Machine Learning HW0

TAs
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Outline

- 加簽規則
- 作業說明
- GitHub設定

加簽規則

- 欲加簽者需在**明天中午12:00前**完成HW0，依照指定方式繳交，未完成者無法加簽。
- 助教批改完之後會寄授權碼至同學學校信箱
  - 收信時會收到一份**文件**及**全部授權碼的照片**，每張授權碼都有編號，請在文件中確認自己學號對應的編號，並依照該編號找到對應的授權碼並至選課系統加簽。

HW0

- HW0希望確保同學們能夠執行機器學習所需的一些基本操作。
- 往後的作業會用GitHub繳交，每位同學要有GitHub帳號並將repository設為private。
- 請依照規定格式繳交，若是格式不符視同錯誤，請不要來跟助教爭論。
- Q1及Q2皆可自由使用現成套件
- 助教批改環境：Linux
- 資料位置：http://ppt.cc/n7gs4

Q1 矩陣運算

matrixA.txt , shape(1,50)

matrixB.txt , shape(50,10)

1. 讀取.txt中的矩陣

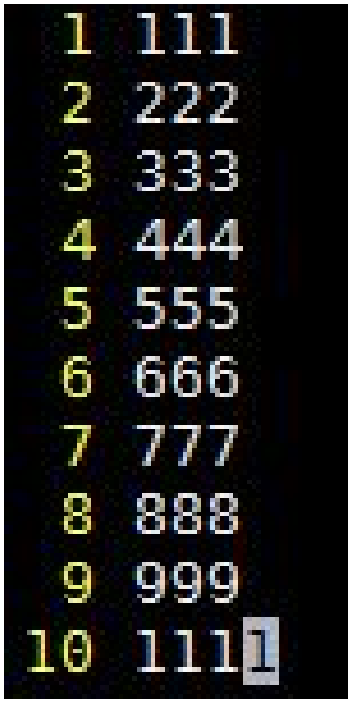
2. 進行矩陣乘法 - matrixA * matrixB

3. 將得到的矩陣數值, 由小到大排序後輸出至ans_one.txt (輸出格式參考下頁)

建議使用套件:python_numpy

Q1 矩陣運算 - 輸出範例

一行一個數值，每行開頭即是數值，不要有任何的空格。
請遵守格式，任何其他的格式都算錯誤。



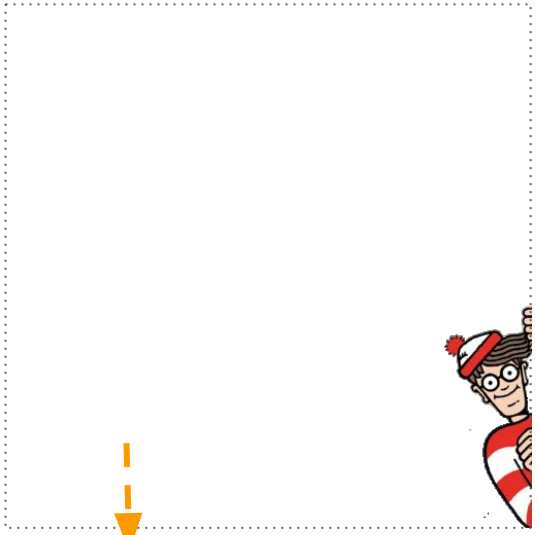
Q2

1. 讀取lena.png與lena_modified.png
2. 使用後者異於前者的部分產生相同格式的新圖檔(ans_two.png)。

Input 1

Input 2

Output



(0,0,0,0) in RGBA

繳交格式

./Q1.sh matrixA.txt matrixB.txt

輸出檔名: ans_one.txt

./Q2.sh lena.png lena_modified.png

輸出檔名: ans_two.png

將這兩個script以及你的程式放在ML2017/hw0/底下
ML2017是助教改作業的repository，hw0是本次作業的資料夾名稱，請大家將作業放在正確的地方，沒放正確是不會被批改的，位置如下：

ML2017/hw0/Q1.sh
ML2017/hw0/Q2.sh

填Git Repo URL表單: https://goo.gl/forms/XtzWWLoENzhk9FSi2

GitHub

開設GitHub帳號

1. GitHub: https://github.com/ 使用學校信箱開帳號
   a. 學校信箱可免費使用private功能
   b. 可綁定多個信箱
2. 申請學生版的附加功能
   a. 網址: https://education.github.com/
   b. 點選 Request a discount
   c. 輸入資料, 靜候佳音

step 1.進入網址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Dozens of free resources from great companies to help students learn.
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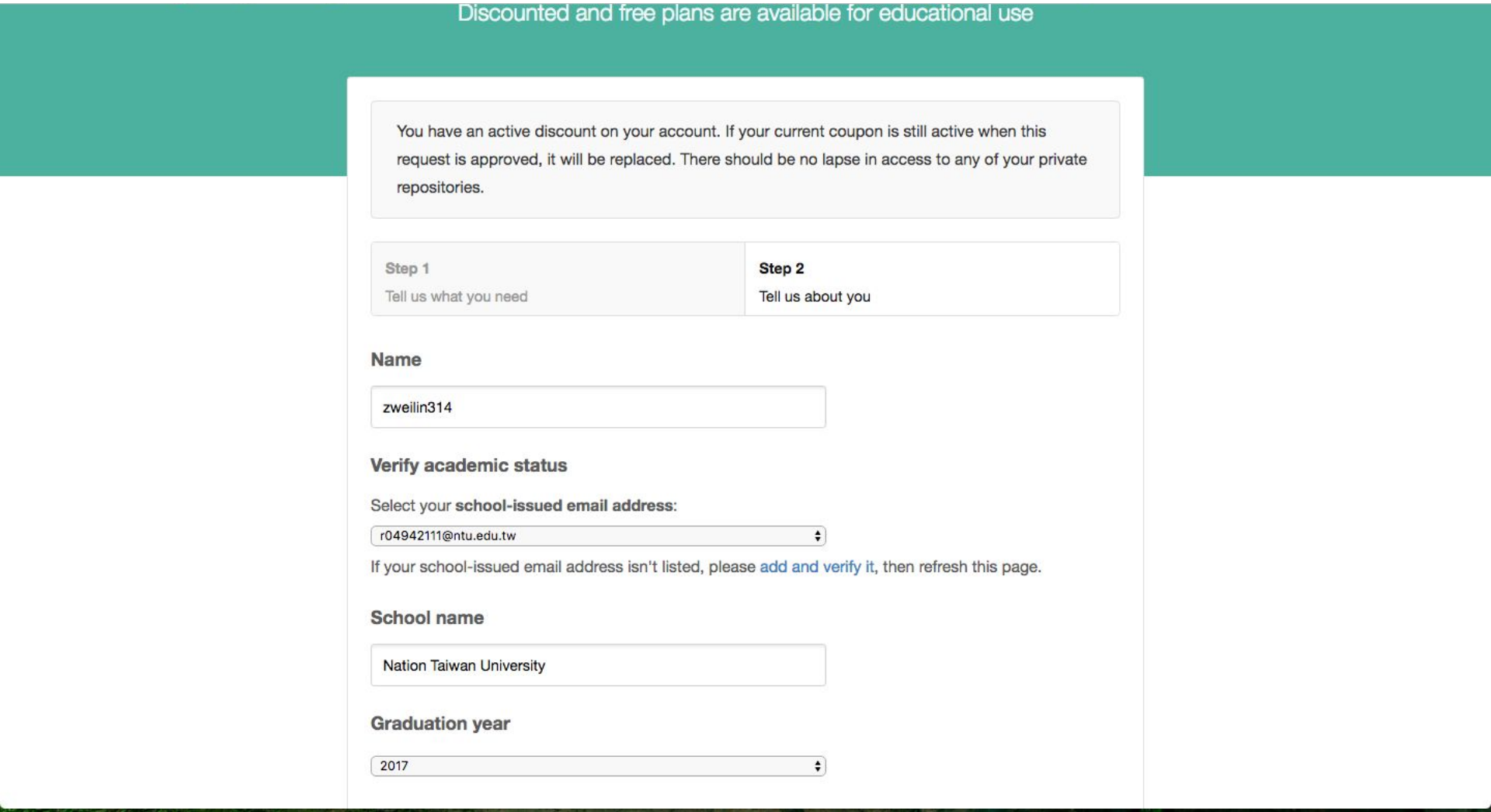
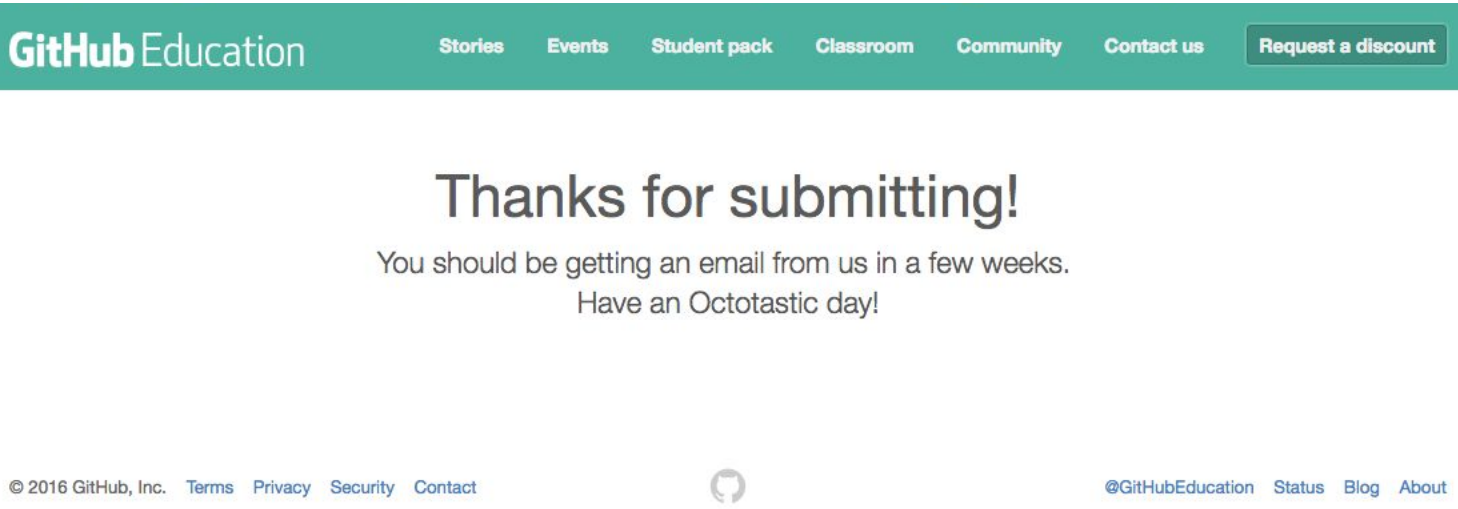
STORIES

step 2.填入資料


Discounted and free plans are available for educational use
You have an active discount on your account. If your current coupon is still active when this request is approved, it will be replaced. There should be no lapse in access to any of your private repositories.
Step 1
Tell us what you need
Step 2
Tell us about you
Name
zweilin314
Verify academic status
Select your school-issued email address:
r04942111@ntu.edu.tw
If your school-issued email address isn't listed, please add and verify it, then refresh this page.
School name
Nation Taiwan University
Graduation year
2017

step 3.靜候佳音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Thanks for submitting!
You should be getting an email from us in a few weeks.
Have an Octotastic day!
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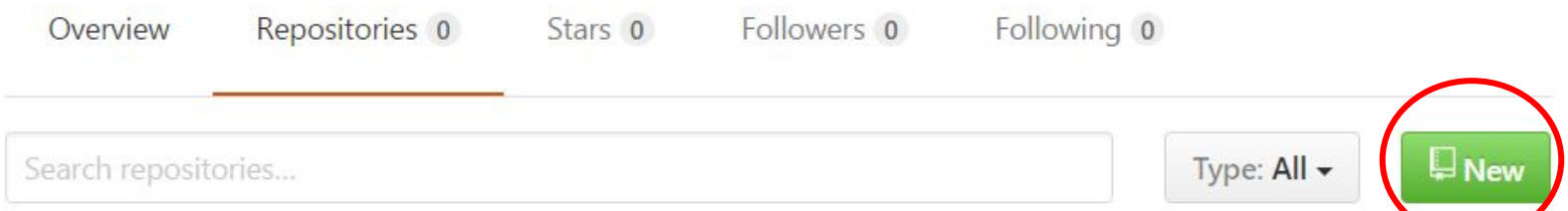
作業繳交

1. New repository
   a. 請將名稱取為 ML2017
   b. 往後所有的作業程式都會在這個路徑下被批改
   c. 權限請設為private
2. 將助教帳號加入存取權
   a. 名稱: ntumlta

Create New Repository



Create a new repository

A repository contains all the files for your project, including the revision history.

Owner ntumlta / **Repository name** ML2017

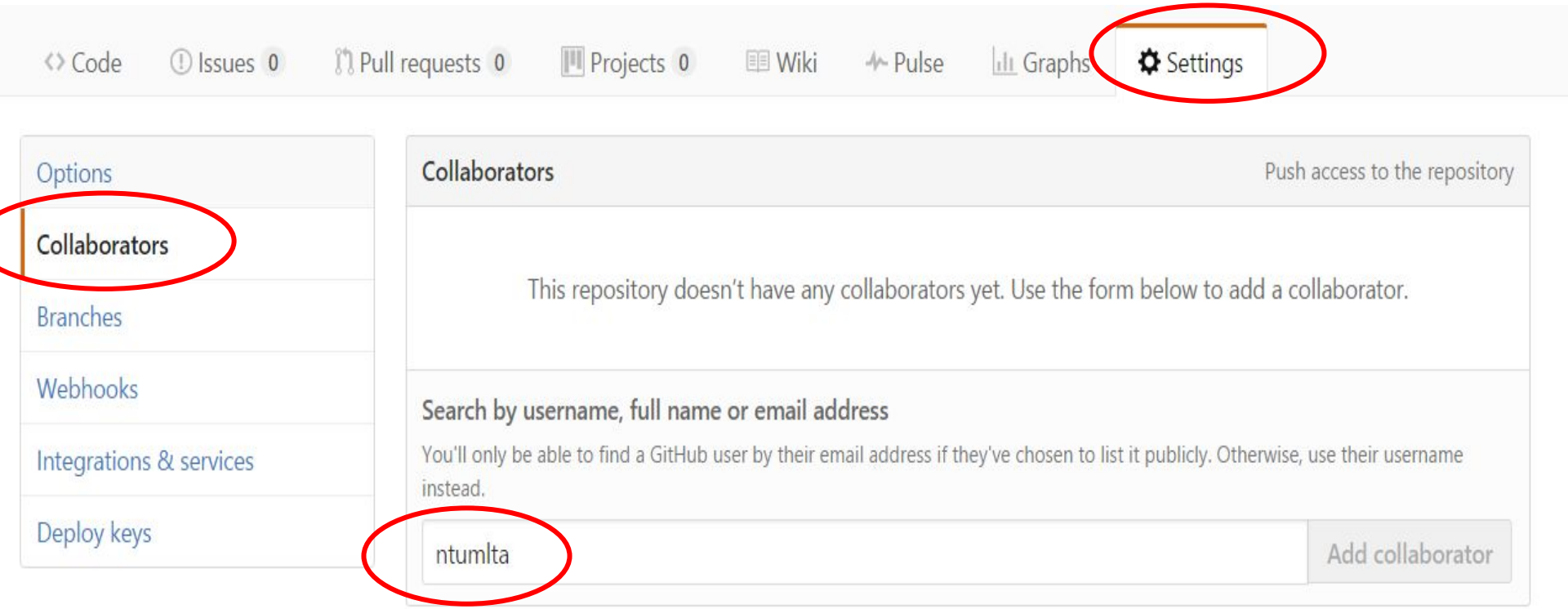
Great repository names are short and memorable. Need inspiration? How about **improved-system**.

Description (optional)

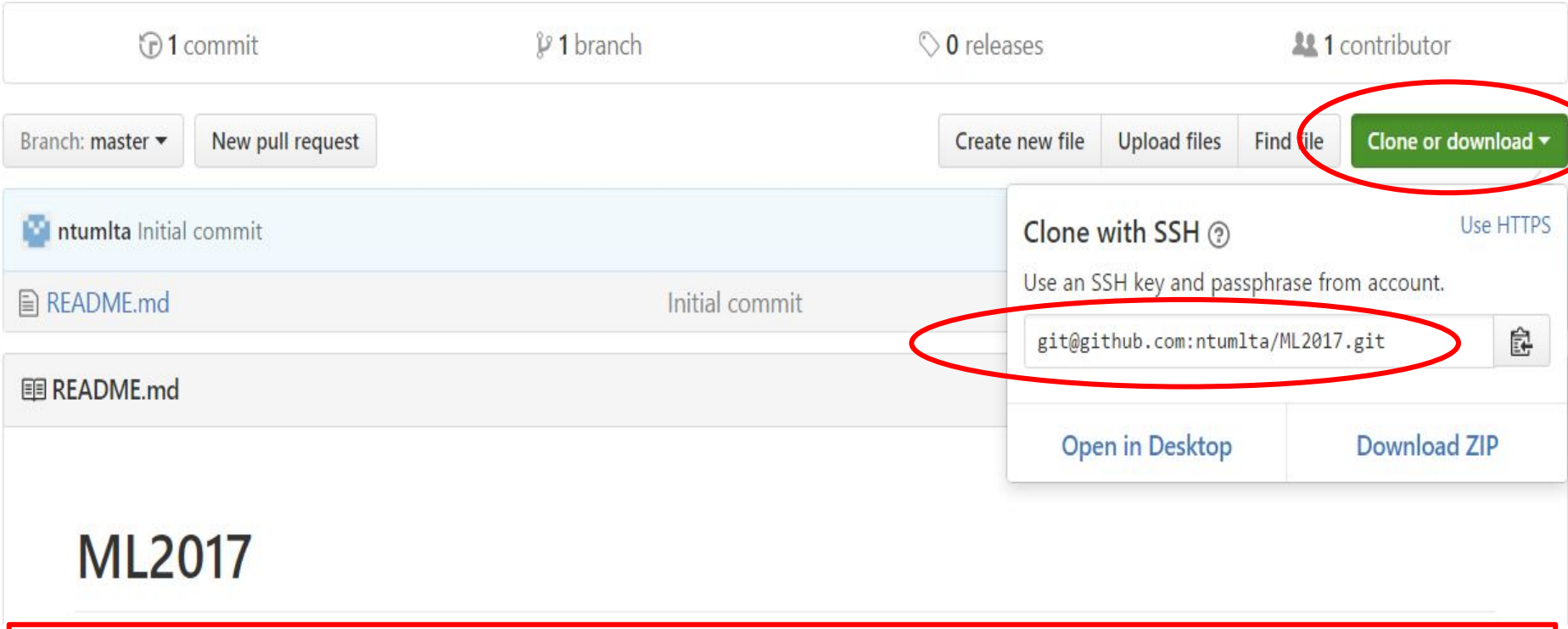
Public
Anyone can see this repository. You choose who can commit.

Private
You choose who can see and commit to this repository.

Add TA account to Collaborators



Get Your Git Repo URL

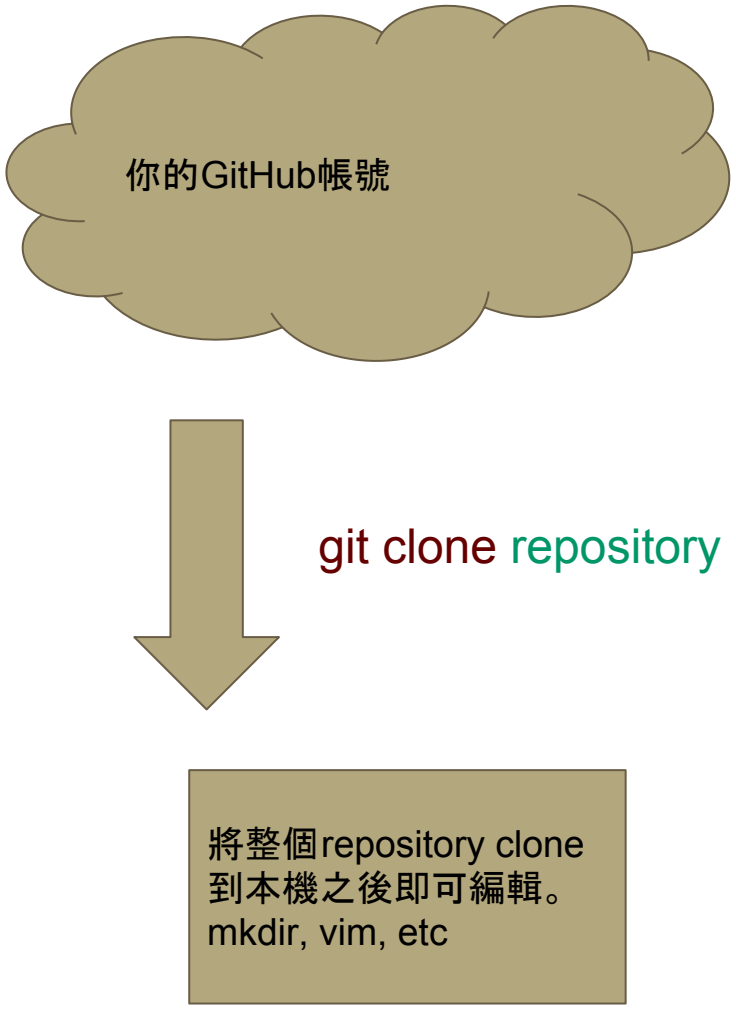


填Git Repo URL表單:

https://goo.gl/forms/XtzWWLoENzhk9FSi2

GitHub

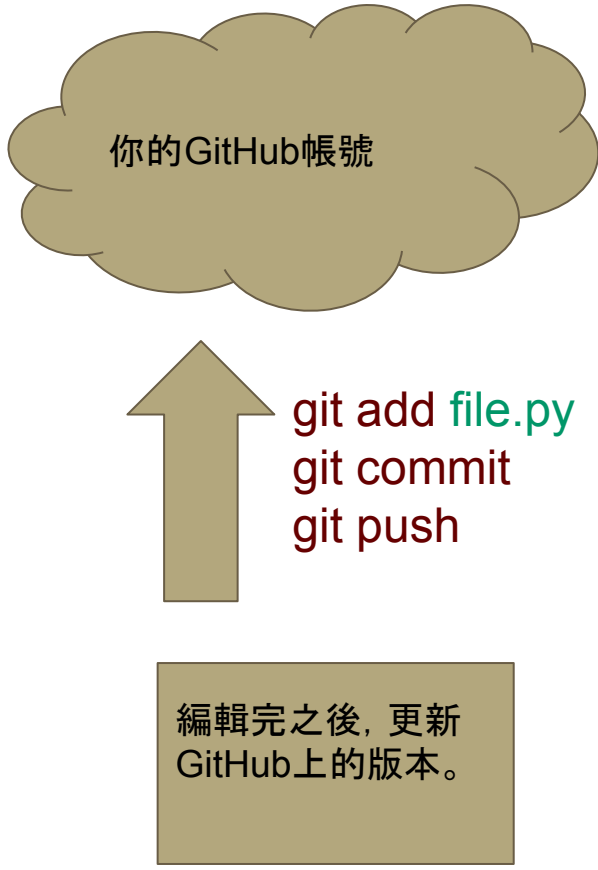
1. Open your terminal.
2. $git clone ***git repo url***
3. $cd ML2017
4. $mkdir hw0
5. ...
6. ...



GitHub

1. $git add xxx.py
   (請確保所有作業所需檔案
   都被成功加入repository
   (Q1.sh, Q2.sh, Q1.py Q2.py...)
2. $git commit
3. $git push
4. 在GitHub網頁上確認master是否已更新

更多 : https://goo.gl/NRRCLm



Q&A

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Windows系統怎麼辦

安裝Linux virtual box

a. 優:用起來跟Linux一樣，有問題可以詢問助教
b. 劣:花一點時間安裝

該使用什麼程式語言

限定使用python, C , C++

建議大家使用Python，處理檔案方便，助教的範例也是使用Python。

python2 or 3都可以

如何讀圖

Python有許多現成的工具可以讀圖, ex: PIL

from PIL import Image

參考資料: https://goo.gl/Lvvxh1