Fundamental Programming Course
Week 1

Asia University

Content

- Essential
  - Kissipo Learning)
    - KISS Principle: Colab + Github
    - Anaconda amd Jupyter notebook
  - Hello World
  - IPO model: input–process–output
    - Input: input()
    - Process: assignment
    - Process: Use of built-in basic functions (help, type)
    - Output: print()
- Advanced
  - AboutPython
    - Editor:IDLE, Spyder, Visual Studio Code, PyCharm
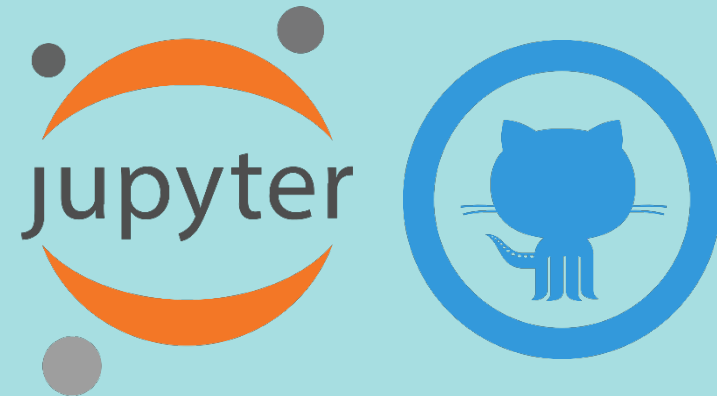   - Run
    - Debug

(A) ESSENTIAL

Kissipo

Kissipo = KISS principle + IPO model

Kissipo Learning

## Kissipo = KISS principle + IPO model

KISS principle

"keep it simple, stupid" or "keep it stupid simple", is a design principle noted by the U.S. Navy in 1960.
https://en.wikipedia.org/wiki/KISS_principle

IPO model

The input–process–output (IPO) model is a widely used approach in systems analysis and software engineering for describing the structure of an information processing program or other process.
https://en.wikipedia.org/wiki/IPO_model
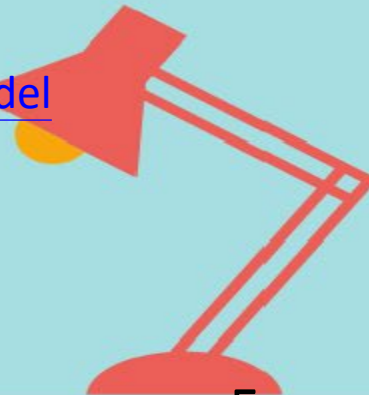
Kissipo Learning for Programming with Python(PWP)

Courseware: Notebook+ Github

(1) Notebook(Google Colab)。
(2) Github

Keep:

Variables and assignment
operator and expression
left-hand side and right-hand side
unpacking

S&S:

help(), type(), len(), size()
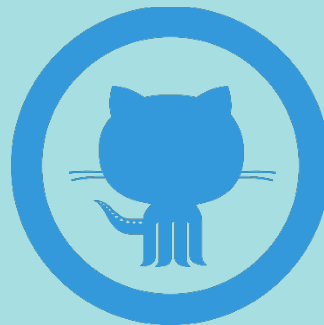
IPO-I: input

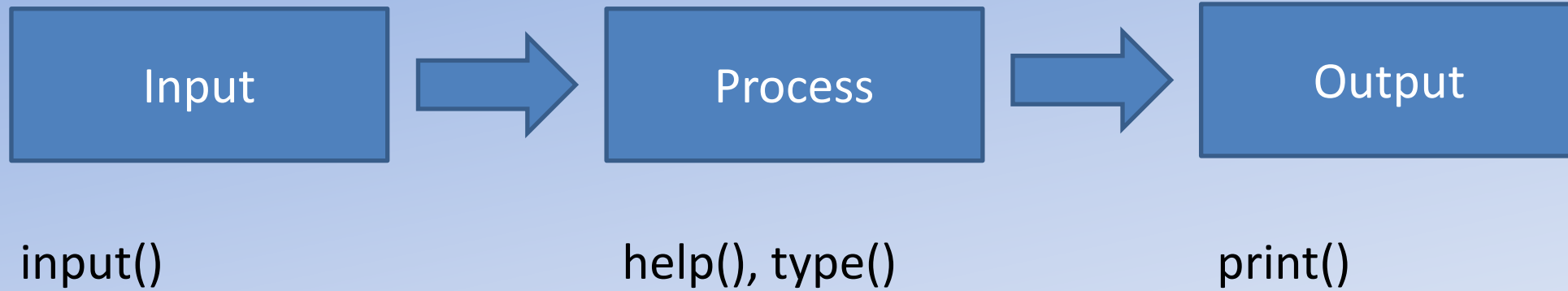input()
int(), float(), str()
split(), map()

IPO-P: Process

variable declaration,
data container
for-loop/while-loop
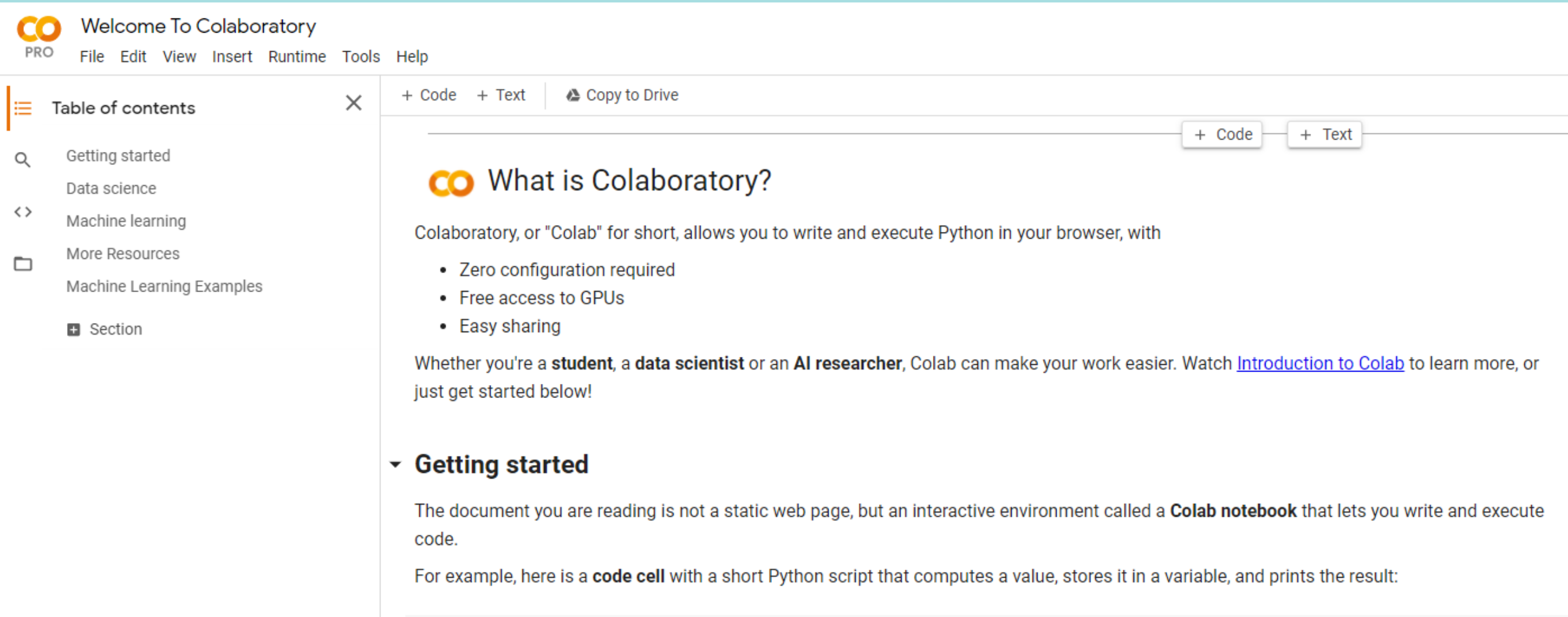if, elif, else
range()

IPO-O: output

print()
open(), write()

IPO Model

Input → Process → Output

input()   help(), type()   print()

The basic idea of this chapter is that students should know:
Input with input(), output with print()
help() can view the description of the function or category
type() can check the type of the variable

Notebook(Google Colab)

Jupyter Notebooks

➢ Jupyter is a non-profit organization that aims to "develop open source software, open standards and services for interactive computing in dozens of programming languages".

➢ Derived from IPython by Fernando Pérez in 2014, Jupyter supports execution environments in dozens of languages.

➢ The name of the Jupyter Project is a reference to the three core programming languages supported by Jupyter, which are Julia, Python, and R.

➢ Also a tribute to Galileo's notebooks recording the discovery of Jupiter's moons.

➢ The Jupyter Project develops Jupyter Notebook, JupyterHub, and JupyterLab, the next-generation version of Jupyter Notebook.

https://zh.wikipedia.org/wiki/Jupyter

Python官網的介紹
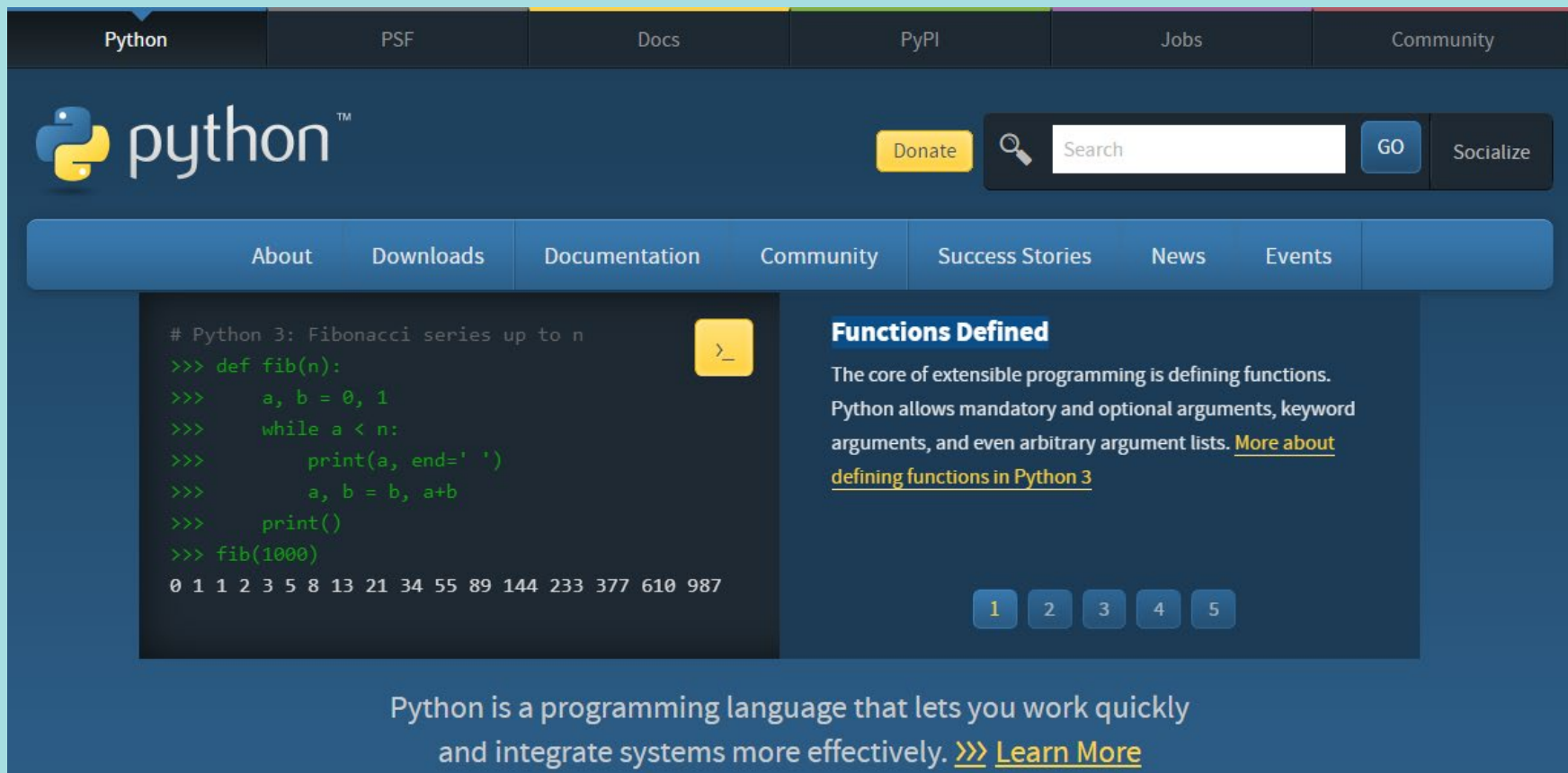
Python Versions

- Version ~~Python 2.7.x~~ and Python 3.8.x
- **print**
- **Unicode**
- **Integer division operation //**

Sunsetting Python 2
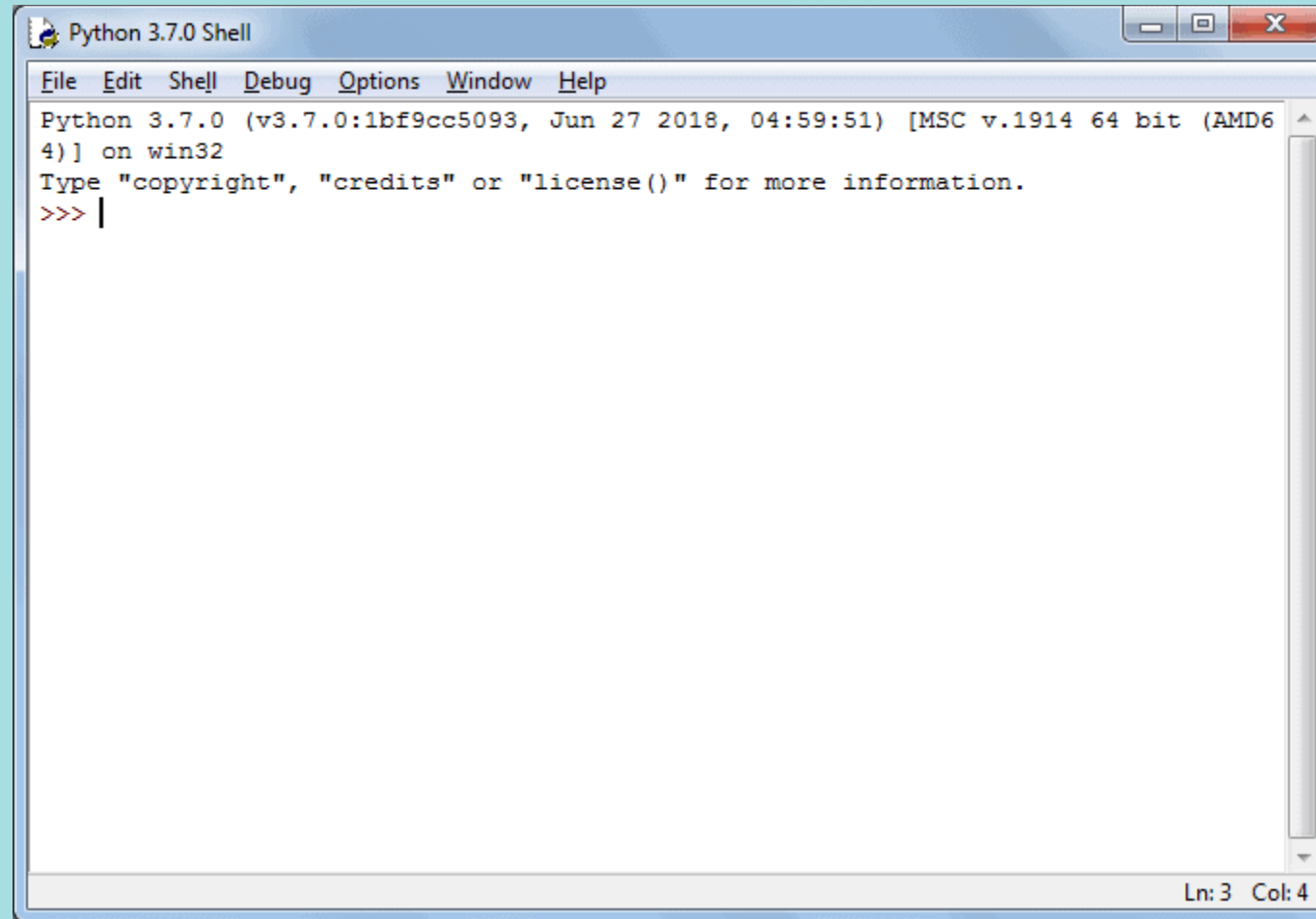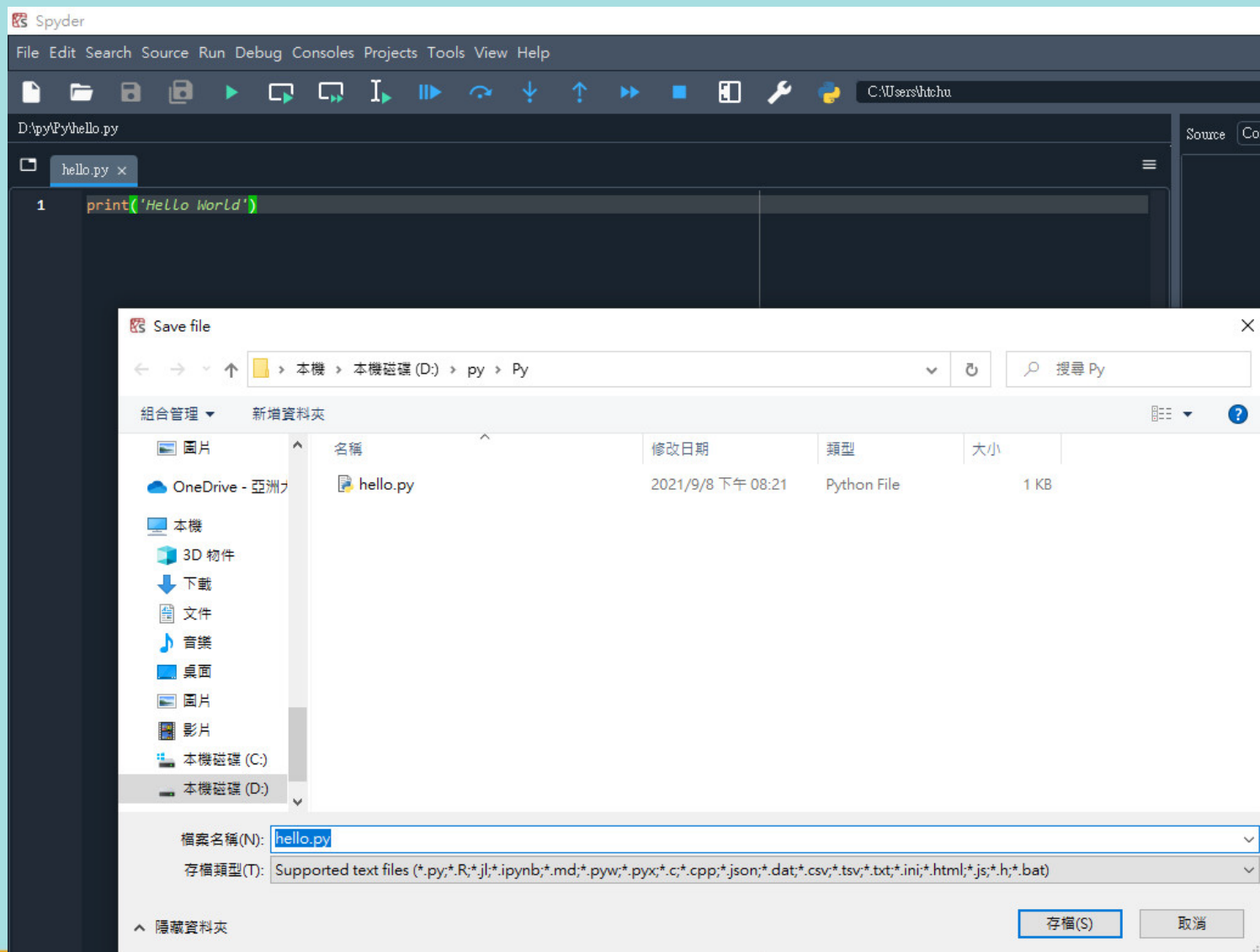
(B) ADVANCED

Python editors

- Python IDLE
- Spyder
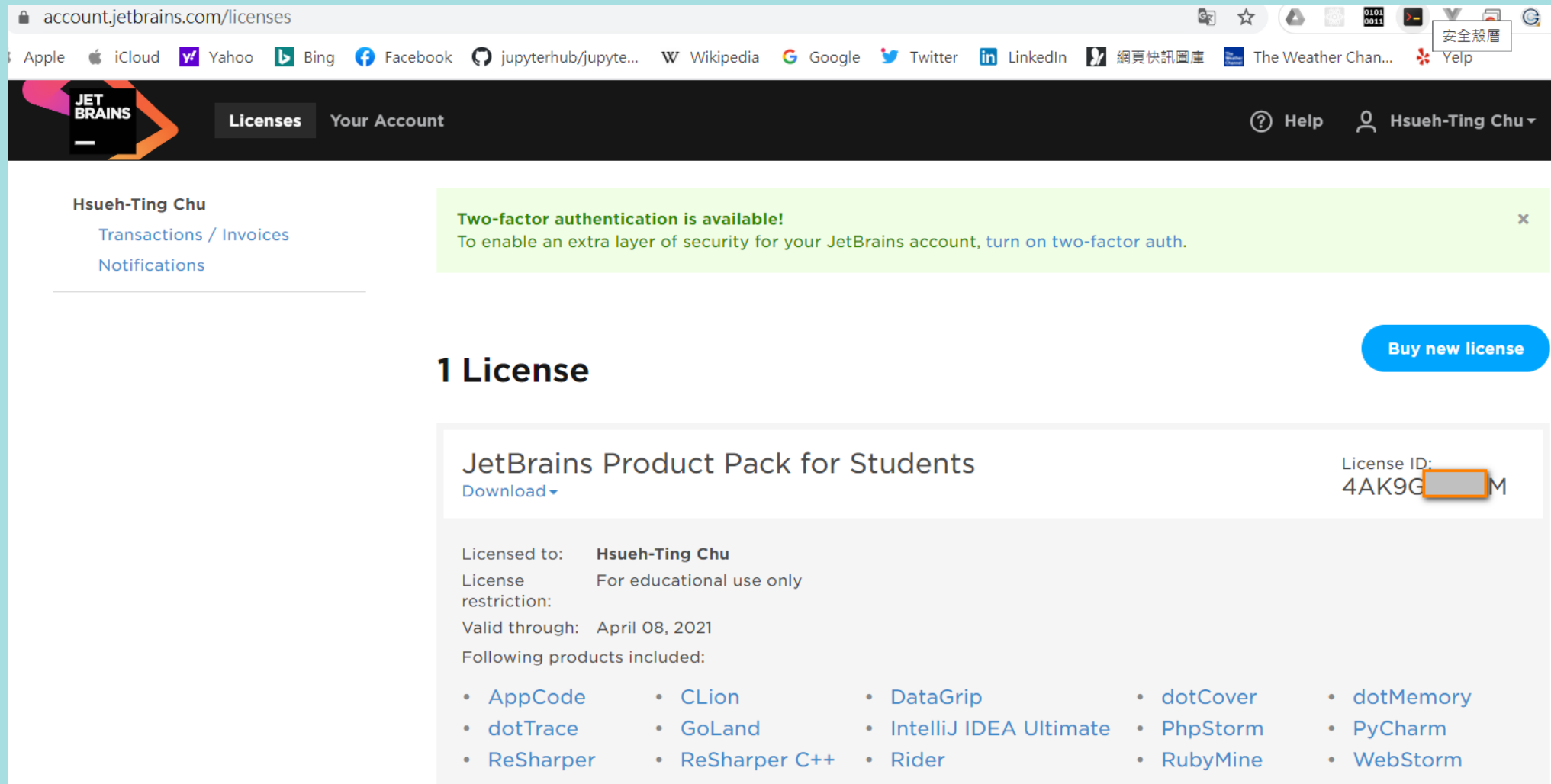- Visual Studio Code
- PyCharm

- Colab

Python IDLE

Spyder

Visual Studio Code
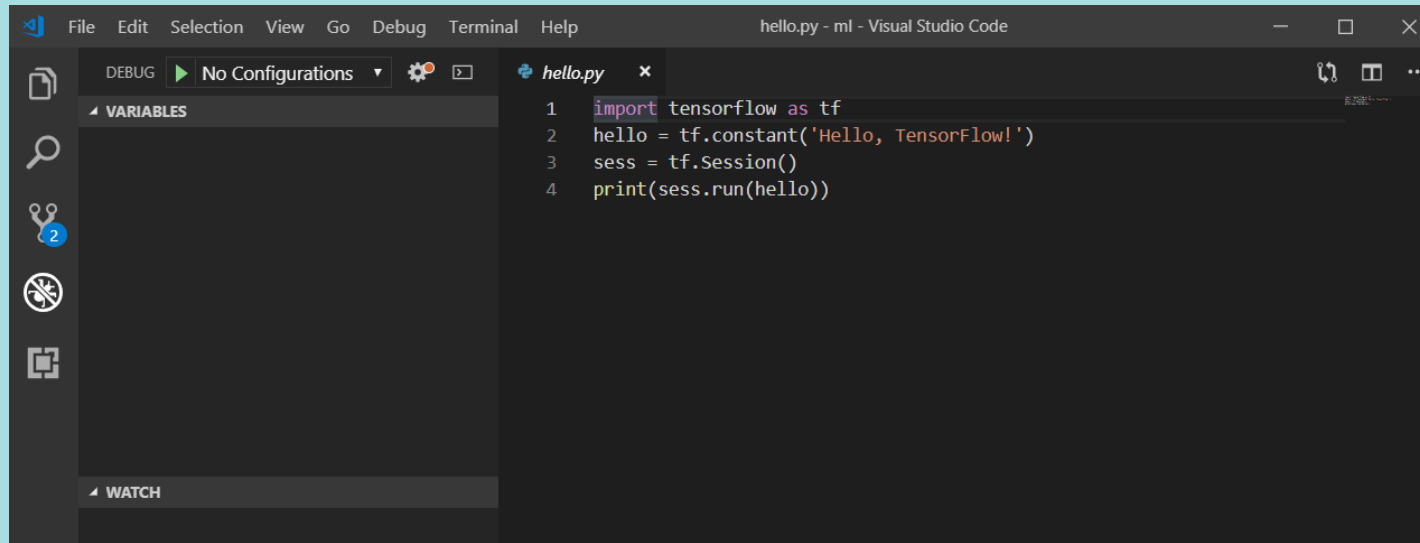
PyCharm
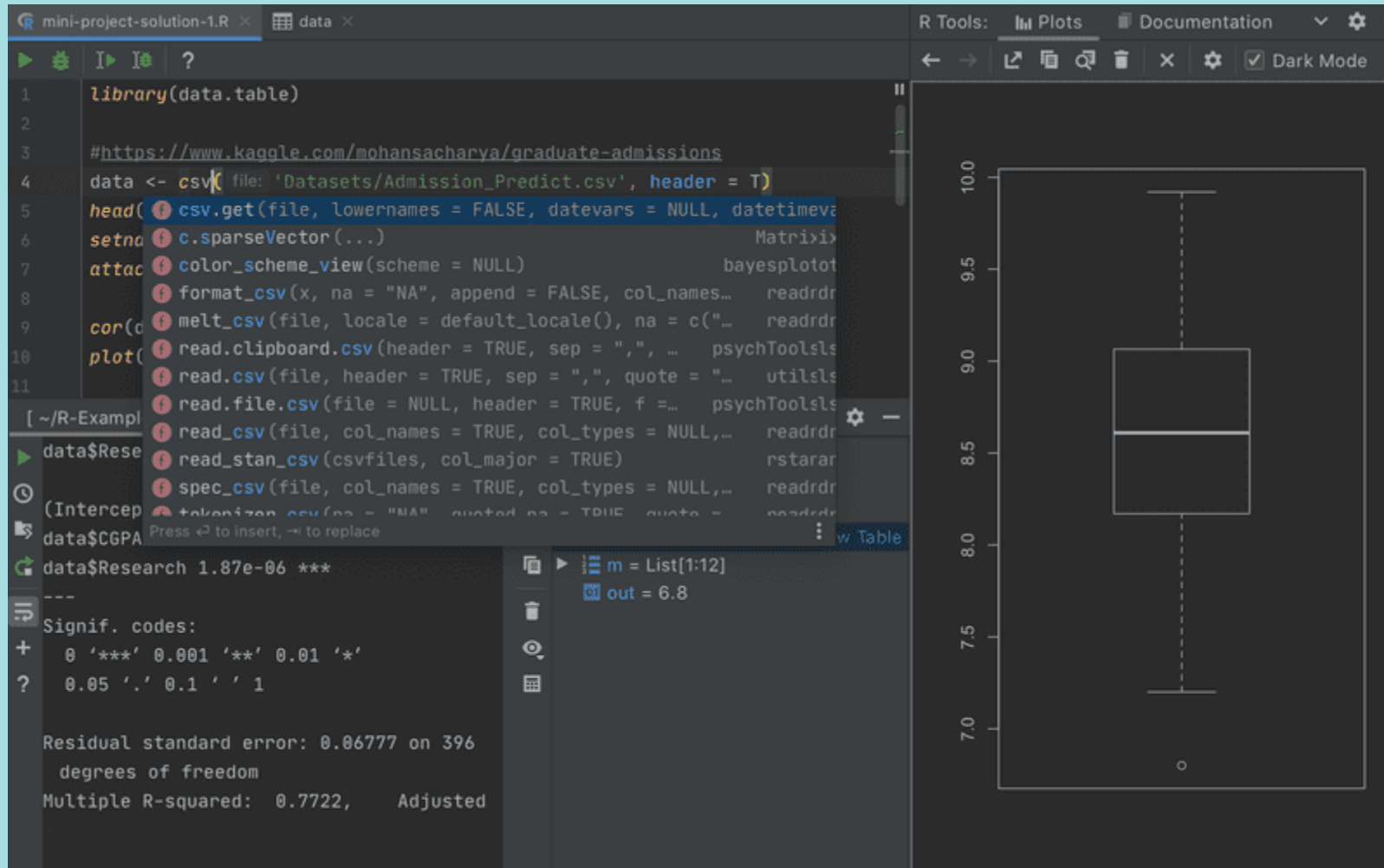
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Thanks! Q&A