

Google colab

講師：隋建德

Colab

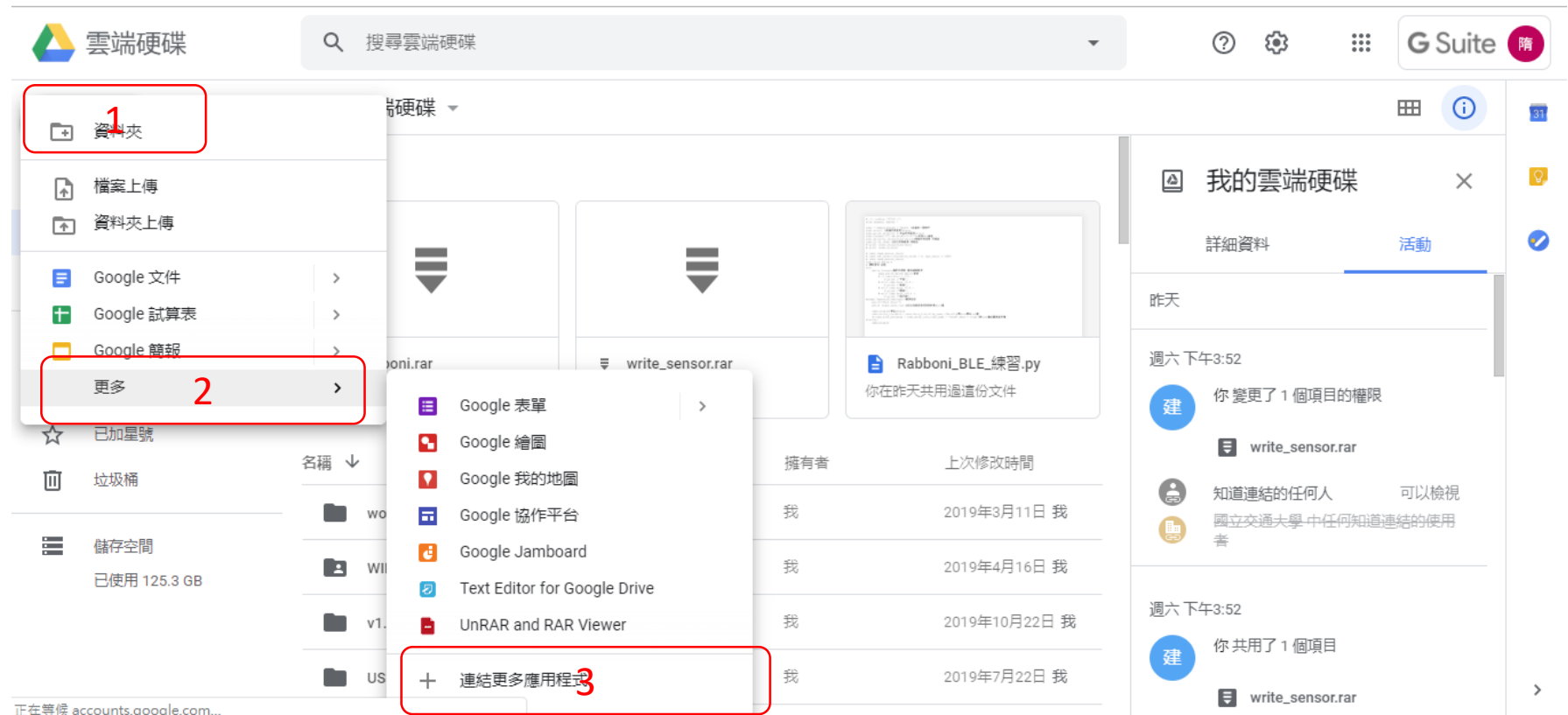
- 架設環境麻煩?
- 作業系統不了解?
- 電腦沒有GPU?
- 買機器太高成本?
- Google Colab

Colab

- 免費
 - 需有Google帳號
- 編輯方式
 - Jupyter Notebook
- 資源
 - 免費的GPU
 - 12小時連續時間限制
- 缺點
 - 讀取資料速度過慢
 - 有連續時效限制

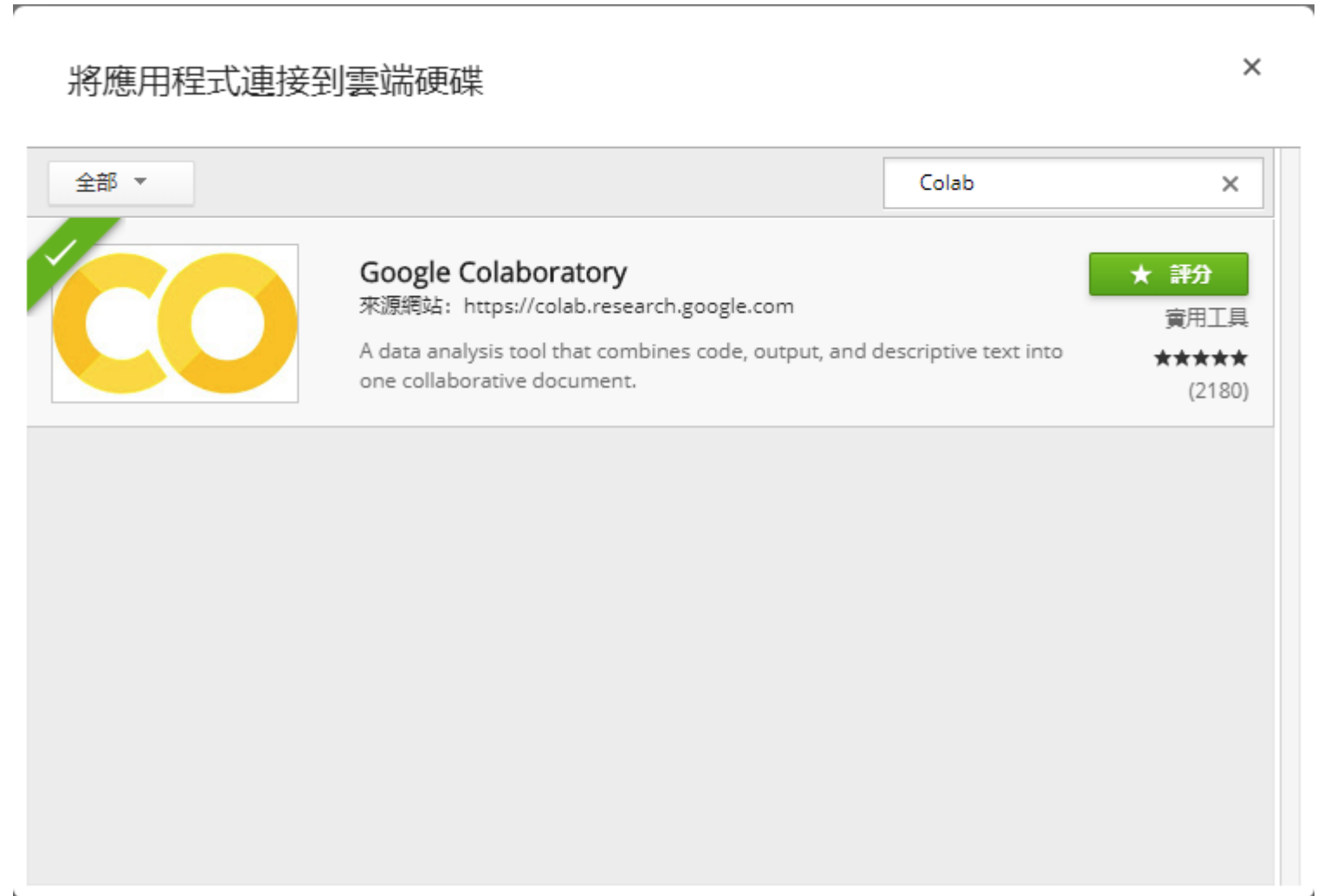
創建Colab

- 左上角新增
- 更多
- 連結更多應用



創建Colab

- 搜尋Colab並連結
- 回到上頁「新增」
- 創建新的 Colab



範例

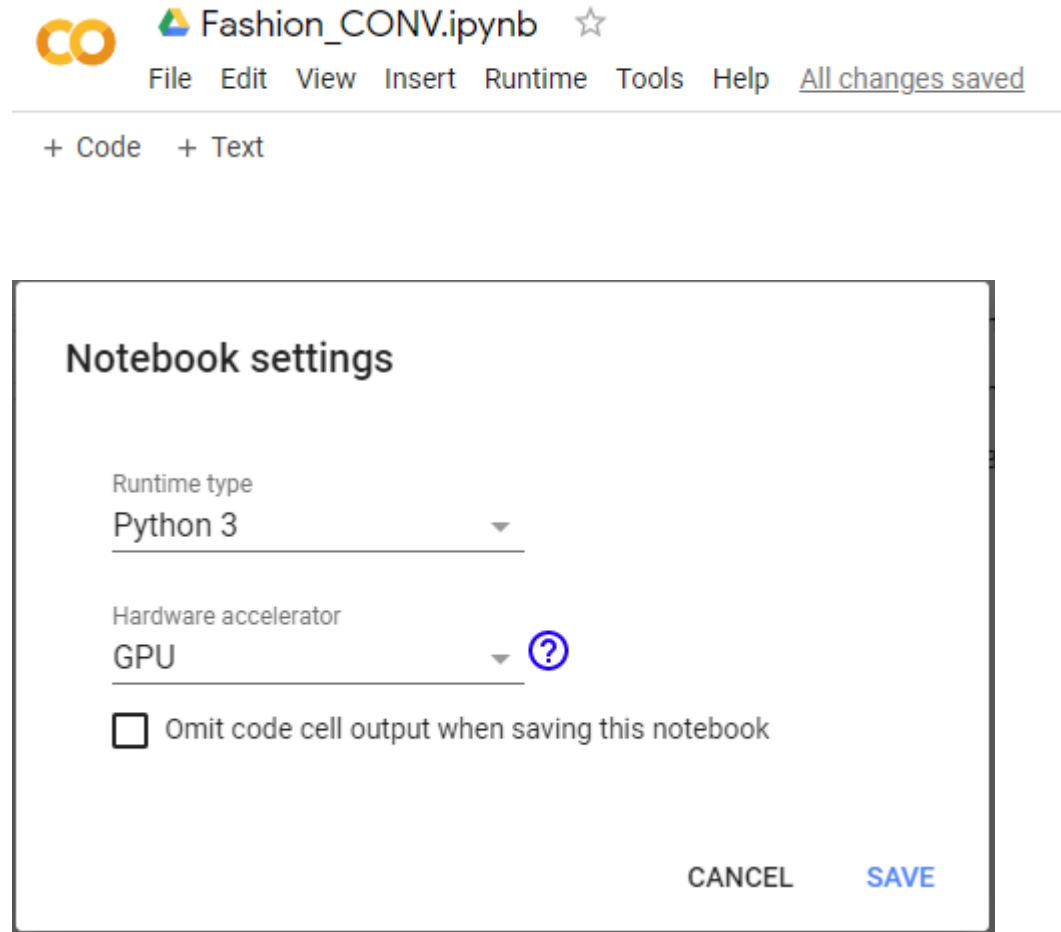
Fashion_CONV.ipynb

Example

- 將第五次上課的 Fashion_CONV.ipynb使用Colab打開
- 步驟
 - 下載 <https://reurl.cc/drg26k>
 - 上傳 自己雲端
 - 使用colab打開
- 操作
 - 與jupyter notebook相同
 - Ctrl+enter 執行block

使用GPU?

- 預設為使用CPU
- 上方工具列
 - Runtime
 - Change runtime type
 - Hardware accelerator
 - 選擇GPU or TPU



範例

HarryPoterConv_colab.ipynb

下載程式

- <https://reurl.cc/qD2nEN>
- 將壓縮檔解壓縮
- 將code整個資料夾上傳至自己的雲端硬碟

讀取Google drive中檔案

- 綁定GoogleDrive
- 執行下方程式碼後 點選網址

```
# 綁定Google Drive
!apt-get install -y -qq software-properties-common python-software-properties module-init-tools
!add-apt-repository -y ppa:alessandro-strada/ppa 2>&1 > /dev/null
!apt-get update -qq 2>&1 > /dev/null
!apt-get -y install -qq google-drive-ocamlfuse fuse
from google.colab import auth
auth.authenticate_user()
from oauth2client.client import GoogleCredentials
creds = GoogleCredentials.get_application_default()
import getpass
!google-drive-ocamlfuse -headless -id={creds.client_id} -secret={creds.client_secret} < /dev/null 2>&1 | grep URL
vcode = getpass.getpass()
!echo {vcode} | google-drive-ocamlfuse -headless -id={creds.client_id} -secret={creds.client_secret}

... E: Package 'python-software-properties' has no installation candidate
Selecting previously unselected package google-drive-ocamlfuse.
(Reading database ... 145655 files and directories currently installed.)
Preparing to unpack .../google-drive-ocamlfuse_0.7.14-0ubuntu1~ubuntu18.04.1_amd64.deb ...
Unpacking google-drive-ocamlfuse (0.7.14-0ubuntu1~ubuntu18.04.1) ...
Setting up google-drive-ocamlfuse (0.7.14-0ubuntu1~ubuntu18.04.1) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
Go to the following link in your browser:

https://accounts.google.com/o/oauth2/auth?code\_challenge=ImnFt1Mx-OZY9dtm6FlcMIISbzSXIblzuaFcAxlwEHg&prompt=select\_account&code\_challenge\_method=S256&access\_type=offline&redirect\_uri=urn%3Aietf%3Awg%3Aoauth%3A2.0%3Aaob&response

Enter verification code: 
```

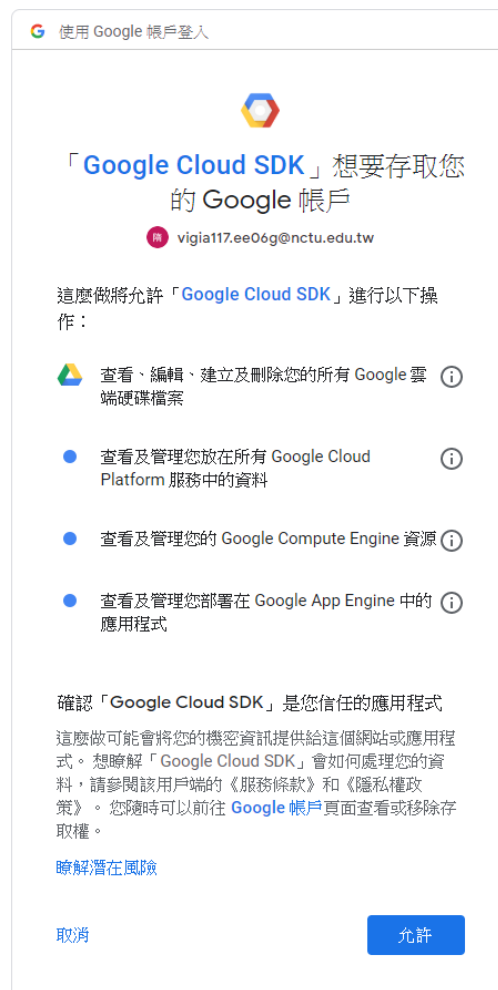
讀取Google drive中檔案

- 進行認證
 - 選取自己的帳號



讀取Google drive中檔案

- 按下允許 並複製授權碼



讀取Google drive中檔案

- 填入授權碼
- 重複一次

```
# 綁定Google Drive
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!add-apt-repository -y ppa:alessandro-strada/ppa 2>&1 > /dev/null
!apt-get update -qq 2>&1 > /dev/null
!apt-get -y install -qq google-drive-ocamlfuse fuse
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auth.authenticate_user()
from oauth2client.client import GoogleCredentials
creds = GoogleCredentials.get_application_default()
import getpass
!google-drive-ocamlfuse -headless -id={creds.client_id} -secret={creds.client_secret} < /dev/null 2>&1 | grep URL
vcode = getpass.getpass()
!echo {vcode} | google-drive-ocamlfuse -headless -id={creds.client_id} -secret={creds.client_secret}
```

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Enter verification code:

讀取Google drive中檔案

- 切換目錄
 - Google drive 自己的雲端根目錄名稱為drive
 - 執行以下程式碼
 - 切換至code的資料夾

```
!mkdir -p drive  
!google-drive-ocamlfuse drive
```

```
[3] #指定工作的目錄  
import os  
os.chdir("drive/code/")  
!ls
```

augmentation.ipynb data HarryPoterConv_colab.ipynb HarryPoterConv_stu.ipynb

缺點

- 從Google drive 讀取資料
 - 太多筆資料 – 過慢
- Rabboni資料處理方式
 - 將多筆串為一筆
 - 只讀一筆
 - 使用Colab去切檔案
- Example
 - 50 file , 1secod/file
 - 串成一筆 1file, 50secod/file
 - 在Colab上切為 50second