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# 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(9/16)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。
- ❖ 助教批改環境:Linux
- ❖ 資料位置:<https://ppt.cc/fzdYXx>

# Q1 出現字數統計

1. 讀取words.txt中的所有英文單字，英文單字之間皆由<space>做分隔
2. 按照單字出現的順序，給予編號(0, 1, 2 ...)。(不要跳號)
3. 計算單字出現的次數。
4. 將得到編號和次數，由單字出現在words.txt的順序輸出至Q1.txt, 最後一行不要換行，每一行皆為：  
<單字><space><編號><space><出現次數>  
(輸出範例參考下頁)
5. Ntu, ntu 為不同單字

# Q1 出現單字統計 - 輸出範例

words.txt : (助教給的檔案)

ntu ml mlds ml ntu ntuee

Q1.txt : (輸出的檔案)

ntu 0 2

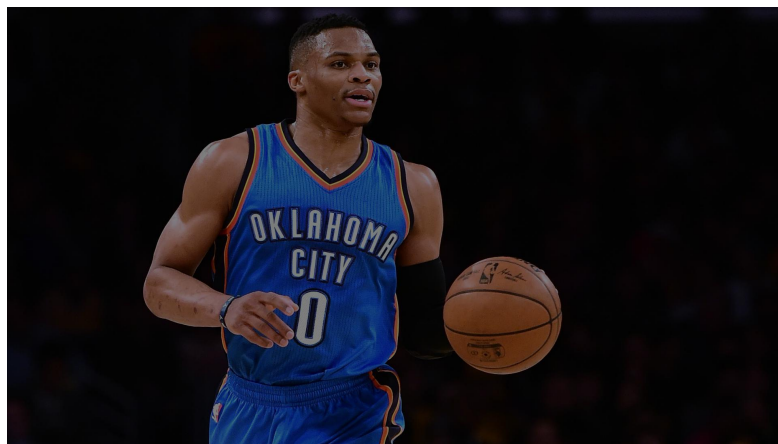
ml 1 2

mlds 2 1

ntuee 3 1

## Q2 圖片淡化

1. 讀取 westbrook.jpg
2. 將每個pixel的RGB數值都減半(ex: (122, 244, **245**)-> (61, 122, **122**)), 再將圖片輸出為 Q2.png
3. RGB數值記得要去掉小數點！(無條件捨去)



# 繳交格式

`./Q1.sh <DATA_FILE_PATH>`

輸出檔名: Q1.txt

`./Q2.sh <IMAGE_FILE_PATH>`

輸出檔名: Q2.png

範例command: `./Q1.sh ./words.txt` 輸出的檔案: `./Q1.txt`

將這兩個script以及你的程式放在**ML2017FALL/hw0**底下

**ML2017FALL**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:

`ML2017FALL/hw0/<your files>`

填Github Repo URL表單: <https://ppt.cc/fB0g9x>



# 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

GitHub Education

Stories

Events

Student pack

Classroom

Community

Contact us



TEACH AND LEARN  
BETTER, TOGETHER

Request a discount



STUDENT DEVELOPER PACK



## Get the Student Developer Pack

Dozens of free resources from great companies to help students learn.

Get the pack

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

#### Verify academic status

Select your **school-issued email address**:

If your school-issued email address isn't listed, please [add and verify it](#), then refresh this page.

#### School name

#### Graduation year

# step 3. 静候佳音

GitHub Education

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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 **ML2017FALL**
- 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

Overview

Repositories 0

Stars 0

Followers 0

Following 0

Search repositories...

Type: All ▾

 New

Owner

Repository name

[Redacted]

/ ML2017FALL ✓

Great repository names are short and memorable. Need inspiration? How about **ideal-sniffle**.

Description (optional)

☐  **Public**

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

☒  **Private**

You choose who can see and commit to this repository.

☐ **Initialize this repository with a README**

This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None** ▾

Add a license: **None** ▾



# Add TA account to Collaborators

The screenshot shows the GitHub repository settings page. The 'Settings' tab is selected in the top navigation bar. On the left sidebar, the 'Collaborators' option is highlighted. The main content area is titled 'Collaborators' and includes a link to 'Push access to the repository'. A message states: 'This repository doesn't have any collaborators yet. Use the form below to add a collaborator.' Below this, there is a search instruction: 'Search by username, full name or email address' and a note: 'You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.' A text input field contains the username 'ntumlta', and an 'Add collaborator' button is to its right.

Code Issues 0 Pull requests 0 Projects 0 Wiki Pulse Graphs **Settings**

Options **Collaborators** Branches Webhooks Integrations & services Deploy keys

**Collaborators** [Push access to the repository](#)

This repository doesn't have any collaborators yet. Use the form below to add a collaborator.

**Search by username, full name or email address**

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

[Add collaborator](#)



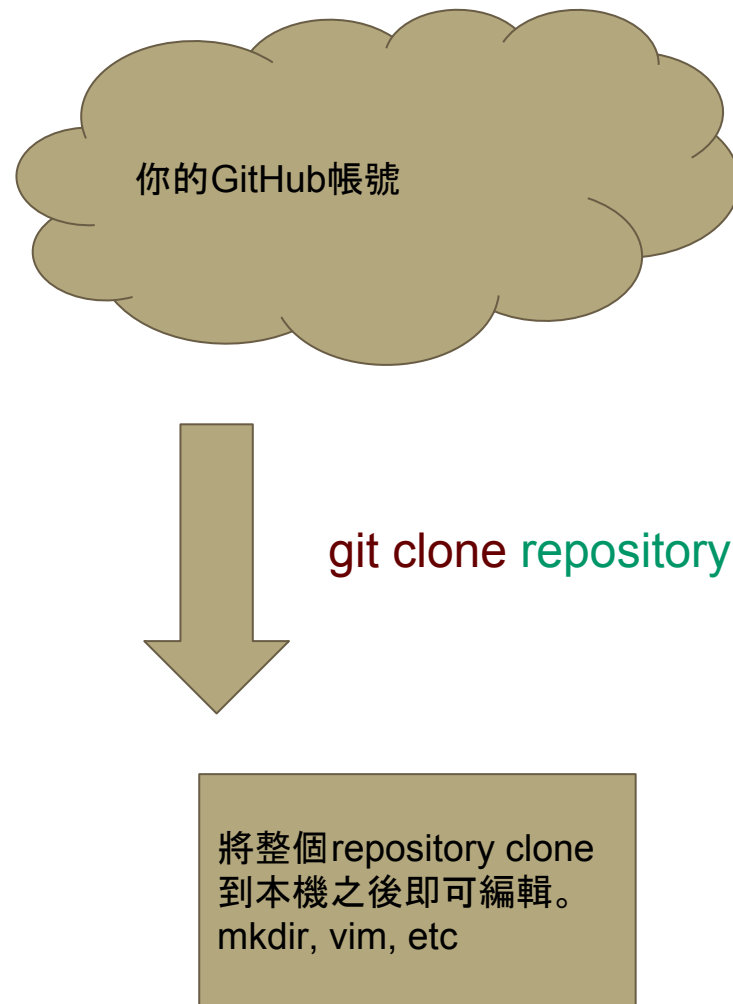
# Get Your Git Repo URL

The screenshot shows a GitHub repository interface. At the top, it displays '1 commit', '1 branch', '0 releases', and '1 contributor'. Below this, there are buttons for 'Branch: master', 'New pull request', 'Create new file', 'Upload files', 'Find file', and a green 'Clone or download' button. The 'Clone or download' button is circled in red. A dropdown menu is open from this button, showing two options: 'Clone with SSH' and 'Use HTTPS'. The 'Clone with SSH' option is selected, and the SSH URL 'git@github.com:ntumlta/ML2017.git' is displayed in a text box, which is also circled in red. Below the text box are buttons for 'Open in Desktop' and 'Download ZIP'. The repository name 'ntumlta' and 'Initial commit' are visible. The file 'README.md' is listed. The repository title 'ML2017' is at the bottom.

填Git Repo URL表單: <https://ppt.cc/fB0g9x>

# GitHub

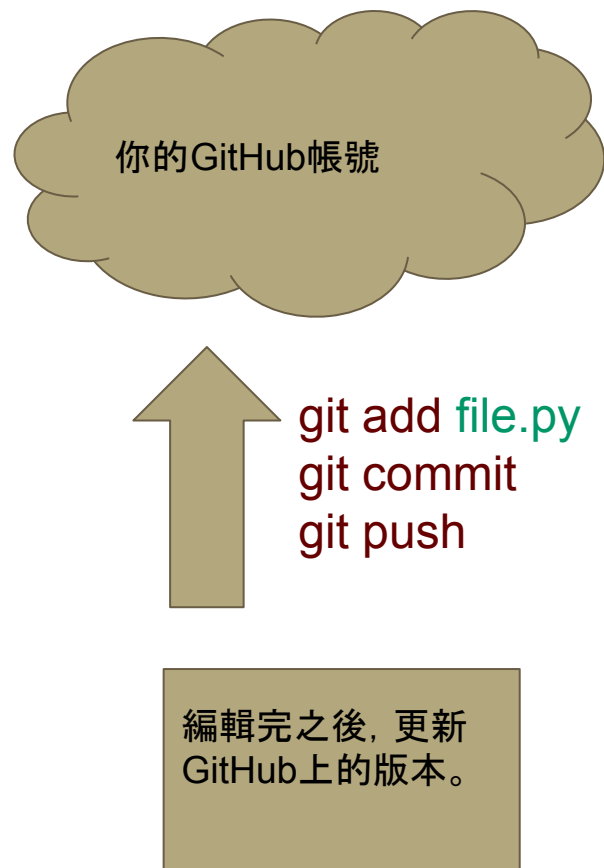
1. Open your terminal.
2. `$git clone git repo url`
3. `$cd ML2017FALL`
4. `$mkdir hw0`
5. ...
6. ...



# 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

[ntu.mlta@gmail.com](mailto:ntu.mlta@gmail.com)

# Windows系統怎麼辦

## 安裝virtual machine

- 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**3.5**以上

# 可以使用(import)什麼套件

Q1 : 無

Q2 : PIL

請勿在作業中import其他非內建套件

內建的module是可以import的 ex: sys