configuring VS Code as a default application. The terminal window at the bottom shows the execution of 'git config' commands to set the global editor to VS Code, with error messages indicating that the editor is not running.

```
vsCodeOpenFolder.reg - hello-world-react-app - Visual Studio Code

1  Windows Registry Editor Version 5.00
2  ; Open files
3  [HKEY_CLASSES_ROOT\*\shell\Open with VS Code]
4  @="Edit with VS Code"
5  "Icon"="E:\\VSCode\\Code.exe,0"
6  [HKEY_CLASSES_ROOT\\*\shell\Open with VS Code\\command]
7  @="\"E:\\VSCode\\Code.exe\" \"%1\"*"
8  ; This will make it appear when you right click ON a folder
9  ; The "Icon" line can be removed if you don't want the icon to appear
10 [HKEY_CLASSES_ROOT\\Directory\\shell\\vscode]
11 @="Open Folder as VS Code Project"
12 "Icon"="\"E:\\VSCode\\Code.exe\",0"
13 [HKEY_CLASSES_ROOT\\Directory\\shell\\vscode\\command]
14 @="\"E:\\VSCode\\Code.exe\" \"%1\"*"
15 ; This will make it appear when you right click INSIDE a folder
16 ; The "Icon" line can be removed if you don't want the icon to appear
17 [HKEY_CLASSES_ROOT\\Directory\\Background\\shell\\vscode]
18 @="Open Folder as VS Code Project"
19 "Icon"="\"E:\\VSCode\\Code.exe\",0"
20 [HKEY_CLASSES_ROOT\\Directory\\Background\\shell\\vscode\\command]
21 @="\"E:\\VSCode\\Code.exe\" \"%V\"*"

D:\Documents
λ git config --global core.editor "'E:/VSCode/Code.exe' --wait"

D:\Documents
λ git config --global -e
hint: Waiting for your editor to close the file...
error: There was a problem with the editor "'E:/VSCode/Code.exe' --wait'.

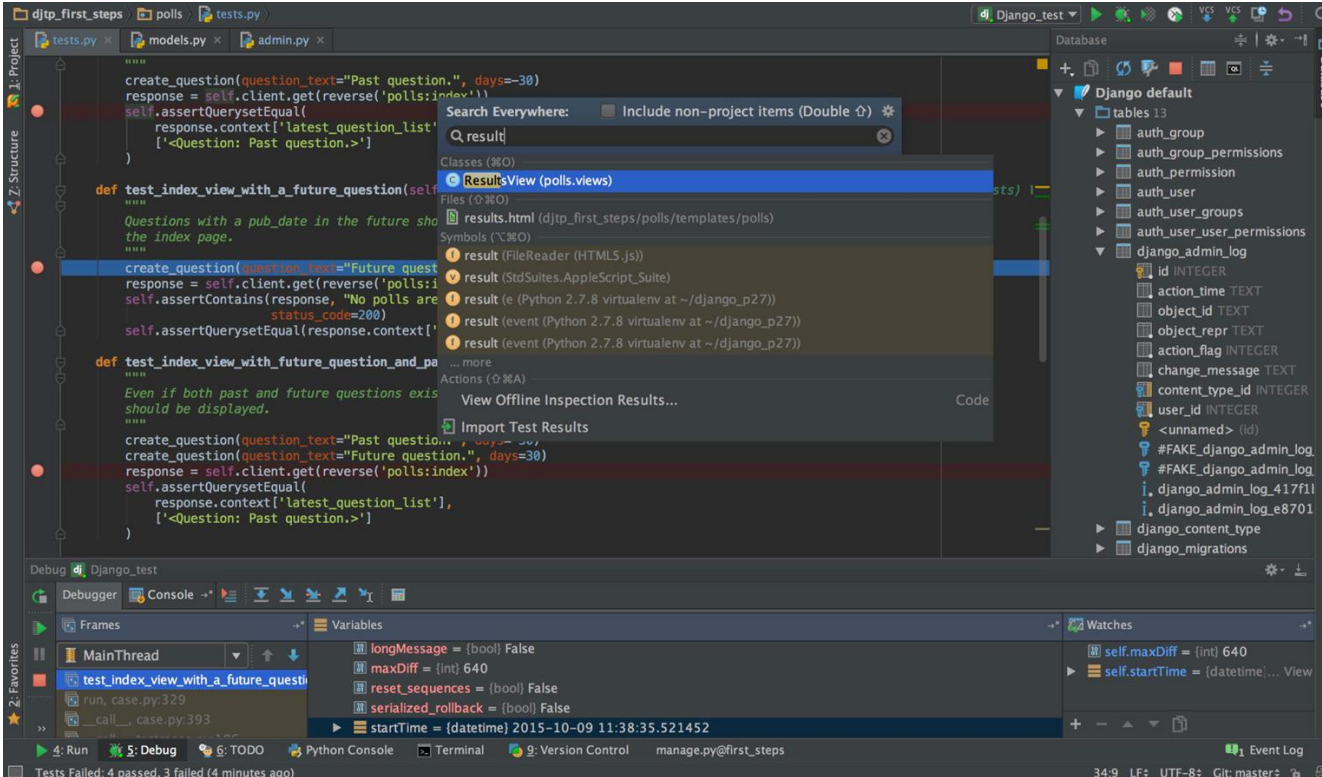
D:\Documents
λ git config --global core.editor "'E:/VSCode/Code.exe' --wait --new-window --disable-extensions"

D:\Documents
λ git config --global -e
hint: Waiting for your editor to close the file...

D:\Documents
λ
```

Google colab : why to use it?

Pycharm



Rstudio



Integrated development environment

From Wikipedia, the free encyclopedia

An **integrated development environment (IDE)** is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of at least a source code editor, build automation tools and a debugger. Some IDEs, such as NetBeans and Eclipse, contain the necessary compiler, interpreter, or both; others, such as SharpDevelop and Lazarus, do not.

Google colab : why to use it?

IDE : Integrated Development Environment

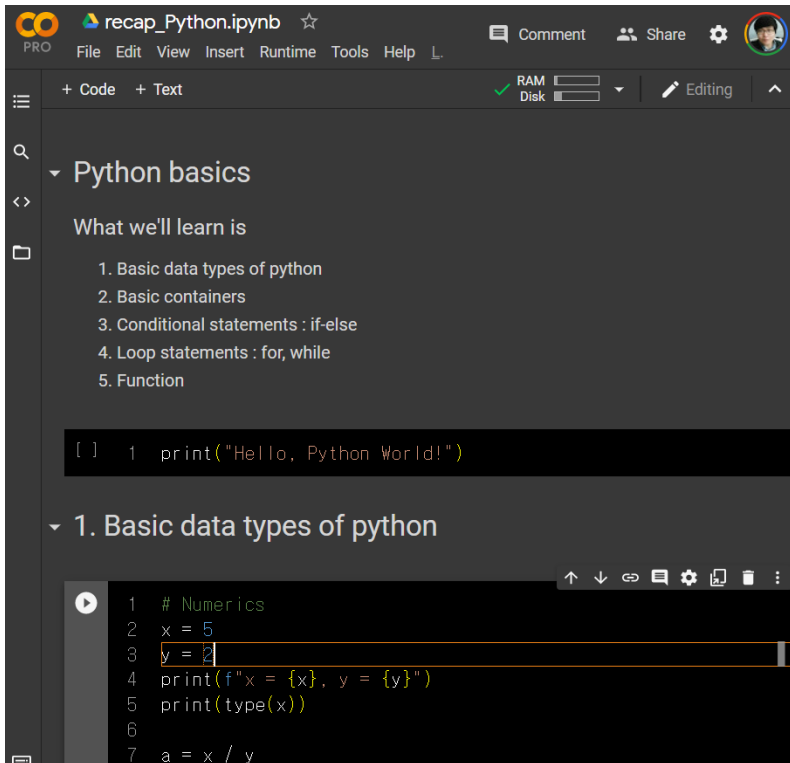
We expect that IDE should have...

- Source code editor
- Terminal interface
- The place that I can check the variables
- Builder, Debugger
- Many other facilities..

for Development!

Google colab : why to use it?

Google Colab as an IDE ?

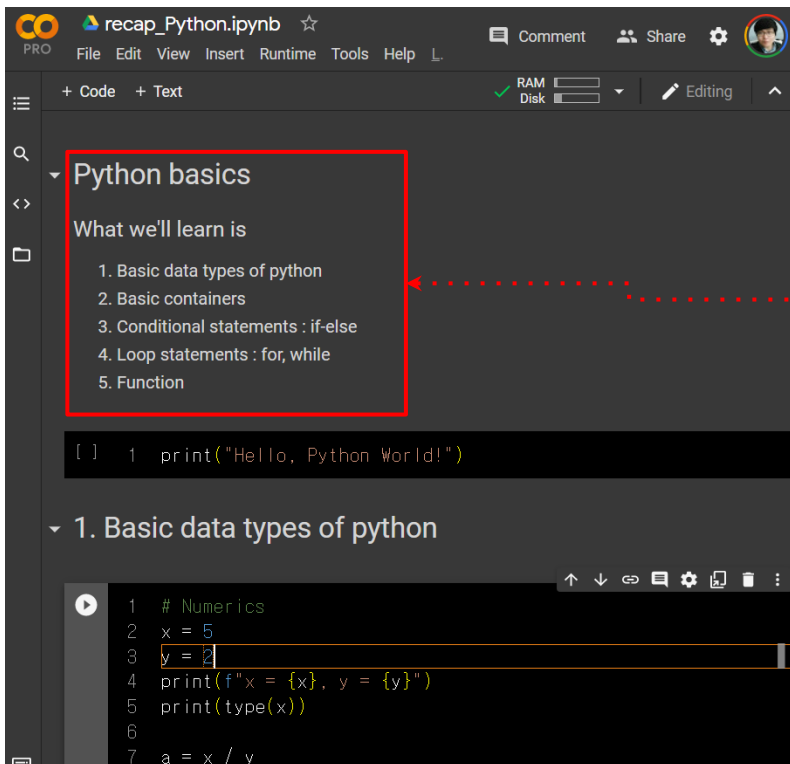


~~the conventional IDE
for Development~~

Google Colab is
For Research & Sharing

Google colab : why to use it?

Google Colab for Research



Markdown(text) cell

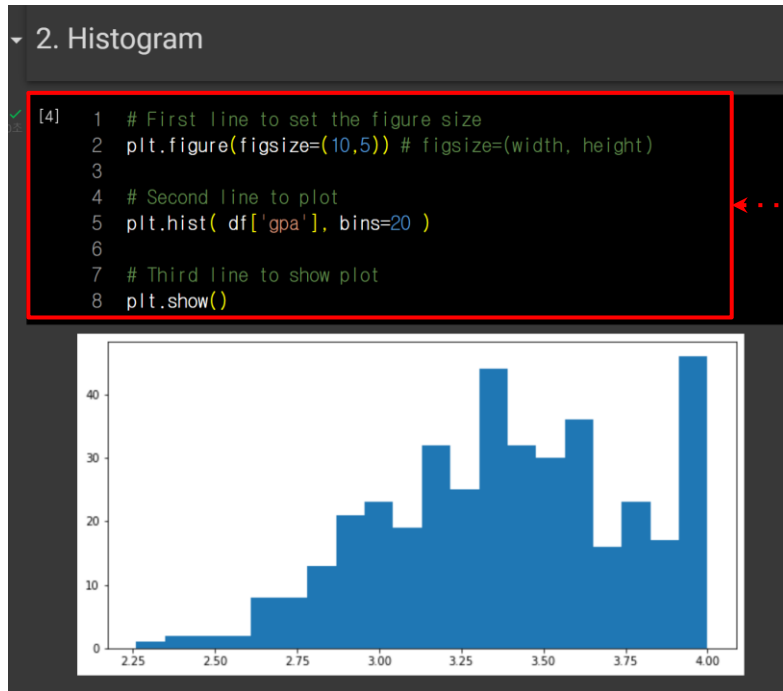
You can make your colab files as a Notebook
Note : **IPYNB** = **I**nteractive **PY**thon **NoteB**ook

Utilize the markdown cell as much as possible!

1. You can write an explanation about your code
2. Math equations using LaTeX
3. You can make a hyperlink to useful website
4. You can add an image to help you understand

Google colab : why to use it?

Google Colab for Research



Code cell

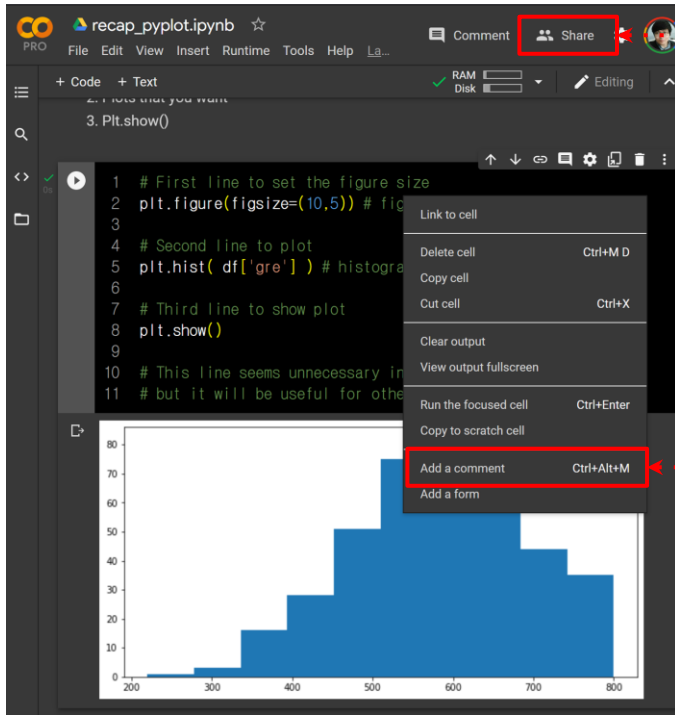
Write the code enough to see at a glance

- Don't write the long code at one cell
- You use google colab as a research&sharing tool
- You are not writing a code script

You can run the code cell
and see the result Interactively, cell by cell

Google colab : why to use it?

Google Colab for Research



You can share your file easily

Last time, You've already shared your folder.

Someone who you share the file with

- can see your file
- can add a comment
- can debug your code directly

Google colab : why to use it?

Summary

Use google colaboratory for Research & Sharing !

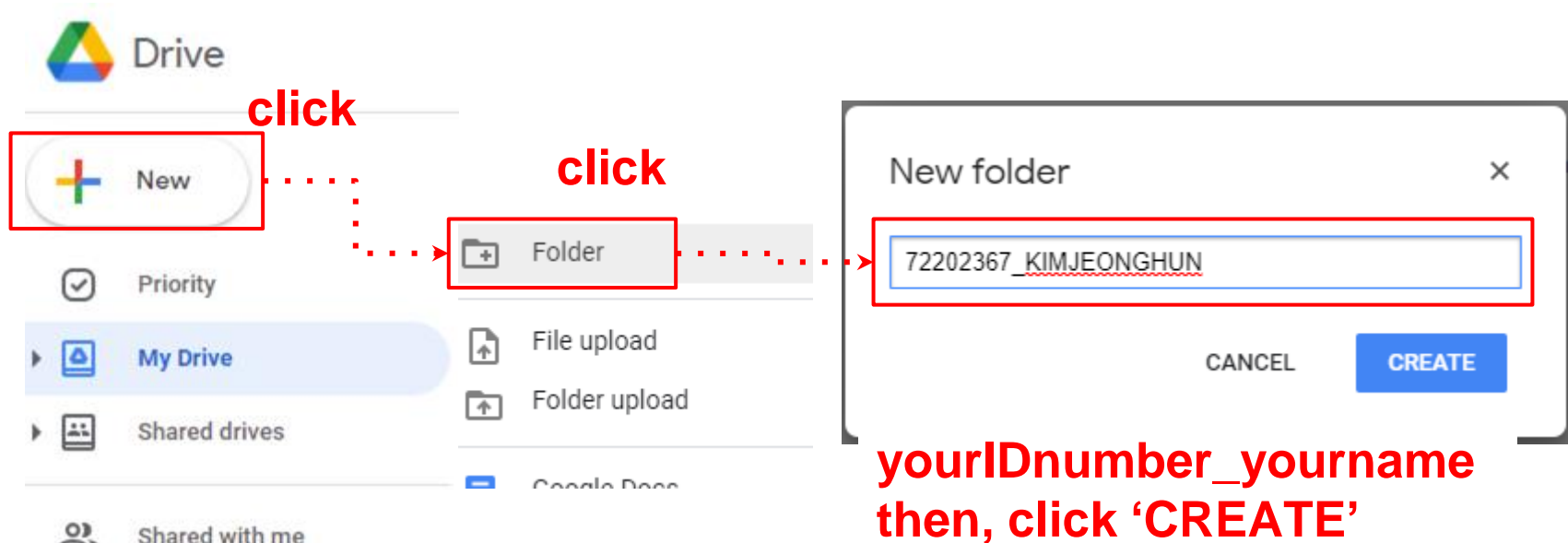
- Markdown cell : add an explanation about your code
- Code cell : short enough to see at a glance
- It is not good option if you want to make script file

Google colab : why to use it?

If you want to ask for help,
please follow the next three slides

Google colab : why to use it?

Make a folder and share it with TA



Google colab : why to use it?

Make a folder and share it with TA

Folders

right- click



wood.rayleigh@gmail.com
(email of TA) Enter

Google colab : why to use it?

My Drive > 72202367_KIMJEONGHUN ▾ 👤

 New folder



Upload files



Upload folder



Google Docs



Google Sheets



Google Slides



Google Forms



More



Whenever the tasks is shared :

1. Upload .ipynb files on your folder that you've shared.
2. Complete the task(.ipynb files) using google colaboratory (just double-click .ipynb files)
3. Upload your task files (using zip) on e-Campus (canvas.dankook.ac.kr)