



# 111-1基礎程式設計(1)

亞大資工系

# 課程大綱

- Essential-基本的
  - 啟思博的概念(Kissipo Learning)
    - KISS Principle: Colab + Github的使用
    - Anaconda 和Jupyter notebook
  - Hello World程式
  - IPO model: input-process-output (輸入-處理-輸出)
    - Input: input()函數
    - Process: 指定敘述(assignment)
    - Process:內建基本函數的使用(help, type)
    - Output: print()函數
- Advanced-進階的
  - 關於Python 程式語言
    - Python編輯器:IDLE, Spyder, Visual Studio Code, PyCharm
    - Python程式的執行 (Run)
    - Python程式的偵錯 (Debug)

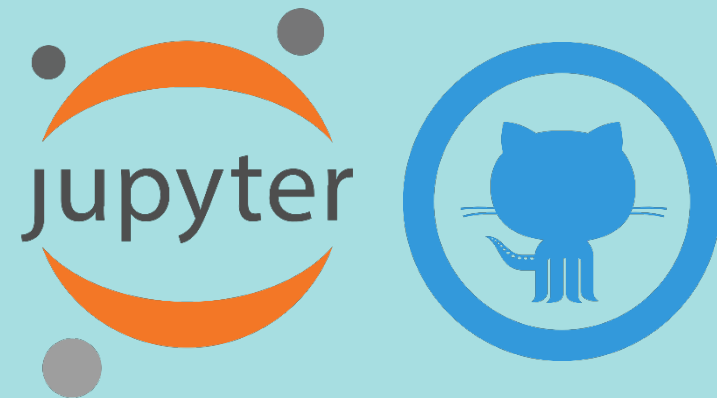


## (A) ESSENTIAL-基本的



# 啟思博教學法

Kissipo = KISS principle + IPO model



# 啟思博Kissipo 學習法

Kissipo = KISS principle + IPO model

## KISS principle

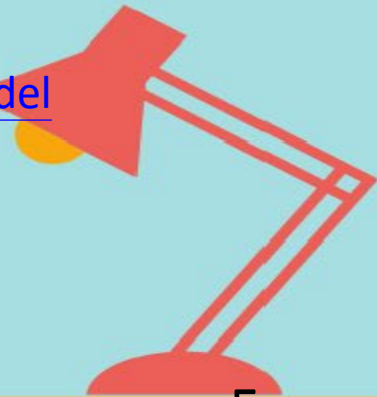
"keep it simple, stupid" or "keep it stupid simple", is a design principle noted by the U.S. Navy in 1960.

[https://en.wikipedia.org/wiki/KISS\\_principle](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](https://en.wikipedia.org/wiki/IPO_model)



# Kissipo Learning for Programming with Python(PWP)

## Courseware: Notebook+ Github

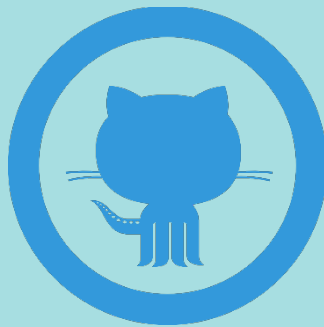
- (1) 使用Notebook(Google Colab)教學。
- (2) 使用Github建立教案

## 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

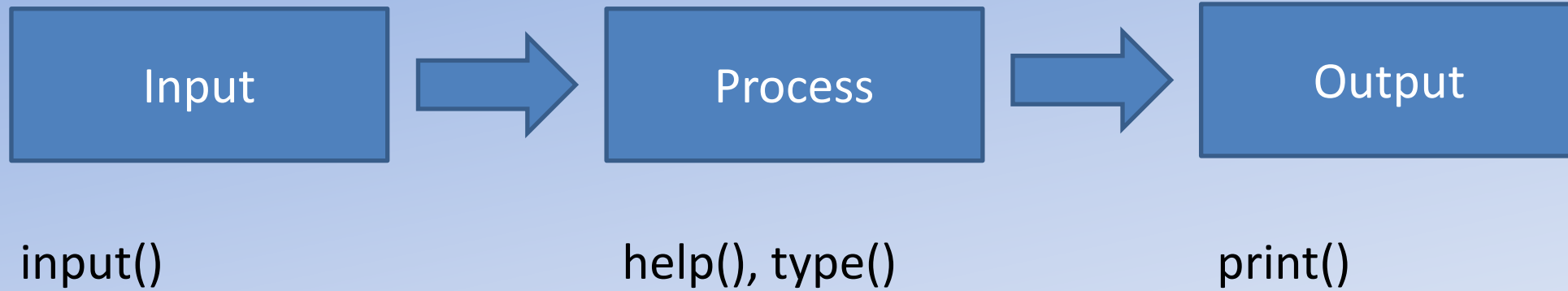
變數宣告, 資料容器  
for-loop/while-loop  
if, elif, else  
range()

## IPO-O: output

print()  
open(), write()



# IPO Model



本章基本觀念是同學要知道：  
輸入用(), 輸出用print()  
help()可以查看函數或類別的說明  
type()可以查看變數的型別



# 使用Notebook(Google Colab)教學


 Welcome To Colaboratory  
PRO File Edit View Insert Runtime Tools Help


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 Code

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 Text

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 Code

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 Text 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. Watch [Introduction to Colab](#) to learn more, or just get started below!

▼ Getting started

The document you are reading is not a static web page, but an interactive environment called a **Colab notebook** that lets you write and execute code.For example, here is a **code cell** with a short Python script that computes a value, stores it in a variable, and prints the result:

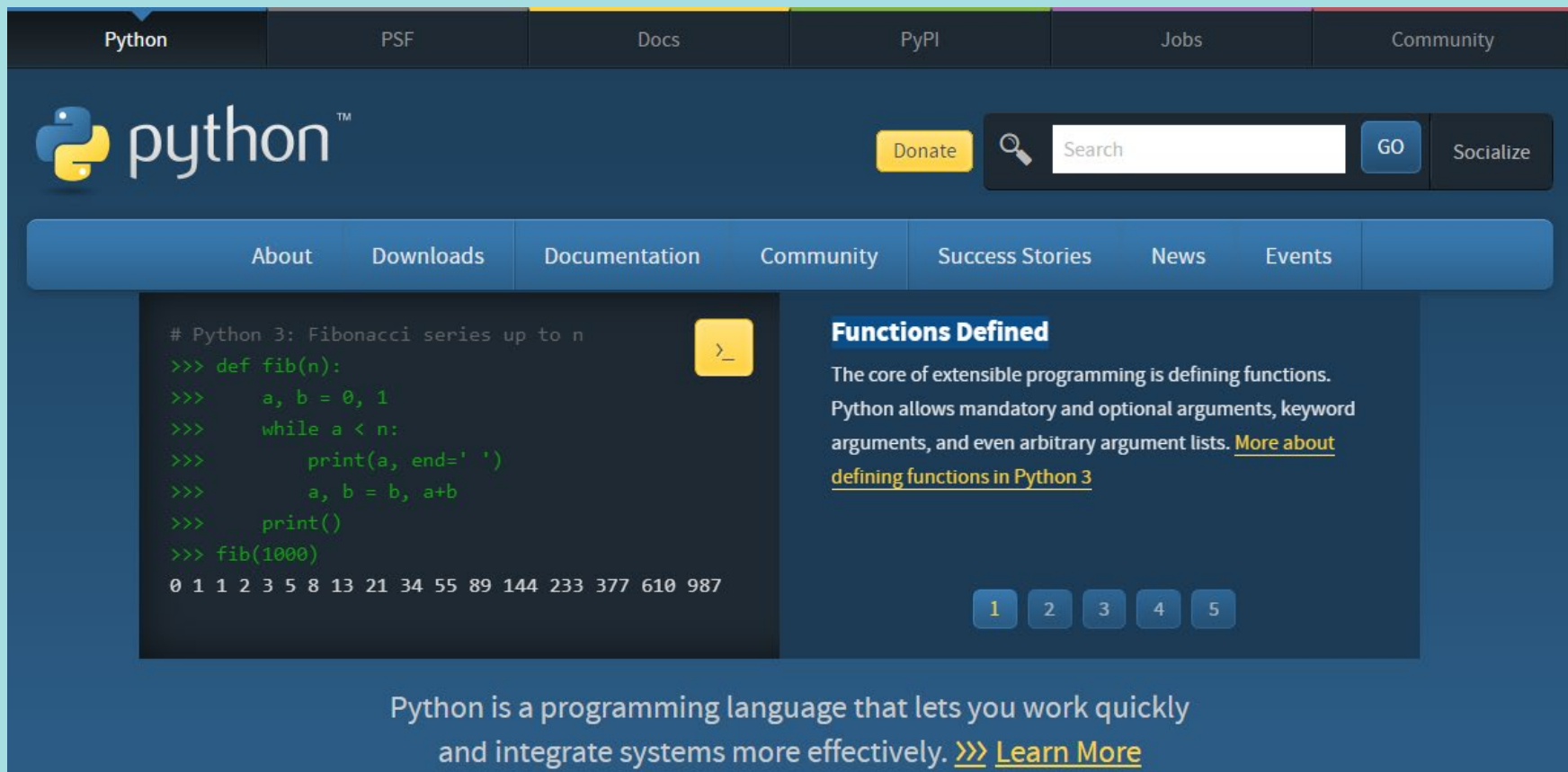


# Jupyter Notebooks



- Jupyter是一個非營利組織，旨在「為數十種程式語言的互動式計算開發開源軟件，開放標準和服務」。
- 2014年由Fernando Pérez從IPython中衍生出來，Jupyter支援幾十種語言的執行環境。
- Jupyter Project的名稱是對Jupyter支援的三種核心程式語言的引用，這三種語言是Julia、Python和R。
- 也是對伽利略記錄發現木星的衛星的筆記本的致敬。
- Jupyter專案開發Jupyter Notebook、JupyterHub和JupyterLab，這是Jupyter Notebook的下一代版本。

# Python官網的介紹



# Python的版本

- 目前版本~~Python 2.7.x~~和Python 3.8.x
- `print` 函数
- Unicode
- 除法运算 //



# Sunsetting Python 2



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Python Software Foundation

@ThePSF

CUDA in Your Python: Effective Parallel Programming on the GPU by William Horton. Learn how to speed up your Python programs using Nvidia's CUDA platform. [pyvideo.org/pycolorado-201...](http://pyvideo.org/pycolorado-201...)

## Sunsetting Python 2

We are volunteers who make and take care of the Python programming language. We have decided that **January 1, 2020**, was the day that we sunset Python 2. That means that we will not improve it anymore after that day, even if someone finds a security problem in it. You should upgrade to Python 3 as soon as you can.

## (B) ADVANCED-進階的

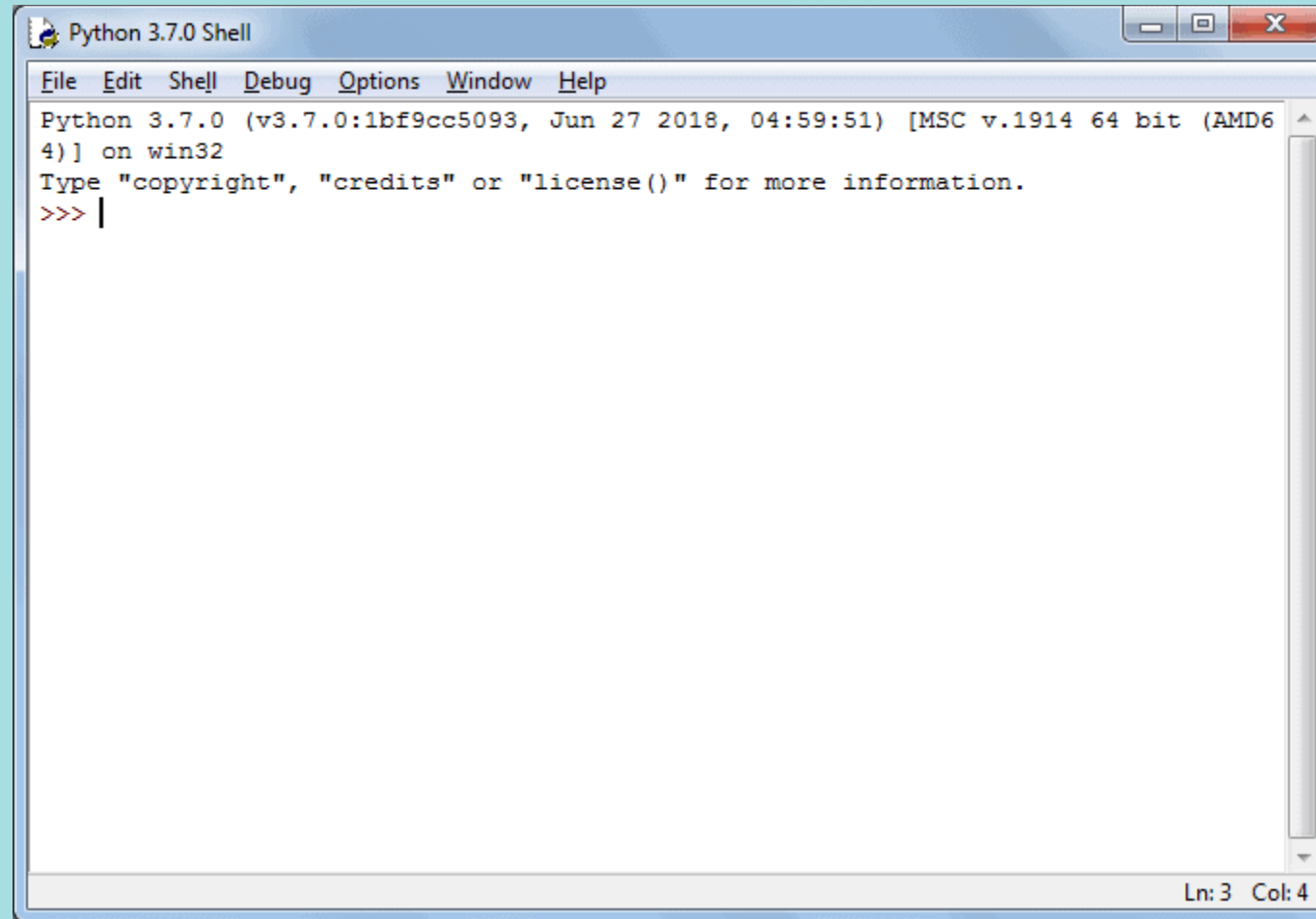


# Python程式的編輯工具

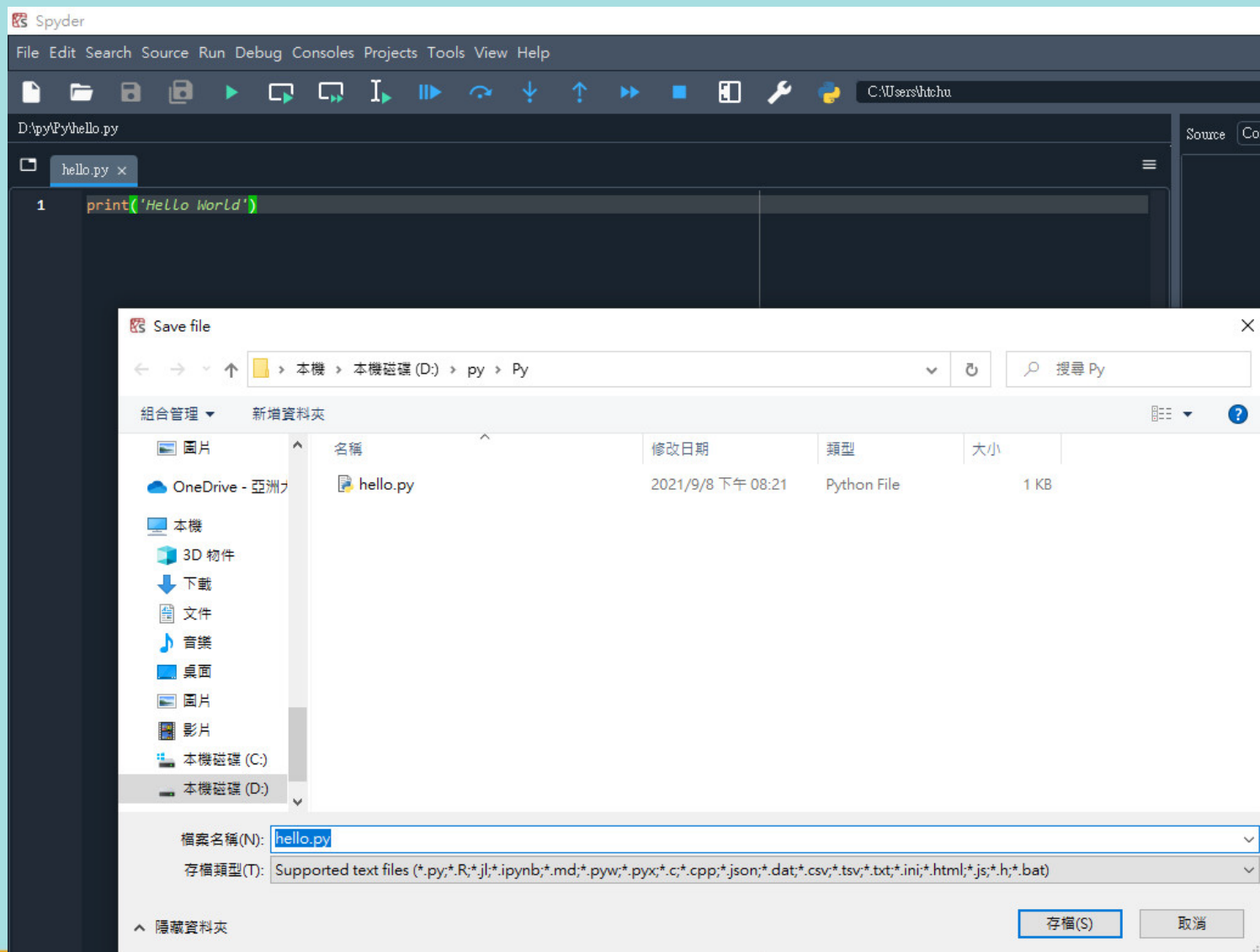
- Python IDLE工具
  - Spyder
  - Visual Studio Code
  - PyCharm
- Colab



# Python IDLE

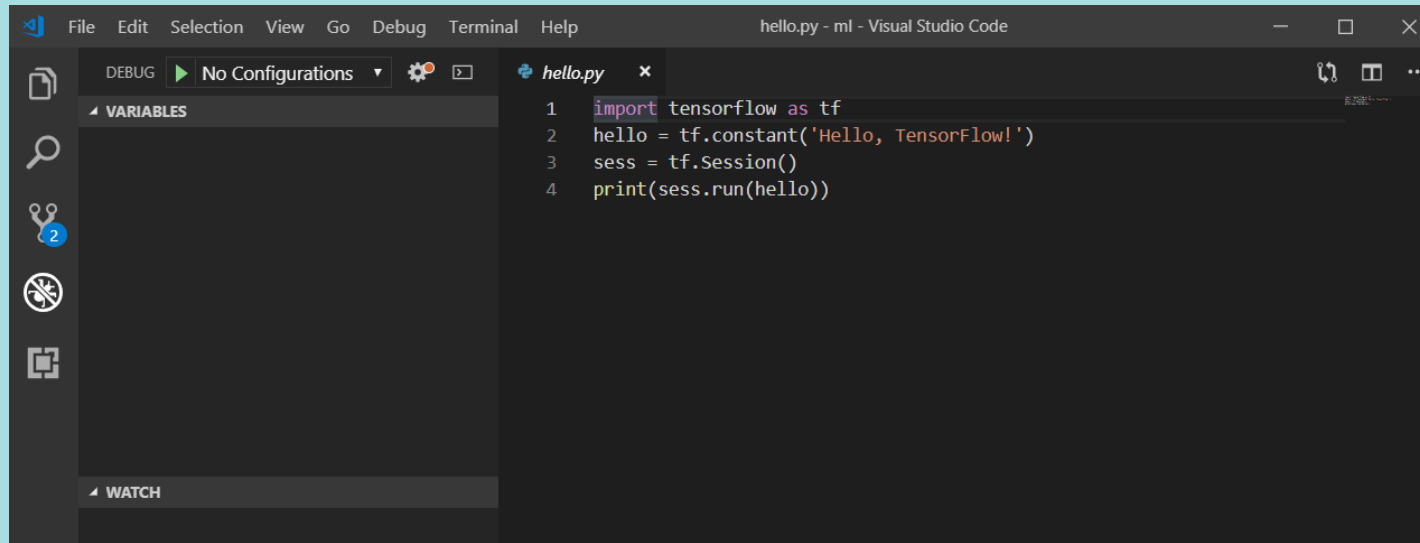


# Spyder

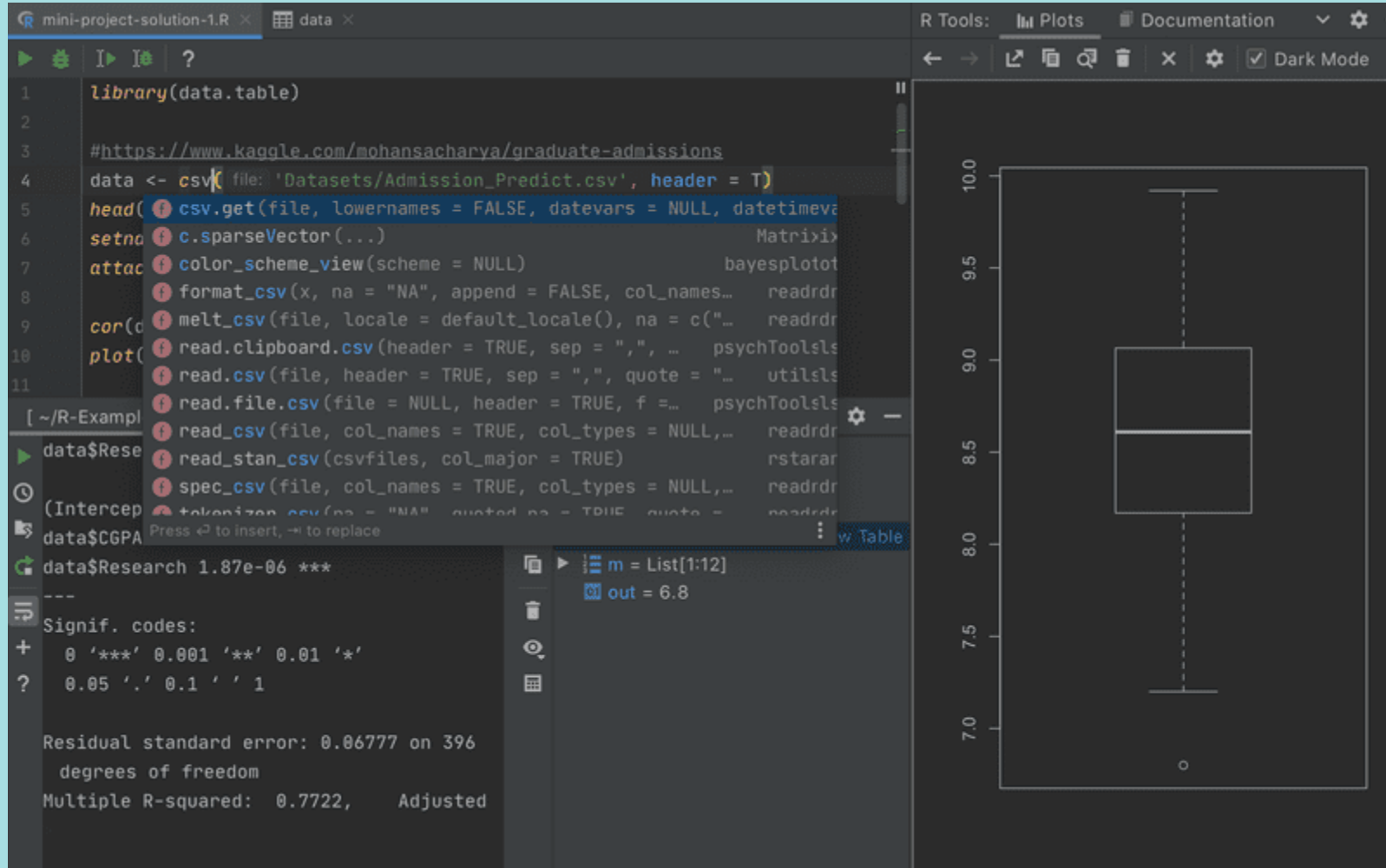




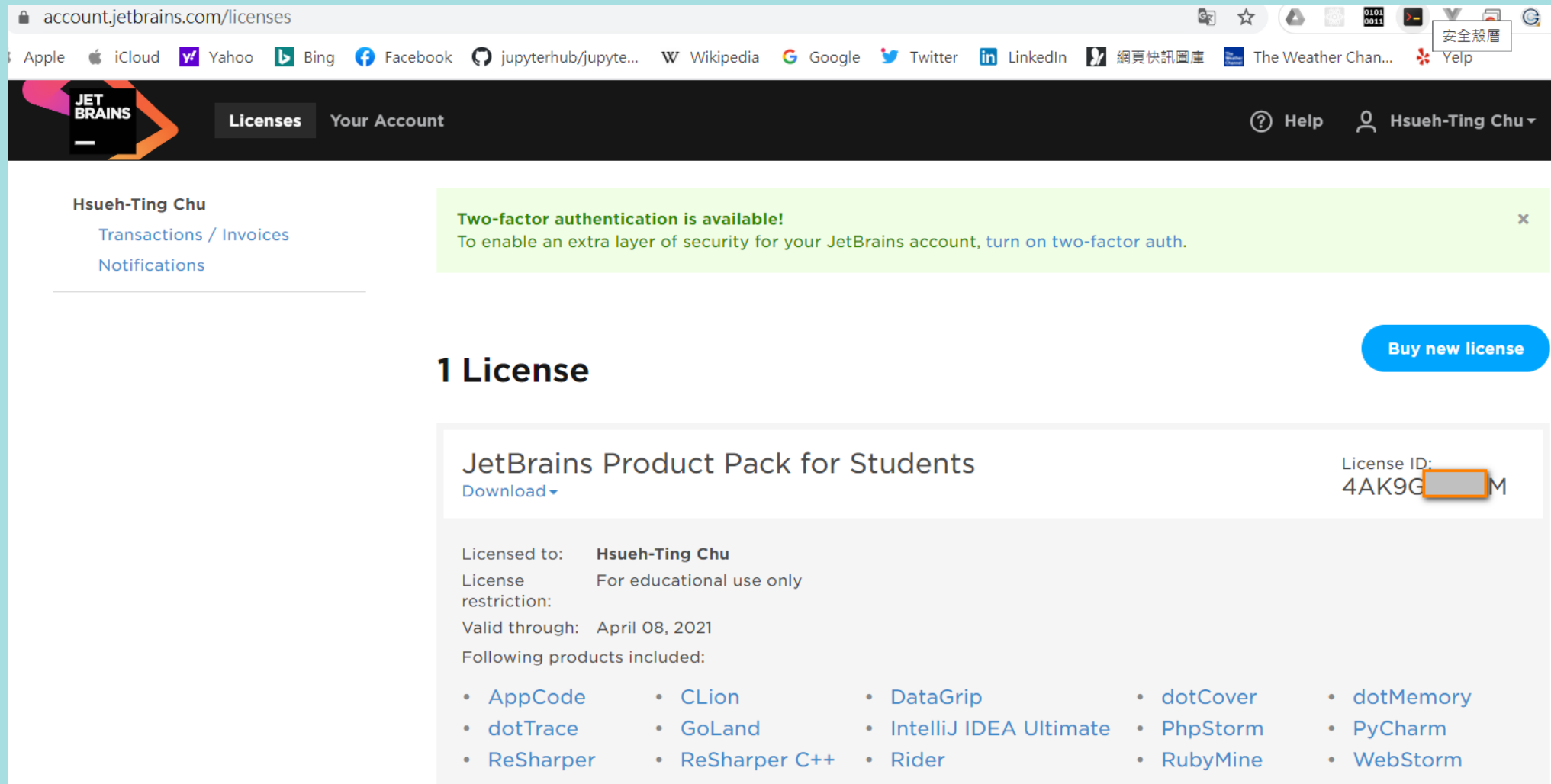
# Visual Studio Code



# PyCharm



# JetBrains Product Pack for Students



The screenshot shows the JetBrains account page for Hsueh-Ting Chu. The browser address bar shows 'account.jetbrains.com/licenses'. The page has a dark header with the JetBrains logo, 'Licenses' and 'Your Account' tabs, and a user profile 'Hsueh-Ting Chu'. A green notification banner states 'Two-factor authentication is available!'. The main content area is titled '1 License' and features a blue 'Buy new license' button. Below this, a license card for 'JetBrains Product Pack for Students' is displayed. The license ID is '4AK9G...M'. The license is for 'Hsueh-Ting Chu' and is 'For educational use only'. It is valid through 'April 08, 2021'. A list of included products is shown in a grid.

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Valid through: April 08, 2021

Following products included:

- AppCode
- CLion
- DataGrip
- dotCover
- dotMemory
- dotTrace
- GoLand
- IntelliJ IDEA Ultimate
- PhpStorm
- PyCharm
- ReSharper
- ReSharper C++
- Rider
- RubyMine
- WebStorm



Thanks!

Q&A

