

# Line聊天機器人 + AI數字影像辨識

2019 Ian Fan 范財銘



# AI 影像辨識手寫數字

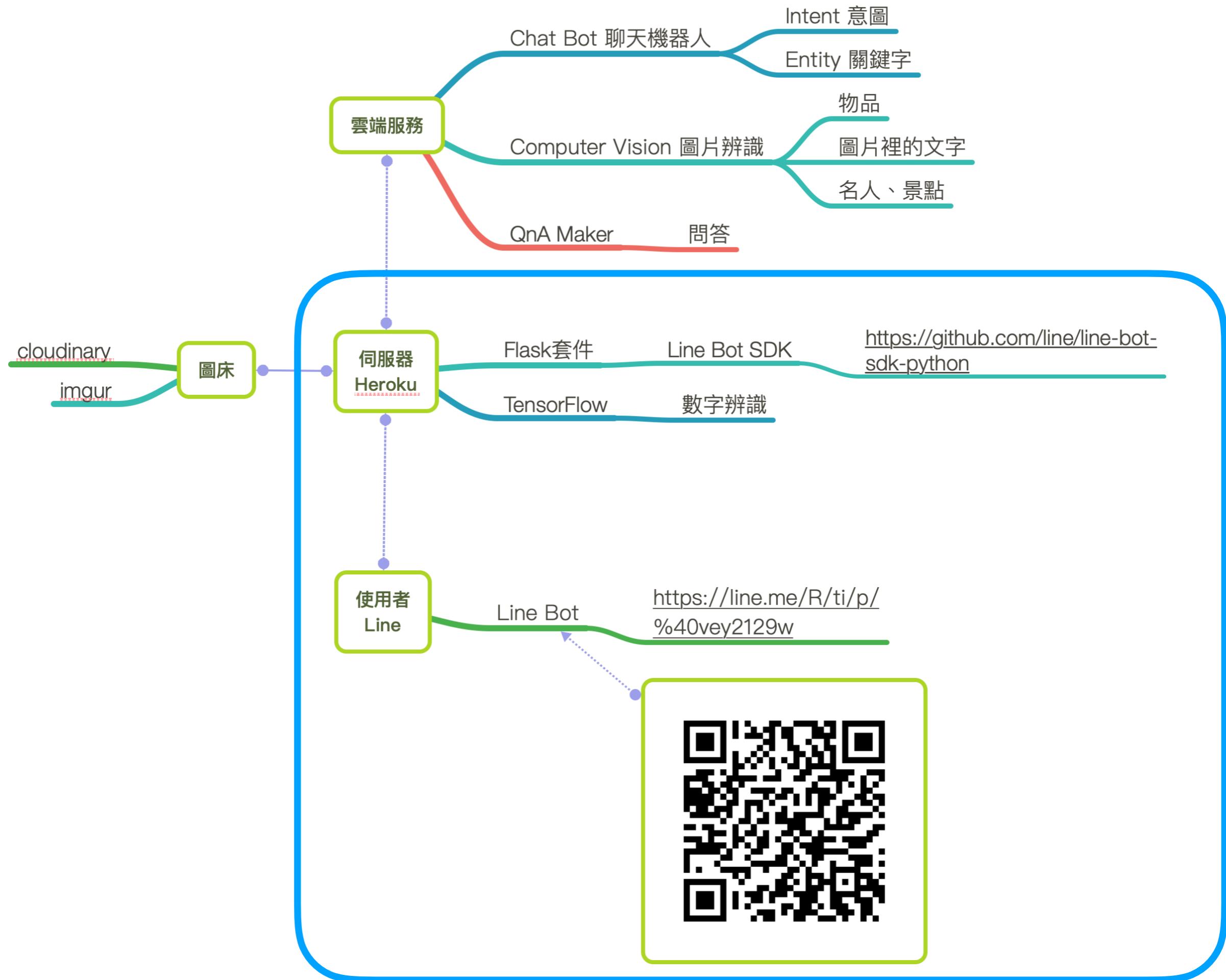
Line 聊天機器人

Heroku 伺服器



# 目標成品





# 下載開發環境

<https://www.anaconda.com>

The screenshot shows the top navigation bar of the Anaconda website. On the left is the Anaconda logo. To its right are five menu items: Products, Why Anaconda?, Solutions, Resources, and Company. A green 'Download' button is positioned on the far right of the bar. A blue rectangular box with a red circle containing the number '1' is overlaid on the 'Download' button. A magnifying glass icon is located at the far right end of the bar.

**Anaconda and JetBrains  
Join Forces to Launch  
'PyCharm for Anaconda'**

[Learn More](#)



Latest news: *Anaconda named a May 2019 Gartner Peer Insights Customers' Choice for Data Science and Machine Learning Platforms.*

網頁往下滑

A screenshot of a website showing the download options for Anaconda. A large blue arrow points downwards from the top left towards the 'Windows' section. A red circle with the number '1' is positioned above the 'Windows' button. A blue rounded rectangle highlights the 'Windows' and 'macOS' buttons. Below them, the 'Linux' button is shown with its respective icon. The text 'Anaconda 2019.03 for Windows Installer' is displayed prominently. Two sections are visible: 'Python 3.7 version' and 'Python 2.7 version'. The 'Python 3.7 version' section contains a green 'Download' button (circled in blue with '2') and links for '64-Bit Graphical Installer (662 MB)' and '32-Bit Graphical Installer (546 MB)'. The 'Python 2.7 version' section contains a green 'Download' button and links for '64-Bit Graphical Installer (587 MB)' and '32-Bit Graphical Installer (493 MB)'.

1

Windows | macOS | Linux

Anaconda 2019.03 for Windows Installer

Python 3.7 version

Download 2

64-Bit Graphical Installer (662 MB)

32-Bit Graphical Installer (546 MB)

Python 2.7 version

Download

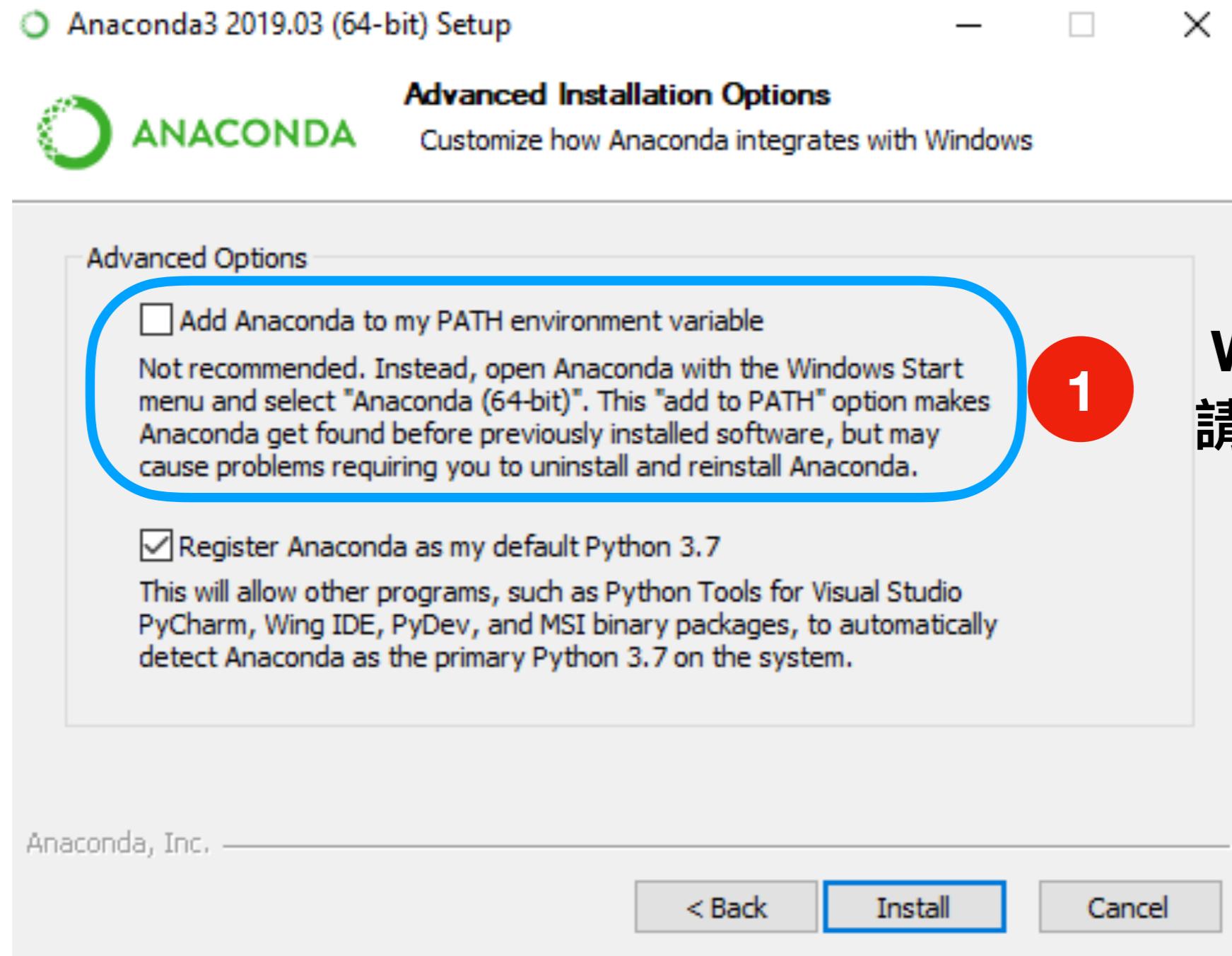
64-Bit Graphical Installer (587 MB)

32-Bit Graphical Installer (493 MB)

# Windows 原則上安裝在C槽，除非空間不夠才選別的硬碟 (D)

## Windows/Mac 都選擇「Install for me only」

(Mac 注意：如果有錯誤提示「You cannot install Anaconda in this location」，請重新選擇「Install for me only」並點下一步)



**Windows  
請都要打勾**

# ANACONDA NAVIGATOR

Home

Environments

Learning

Community

Documentation

Developer Blog



2

Create

Search Environments



Installed

Channels

Update index...

line-bot-sdk



base (root)

python2

spinningup



tensorflow

Create new environment

Name: tensorflow

Location: /Users/ianfan/anaconda3/envs/tensorflow

Packages:  Python

3.6

R

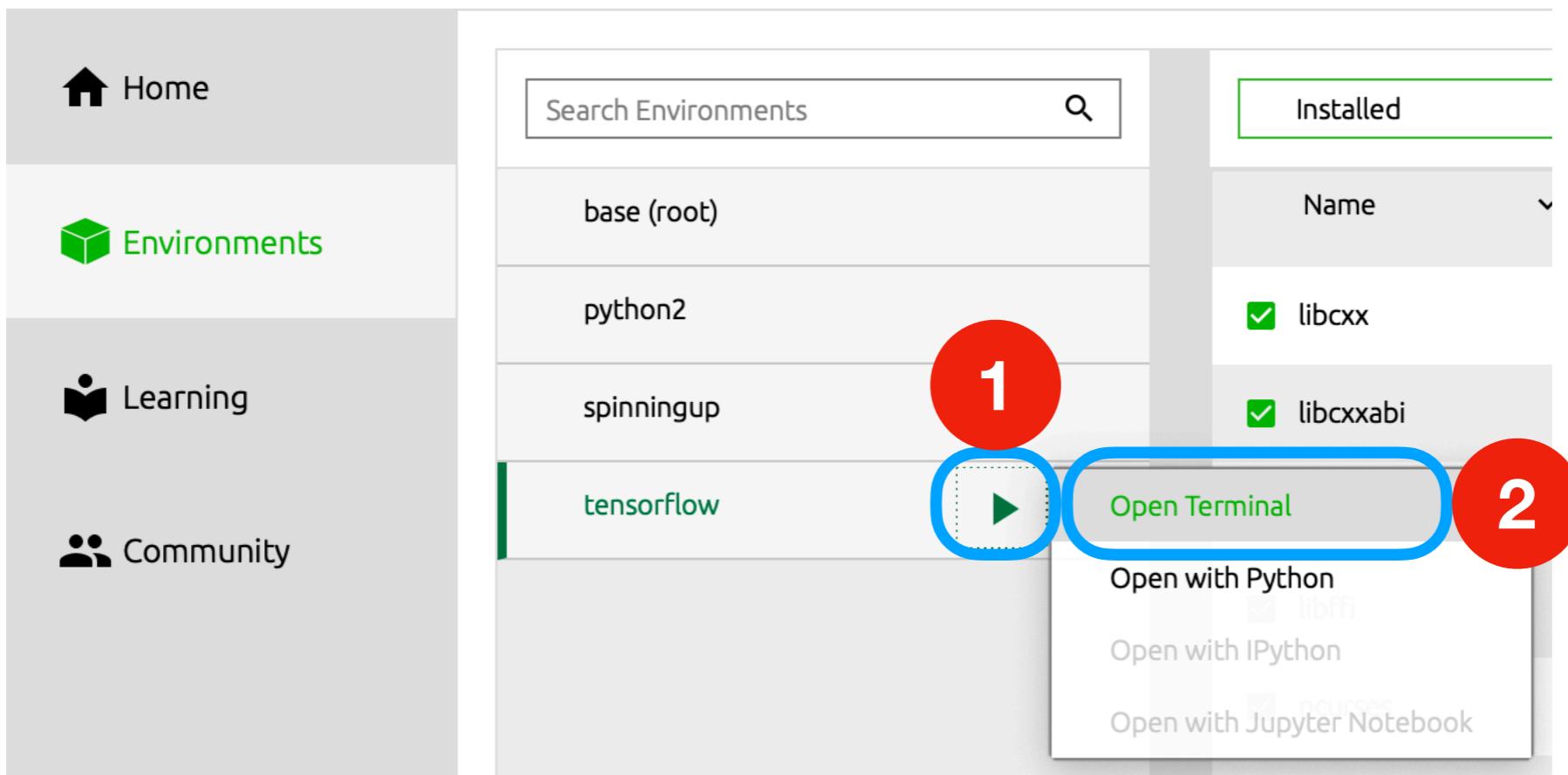
R

Cancel

Create

0 packages available matching "line-bot-sdk"

# ANACONDA NAVIGATOR



ianfan@Ian-Fan-MacBook-Pro-2018 ~ ? source activate tensorflow  
(tensorflow) ianfan@Ian-Fan-MacBook-Pro-2018 ~ ? pip install ipython

有出現(環境名稱)才是正確的

(tensorflow) ianfan@Ian-Fan-MacBook-Pro-2018 ~ ? activate tensorflow

3 Mac

3 Windows

# Mac 安裝方法

<https://www.anaconda.com/download/#macos>

下載「64-Bit Graphical Installer」

選擇「Install for me only」

(注意：如果有錯誤提示「You cannot install Anaconda in this location」，請重新選擇「Install for me only」並點下一步)

最好把bash\_profile跟shrc設置好環境路徑，以後就可以在任意目錄下執行Anaconda的指令

vim ~/.bash\_profile

複製貼上以下三行

#added by Anaconda3 5.2.0 installer

export PATH=~/anaconda3/bin:\$PATH

export PATH="/anaconda3/bin:\$PATH"

保存並退出（打:wq）

vim ~/.zshrc

複製貼上以下三行

#added by Anaconda3 5.2.0 installer

export PATH=~/anaconda3/bin:\$PATH

export PATH="/anaconda3/bin:\$PATH"

保存並退出（打:wq），再source ~/.zshrc

先把conda更新

conda upgrade conda

conda upgrade --all

安裝 Jupyter

conda install jupyter notebook

產生一個環境，名叫「tensorflow」，python版本3.5以上，建議3.6（會創建在你的anaconda3/envs/，新增移除都方便）

conda create -n tensorflow python=3.6

記得！！每次進terminal終端機，第一件事先進這個叫「tensorflow」的環境（有進入前面會有tensorflow的字串），再安裝工具或執行Jupyter  
source activate tensorflow

注意：若有錯誤提示信息pip版本太低，才要更新pip版本，不然不用upgrade

pip3 install --upgrade pip

更新 tensorflow

pip install --ignore-installed --upgrade tensorflow

**安裝各種工具，不是 pip install，就是 conda install**

**pip install ipython**

**pip install line-bot-sdk**

**pip install flask**

**pip install sklearn**

**pip install dataframe**

**pip install Pillow**

**conda install numpy**

**conda install matplotlib**

**conda install pandas**

**conda install ipython notebook**

**conda install Keras**

**Proceed ([y]/n)? y**

 Home Environments Learning Community

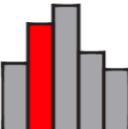
Documentation

Developer Blog

Applications on

tensorflow

Channels



Glueviz  
0.13.3

Multidimensional data visualization across files. Explore relationships within and among related datasets.

[Install](#)



JupyterLab  
0.35.5

An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.

[Install](#)



Jupyter Notebook  
5.7.8

Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.

[1](#) [Install](#) [Launch](#) [2](#) [Install](#)



Orange 3  
3.19.0

Component based data mining framework. Data visualization and data analysis for novice and expert. Interactive workflows with a large toolbox.

[Install](#)



Qt Console  
4.3.1

PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more.

[Install](#)



RStudio  
1.1.456

A set of integrated tools designed to help you be more productive with R. Includes R essentials and notebooks.

[Install](#)



Spyder  
3.3.4

Scientific PYthon Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features

[Install](#)



VS Code  
1.35.1

Streamlined code editor with support for development operations like debugging, task running and version control.

[Install](#)

記著這個根目錄，之後相關檔案放在方便讀取的地方

The screenshot shows the Jupyter Notebook interface with the following details:

- Header:** "jupyter" logo, "Quit", and "Logout" buttons.
- Navigation:** "Files" (selected), "Running", and "Clusters" tabs.
- Toolbar:** "Select items to perform actions on them.", "Upload", "New", and a refresh icon.
- File Browser:** A table listing directory contents:

	Name	Last Modified	File size
<input type="checkbox"/>	anaconda3	an hour ago	
<input type="checkbox"/>	Applications	2 months ago	
<input type="checkbox"/>	bin	a month ago	
<input type="checkbox"/>	Creative Cloud Files	3 months ago	
<input type="checkbox"/>	Desktop	4 minutes ago	
<input type="checkbox"/>	Documents	7 days ago	
<input type="checkbox"/>	Downloads	15 hours ago	

# Google Drive

## <https://reurl.cc/MxGym>



My Drive > AI > line\_heorku\_lesson ▾

Name	Owner	Last modified	File size
 data	me	5:38 PM me	—
 line_heorku	me	5:22 PM me	—

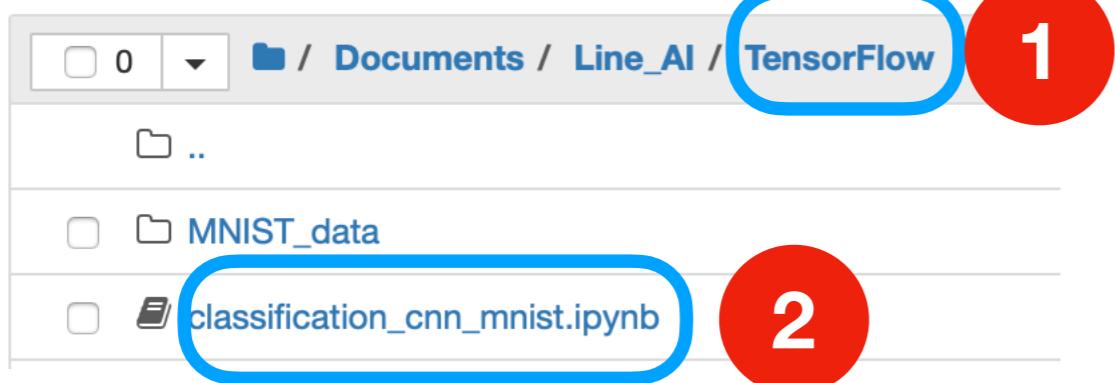
1

全部下載，放到Jupyter Notebook方便讀取的目錄下



Files    Running    Clusters

Select items to perform actions on them.



jupyter classification\_cnn\_mnist Last Checkpoint: 02/11/2019 (autosaved)



Logout



### 3 跑完都出現結果，就算安裝成功

載入工具

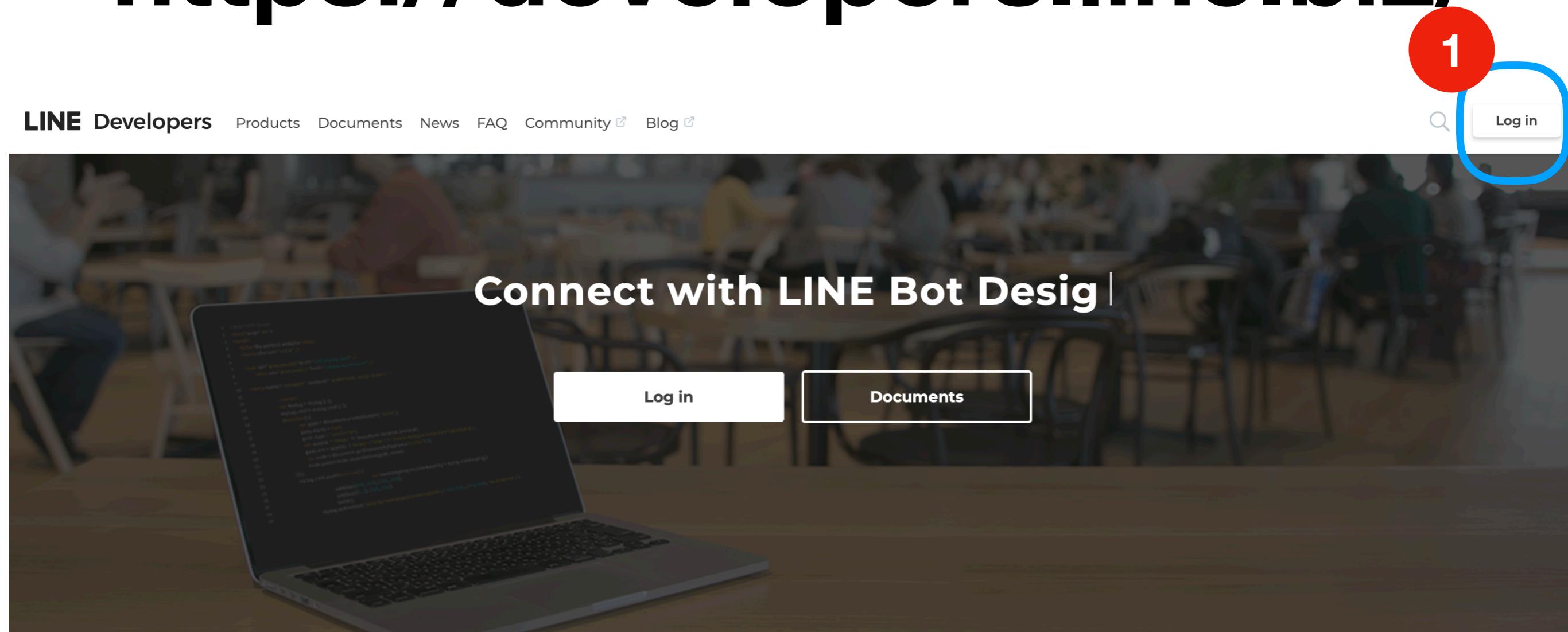
```
In [1]: import os
import pandas as pd
from pandas import DataFrame
from keras.models import Sequential, Model
from keras.layers import Dense, Activation, Convolution2D, MaxPooling2D, Flatten
from keras.optimizers import Adam
from keras.layers import Dropout
from keras.layers import BatchNormalization
from keras.utils import np_utils
import matplotlib.pyplot as plt
#matplotlib.use("TkAgg")
%matplotlib inline
import numpy as np
np.random.seed(1)
from sklearn.metrics import confusion_matrix
from PIL import Image
import random
import math
```

Using TensorFlow backend.



**創建Line開發者帳號**

# <https://developers.line.biz/>



# LINE Business ID

使用LINE帳號登入

1

或

使用商用帳號登入

建立帳號

使用LINE商用ID須遵從服務條款等規定，登入後即視為您同意相關  
條款內容。

② 關於LINE商用ID

繁體中文 ▾

[Help](#) [服務條款](#) © LINE Corporation

# LINE



Continue as

**Ian Fan**

**Log in**

**1**

[Log in to another account](#)



Welcome  
Ian Fan 

**Providers** 

**Provider List**   
AI Taipei

七輪易數

范財銘

**Tools**

**Support**

## Provider List (3)

 Create New Provider

Provider	Role
AI Taipei	Admin
七輪易數	Admin
范財銘	Admin

 Create New Provider



## Create new provider



Enter name of provider

The provider is the entity (individual or company) that offers the app.

### Provider name

AI Lesson|

Max: 100 characters

1

Confirm

2

## Create new provider



Enter name of provider

The provider is the entity (individual or company) that offers the app.

---

### Provider name

AI Lesson

---

Edit

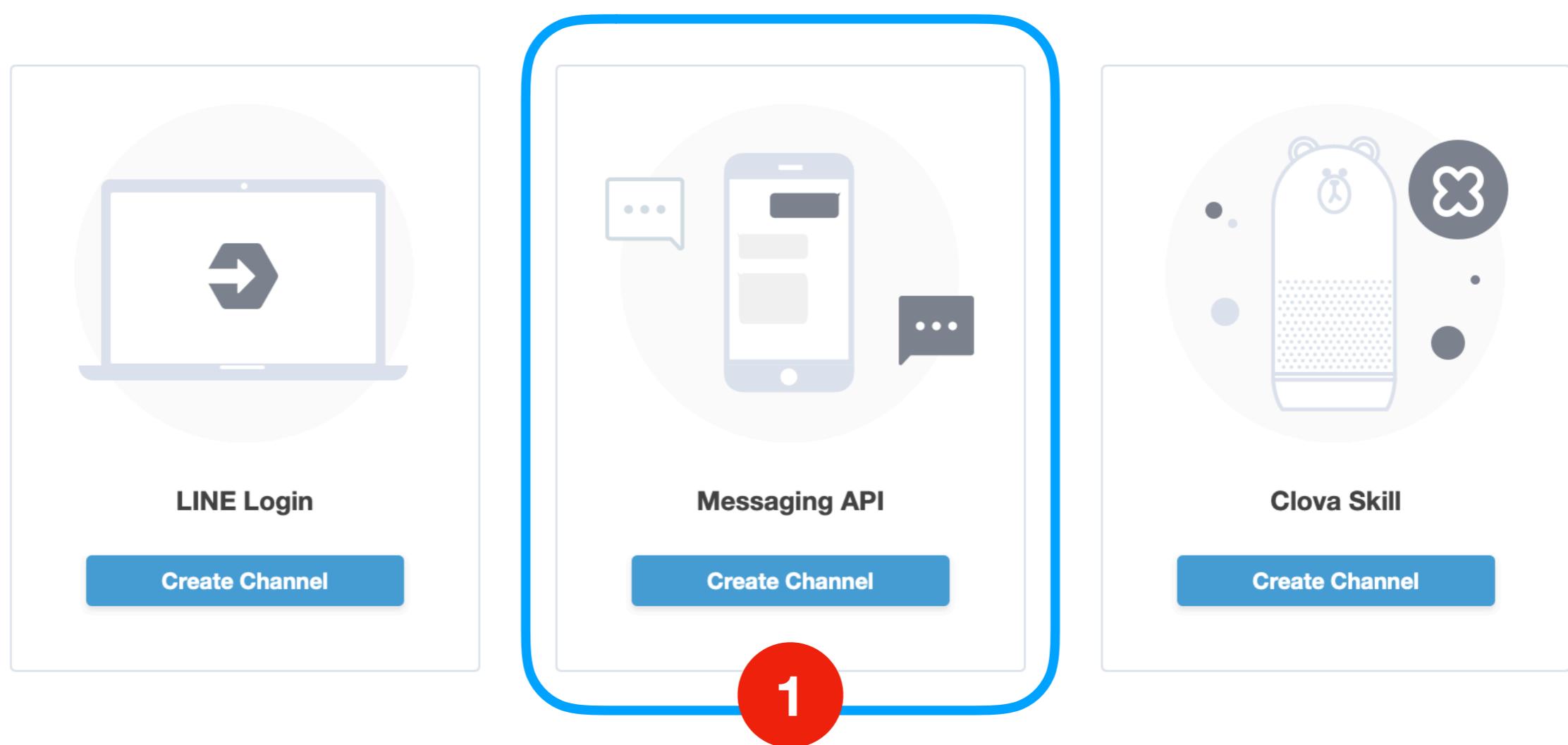
Create

1



## A provider has been created! Next, let's create a new channel

Please select a channel from the following and create a new channel.



**App name**

AI Bot

Max: 20 characters

Note: The app name cannot be changed for seven days.

1

**App description**

教學



Max: 500 characters

2

**Category**

公眾人物、專業人士

**Subcategory**

教師

3

**Email address** 

ianfan0704@gmail.com|

Max: 100 characters

4

- LINE Official Account Terms of Use  I have read and agree to the Terms of Use.
- LINE Official API Terms of Use:  I have read and agree to the Terms of Use.

1

Edit

Create

2



## AI Lesson



1

New Admin



AI Bot

Messaging API



Create new channel

Welcome Ian Fan 

Providers 

Provider List

AI Lesson

AI Taipei

七輪易數

范財銘

Tools

Support

TOP > Provider List > AI Lesson > AI Bot > Channel settings

 **AI Bot**   Admin 

Channel settings Security settings Roles Testers Statistics LIFF

Confirm and edit the basic information (such as the app name and icon) and other settings of the channel.  
Note: Only the "Quit testing" button is displayed for testers.

**Basic information**

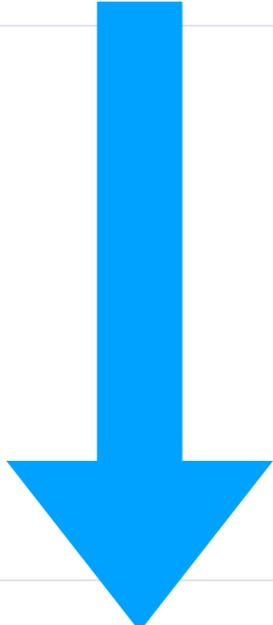
App icon and App name can be changed at LINE official account manager. [Change informations](#)

**App icon** 

**Bot Informations**

QR code of your bot  1

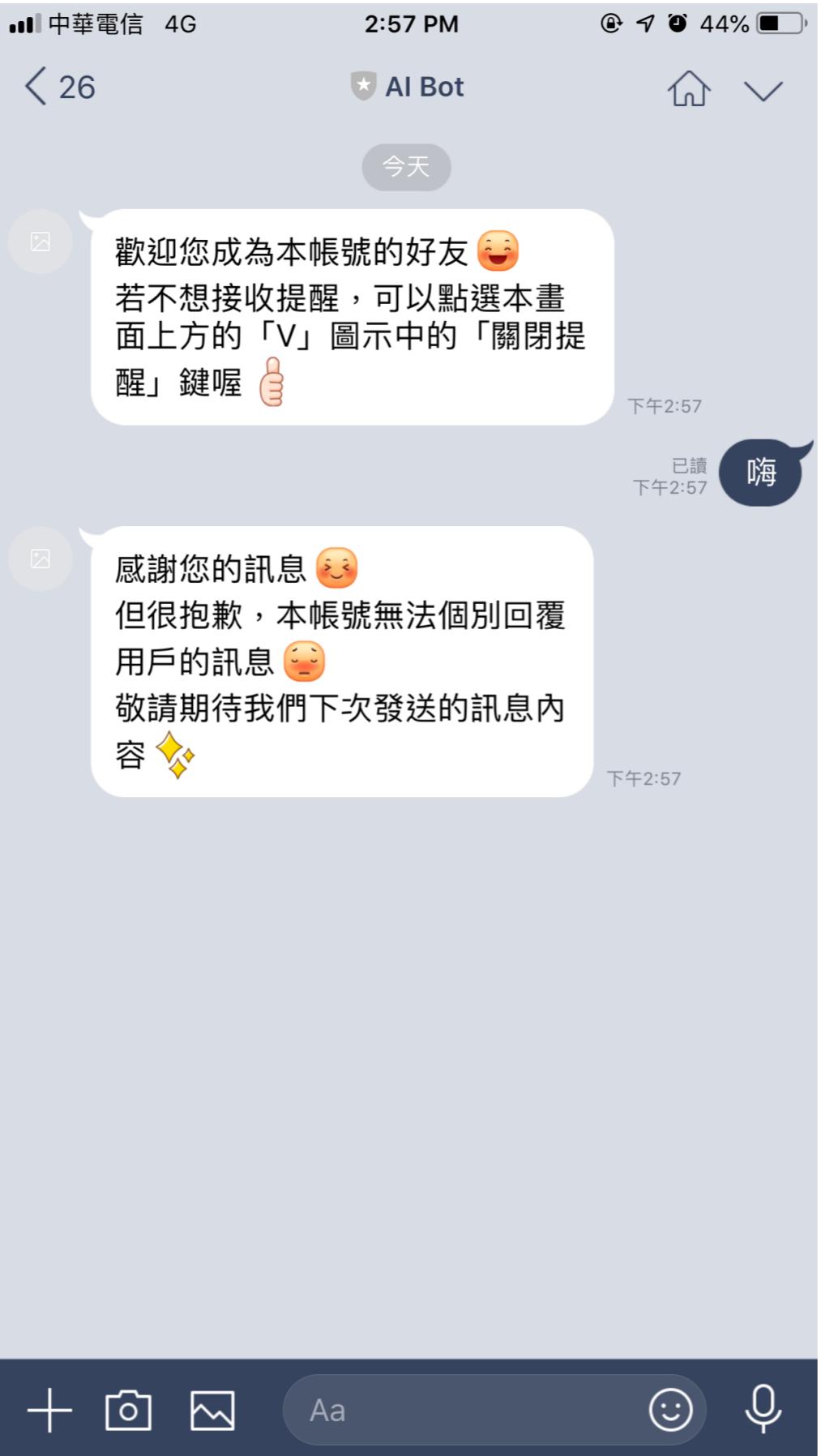
Use this QR code to add your bot as a friend for testing and to share your bot with other users.

**網頁往下滑** 

**使用手機LineApp加好友**

# 手機 Line App

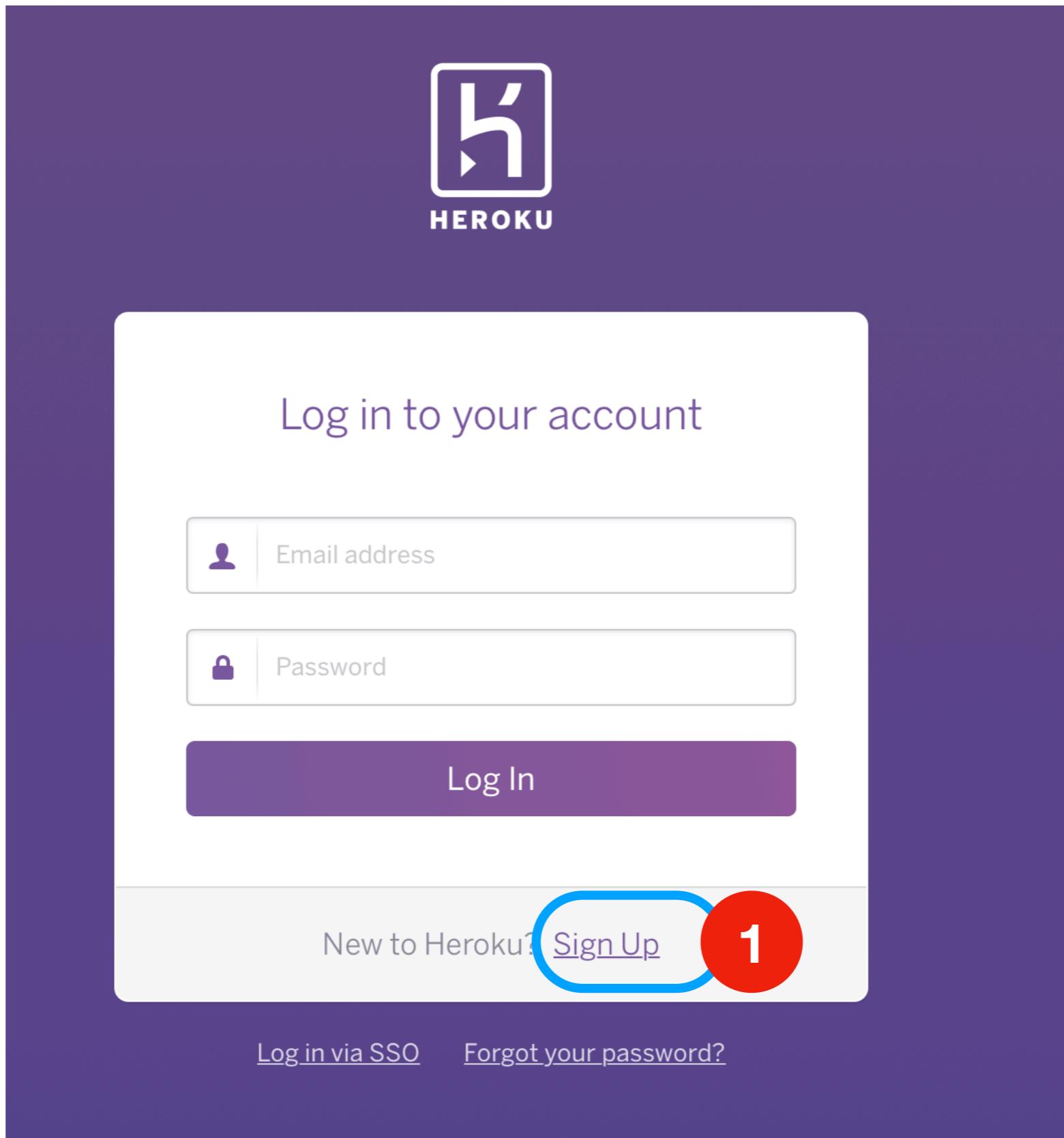






**創建Heroku伺服器帳號**

# <http://heroku.com>



The image shows the Heroku login page. At the top center is the Heroku logo, which consists of a stylized 'h' icon inside a square frame with the word 'HEROKU' in white capital letters below it. The main title 'Log in to your account' is centered above two input fields. The first field is labeled 'Email address' and has a small user icon to its left. The second field is labeled 'Password' and has a small lock icon to its left. Below these fields is a large purple 'Log In' button. At the bottom of the form, there is a light gray footer bar containing the text 'New to Heroku?'. To the right of this text is a blue-outlined red circular button with the number '1' in white, and next to it is a blue-outlined red circular button with the text 'Sign Up' in white. At the very bottom of the page, there are two links: 'Log in via SSO' and 'Forgot your password?'.

Log in to your account

Email address

Password

Log In

New to Heroku? [Sign Up](#) 1

[Log in via SSO](#) [Forgot your password?](#)

## ② Free account

Create apps, connect databases and add-on services, and collaborate on your apps, for free.

## ③ Your app platform

A platform for apps, with app management & instant scaling, for development and production.

## ④ Deploy now

Go from code to running app in minutes. Deploy, scale, and deliver your app to the world.

# 選Python

First name \*

Ian

Last name \*

Fan

Email address \*

ianfan0704@gmail.com

Company name

Company name

Role \*

Professional Developer

Country \*

Taiwan

Primary development language \*

Python



I'm not a robot



reCAPTCHA  
Privacy - Terms

1

2

3

CREATE FREE ACCOUNT

Almost there ...

Please check your email (arcane0704@gmail.com) to confirm your account.

If [arcane0704@gmail.com](mailto:arcane0704@gmail.com) is not your email address, please [go back](#) and enter the correct one.

If you haven't received our email in 15 minutes, please check your spam folder.

Still can't find it? Try searching Gmail for "in:all subject:(Confirm your account on Heroku)"

# Email收信

## 點link啟動帳號



Thanks for signing up with Heroku! You must follow this link to activate your account:

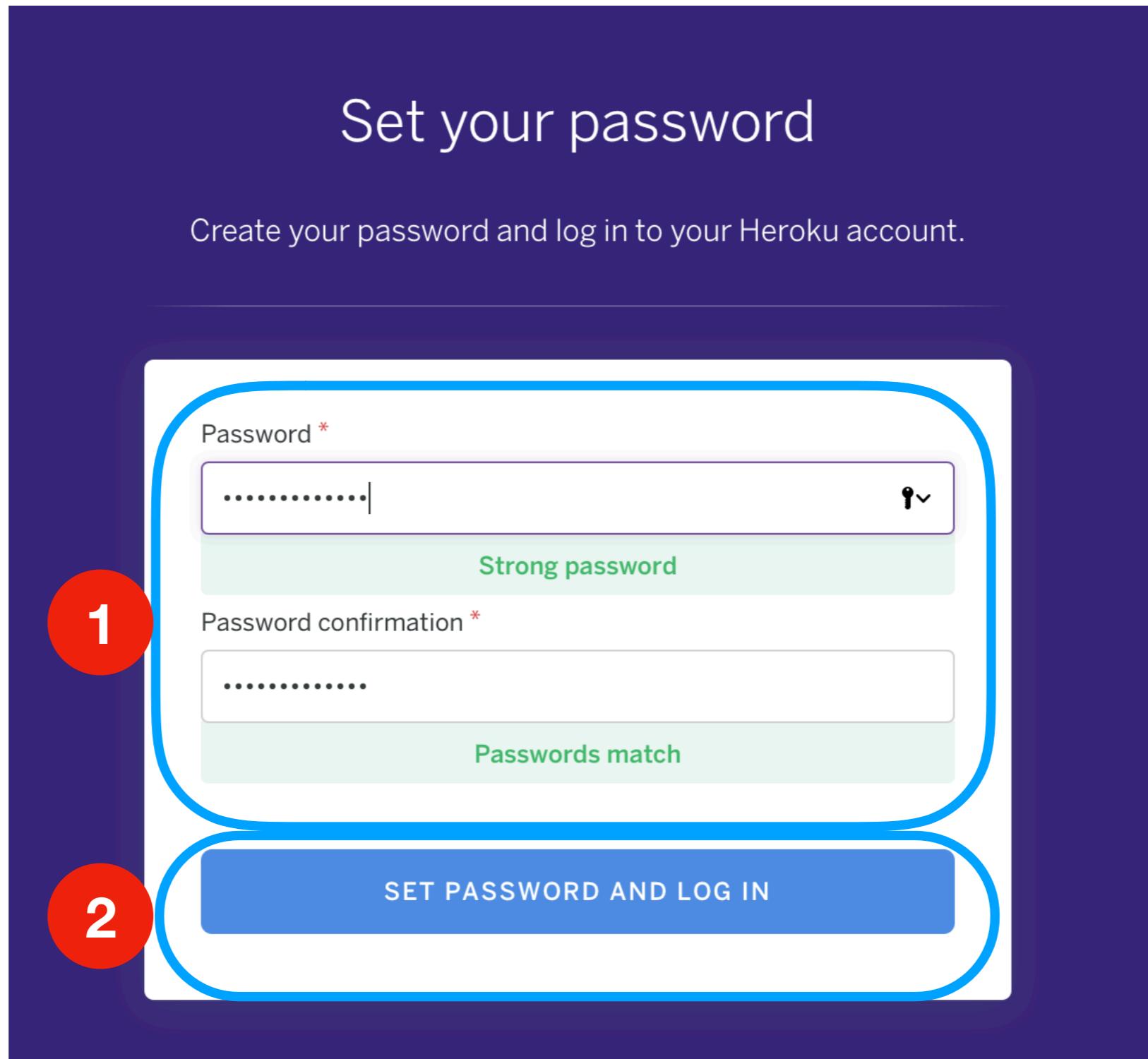
1

<https://id.heroku.com/account/accept/6628089/34c4500bc4ecd339741c452b21fd938d>

Have fun, and don't hesitate to contact us with your feedback.

The Heroku Team  
<https://heroku.com>

# 密碼長度8個以上 需要有大寫、小寫字母與符號



# Welcome to Heroku

A new account for  
**arcane0704@gmail.com**  
is all set up.

1

[CLICK HERE TO PROCEED](#)



Personal

New



## Welcome to Heroku

Now that your account has been set up, here's how to get started.

[Dismiss](#)

1

### Create a new app

Create your first app and deploy your code to a running dyno.

[Create new app](#)



### Create a team

Create teams to collaborate on your apps and pipelines.

[Create a team](#)

# 建議取名小寫“line-數字”

## 比較不容易跟別人重複

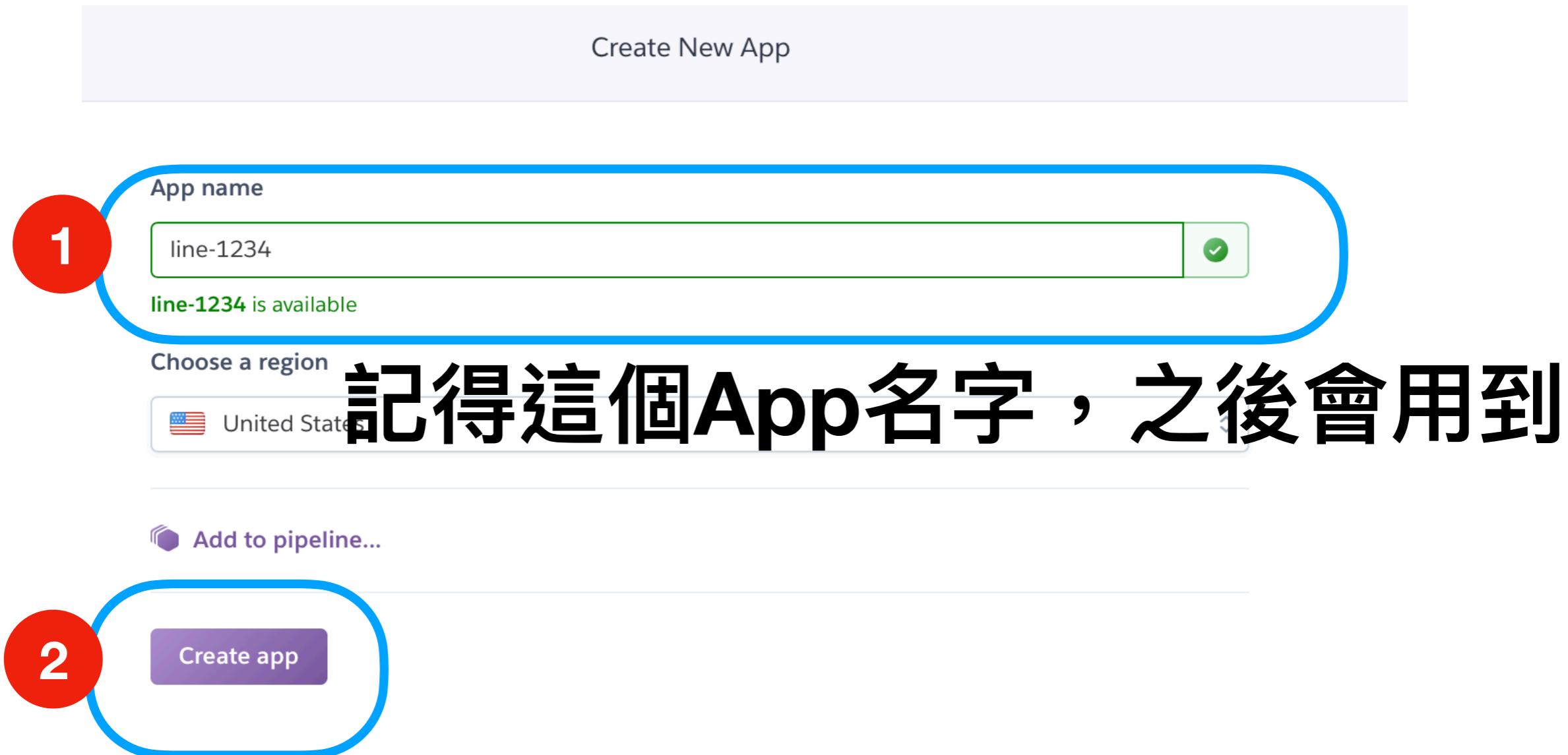
Create New App

App name  
1 line-1234   
line-1234 is available

Choose a region  
United States

Add to pipeline...  
2 Create app

記得這個App名字，之後會用到





Heroku Git  
Use Heroku CLI



GitHub  
Connect to GitHub



Container Registry  
Use Heroku CLI

## Install the Heroku CLI

Download and install the [Heroku CLI](#).

1

If you haven't already, log in to your Heroku account and follow the prompts to create a new SSH public key.

```
$ heroku login
```

## Create a new Git repository

Initialize a git repository in a new or existing directory

```
$ cd my-project/  
$ git init  
$ heroku git:remote -a line-1234
```

## Deploy your application

Commit your code to the repository and deploy it to Heroku using Git.

```
$ git add .  
$ git commit -am "make it better"  
$ git push heroku master
```

## Existing Git repository

For existing repositories, simply add the `heroku` remote

```
$ heroku git:remote -a line-1234
```

# Download and install



The Heroku CLI requires **Git**, the popular version control system. If you don't already have Git installed, complete the following before installing the CLI:

- [Git installation](#)
- [First-time Git setup](#)



[Download the installer](#)

1

Also available via Homebrew:

```
$ brew tap heroku/brew && brew install heroku
```



Download the appropriate installer for your Windows installation:

[64-bit installer](#)

[32-bit installer](#)



Run the following from your terminal:

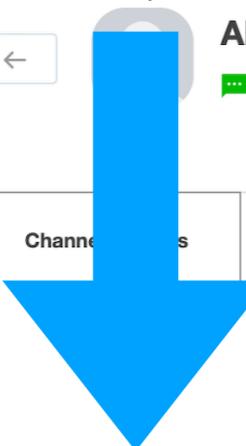
```
$ sudo snap install --classic heroku
```

[Snap is available on other Linux OS's as well.](#)



Welcome  
Ivan Pan

# Line網頁往下滑



Providers

Provider List

AI Lesson

AI Taipei

## Messaging settings

### Channel access token (long-lived) [?](#)

9Di/BslcYt0f6Qg0M5D+t9Noe+IHmM5v/H+H9PgIP49aty8I1DzH71iAJ3I6QVwA95L5cdW/LXJFD/rT7VKywUpbrC5jKL6mZztUM9ieKtFS5O6hiCldBpThU8cOfPURqGC3mgzOhzFvz4ds5/He/AdB04t89/1O/w1cDnyilFU=

記得Channel access token以及上方的Channel secret，之後會用到

### Use webhooks [?](#)

Enabled

7

Disabled

### Webhook URL [?](#) Requires SSL

https://

line-1234.herokuapp.com/callback

Max: 500 characters

Please enter the URL of your APP

### Allow bot to join group chats [?](#)

Disabled



Personal > line-1234

Time until token becomes invalid 0 hours

2 Issue

1 Issue

8

Update

Cancel

6

Edit

9

5

Update

Cancel

3

Edit

Set message

line-1234改成你在Heroku的app名字

Personal > line-1234

## Using LINE@ features

Message text for LINE@ features are set on the LINE@ Manager.

### Auto-reply messages ?

Enabled

[Set message](#) 

## Response settings

Response mode ?

Bot

Chat

Greeting message

Enabled

Disabled

[Greeting message settings](#)

Auto-response

Enabled

Disabled

[Auto-response message settings](#)

Webhooks

Enabled

Disabled

[Messaging API settings](#)

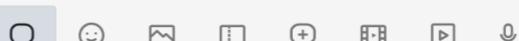
2

1

### Greeting message

This message will be sent automatically to users when they add you as a friend. If you don't want to see "Response settings."

[Discard changes](#)



我會辨識數字圖片

Emoji

User's display name

+ Add

3

4

[Save changes](#)

# Line官方Sample Code

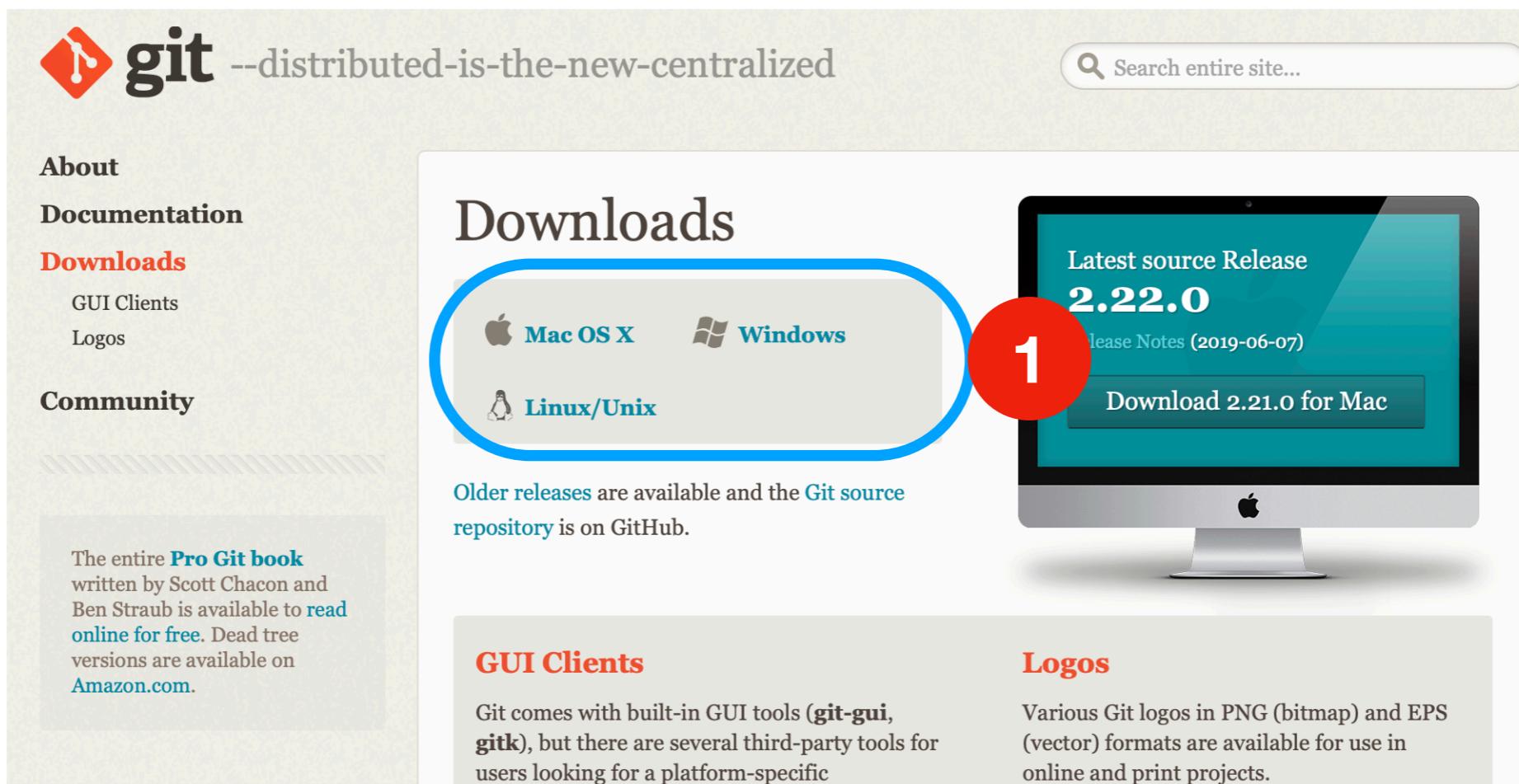
## <https://github.com/line/line-bot-sdk-python>

The screenshot shows the GitHub repository page for the Line Messaging API SDK for Python. The repository name is `line / line-bot-sdk-python`. Key statistics displayed include 152 commits, 8 branches, 14 releases, 23 contributors, and an Apache-2.0 license. The master branch is selected. A green button for cloning or downloading is visible. The commit history lists recent changes such as fixing README, updating docs, and implementing flex message features.

Commit	Message	Time Ago
<a href="#">.github</a>	Update docs (#82)	last year
<a href="#">docs</a>	LINE Things scenario execution event (#176)	4 hours ago
<a href="#">examples</a>	Text property of Postback action is deprecated; and fix example (#175)	5 days ago
<a href="#">linebot</a>	LINE Things scenario execution event (#176)	4 hours ago
<a href="#">tests</a>	LINE Things scenario execution event (#176)	4 hours ago
<a href="#">.gitignore</a>	Implement flex message feature (#107)	last year
<a href="#">.travis.yml</a>	Add python3.7 (#115)	27 days ago
<a href="#">CODE_OF_CONDUCT.md</a>	Add code of conduct (#94)	last year
<a href="#">CONTRIBUTING.md</a>	Update CONTRIBUTING.md (#126)	8 months ago
<a href="#">LICENSE</a>	Add license for LINE Corporation	3 years ago
<a href="#">MANIFEST.in</a>	Remove README.md. We use README.rst.	3 years ago

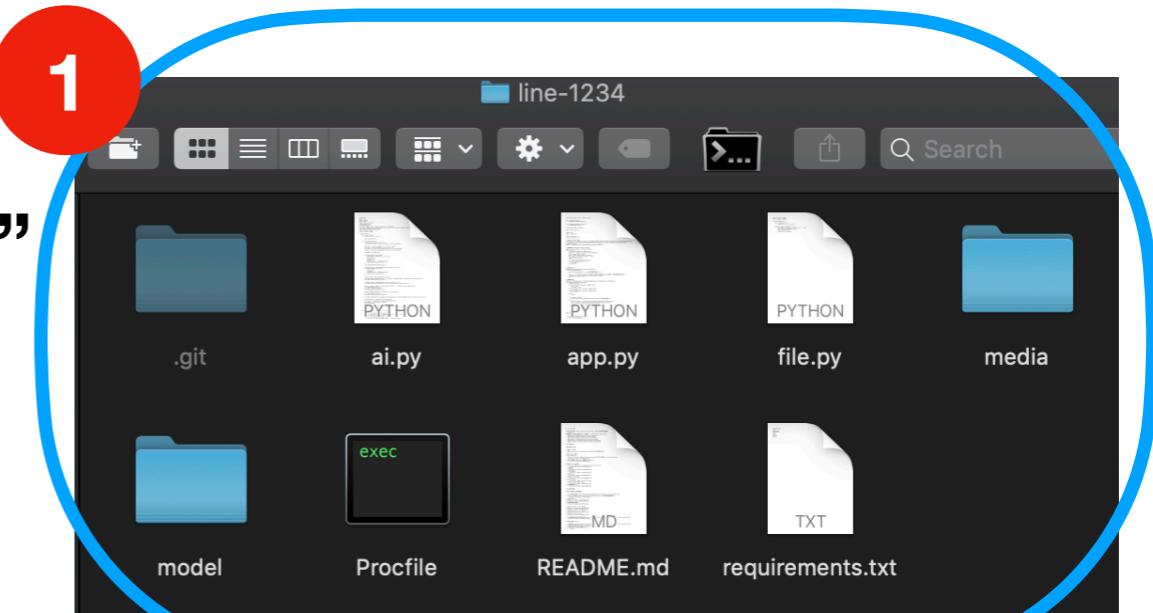
# 安裝 Git

<https://git-scm.com/downloads>



```
git config --global user.name YOUR_NAME
git config --global user.email YOUR_EMAIL
```

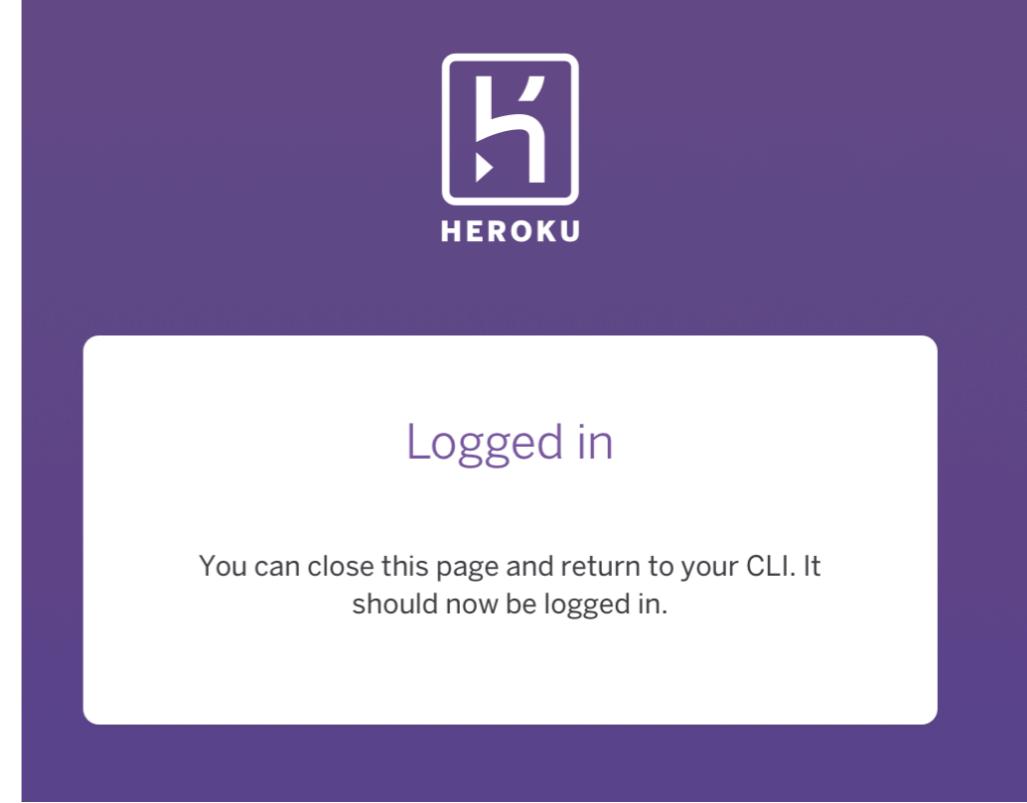
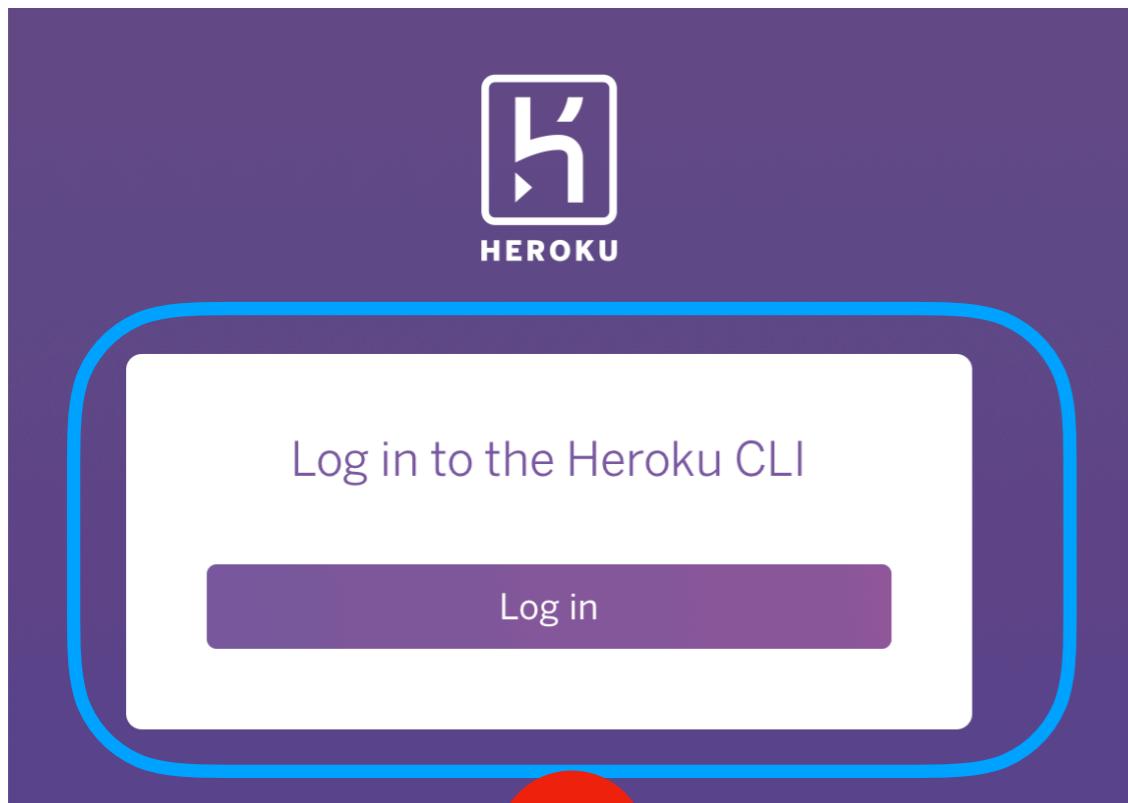
將Google Drive下載“line-heroku”  
檔案夾移到Jupyter好找的位置



使用CMD/Terminal終端機到此目錄

```
Last login: Tue Jun 18 17:39:15 on ttys000
ianfan@Tan-Fan-MacBook-Pro-2018 ~/Documents/Heroku/line-1234 master heroku login
heroku: Press any key to open up the browser to login or q to exit:
Opening browser to https://cli-auth.heroku.com/auth/browser/b4248b25-e18b-4be8-8c98-61d3ab...
Logging in... done
Logged in as ianfan0704@gmail.com
```

A terminal window showing a user's session. Step 2 is highlighted with a red circle around the command 'heroku login'. Step 3 is highlighted with a red circle around the instruction 'Press any key to open up the browser to login or q to exit:'.



# 用Anaconda的Jupyter打開app.py

The screenshot shows the Jupyter Notebook interface running in a web browser. At the top, there's a header with the Jupyter logo, user name, and navigation links for 'Files', 'Running', 'Clusters', and 'Nbextensions'. On the right side of the header are 'Quit' and 'Logout' buttons. Below the header, a toolbar includes 'Upload', 'New', and a refresh icon. The main area displays a file list in a table format. The table has columns for selection (checkbox), count (0), folder/file icon, name, last modified, and file size. The file list includes a parent folder 'Heroku / line-1234', a file '..' (last modified 'seconds ago'), and several files: 'media' (16 days ago), 'model' (16 days ago), 'ai.py' (2 hours ago, 3.49 kB), 'app.py' (an hour ago, 2.56 kB), 'file.py' (2 hours ago, 316 B), 'Procfile' (7 months ago, 18 B), 'README.md' (7 months ago, 12.5 kB), and 'requirements.txt' (2 hours ago, 68 B).

	0	Name	Last Modified	File size
<input type="checkbox"/>	0	Heroku / line-1234		
<input type="checkbox"/>		..	seconds ago	
<input type="checkbox"/>		media	16 days ago	
<input type="checkbox"/>		model	16 days ago	
<input type="checkbox"/>		ai.py	2 hours ago	3.49 kB
<input type="checkbox"/>		app.py	an hour ago	2.56 kB
<input type="checkbox"/>		file.py	2 hours ago	316 B
<input type="checkbox"/>		Procfile	7 months ago	18 B
<input type="checkbox"/>		README.md	7 months ago	12.5 kB
<input type="checkbox"/>		requirements.txt	2 hours ago	68 B

# 用Channel access token跟Channel secret 替換LineBotApi()與WebhookHandler裡的參數

## Messaging settings

### Channel access token (long-lived) ?

9Di/BslcYt0f6Qg0M5D+t9Noe+lHmM5v/H+H9PgIP49aty8I1DzH71iAJ3I6QVwA95L5cdW/LXJFD/rT7VKywUpbrC5jKL6mZztUM9ieKtFS5O6hiCldBpThU  
8cOfPUrqGC3mgzOhzFvz4ds5/He/AdB04t89/1O/w1cDnyilFU=

**Issue**

### Channel secret ?

9144184a0089f3ea45a456c7586401e3

**Issue**

The screenshot shows a code editor window with the file 'app.py' open. The code imports various modules and sets up a Flask application. Two specific lines of code are highlighted with red circles and numbered 1 and 2.

```
1  from flask import Flask, request, abort
2
3  from linebot import (
4      LineBotApi, WebhookHandler
5  )
6  from linebot.exceptions import (
7      InvalidSignatureError
8  )
9  from linebot.models import *
10
11 app = Flask(__name__)
12
13 import os
14 import tempfile
15
16 from ai import AI
17 from file import File
18
19 # Channel Access Token
20 line_bot_api = LineBotApi('9Di/BslcYt0f6Qg0M5D+t9Noe+lHmM5v/H+H9PgIP49aty8I1DzH71iAJ3I6QVwA95L5cdW/LXJFD/rT7VKywUpbrC5jKL6mZztUM9ieKtFS5O6hiCldBpThU')
21
22 # Channel Secret
23 handler = WebhookHandler('9144184a0089f3ea45a456c7586401e3')
```

Annotation 1 points to the line `line_bot_api = LineBotApi('9Di/BslcYt0f6Qg0M5D+t9Noe+lHmM5v/H+H9PgIP49aty8I1DzH71iAJ3I6QVwA95L5cdW/LXJFD/rT7VKywUpbrC5jKL6mZztUM9ieKtFS5O6hiCldBpThU')`. Annotation 2 points to the line `handler = WebhookHandler('9144184a0089f3ea45a456c7586401e3')`.

```
ianfan@Ian-Fan-MacBook-Pro-2018 [?]~/Documents/Heroku/line_1234 [?]heroku login  
heroku: Press any key to open up the browser to login or q to exit:  
Opening browser to https://cli-auth.herokuapp.com/auth/browser/e240709e-77ed-4347-8de6-0a328e6fa83b  
Logging in... done
```

```
Logged in as arcane0704@gmail.com
```

```
ianfan@Ian-Fan-MacBook-Pro-2018 [?]~/Documents/Heroku/line_1234 [?]master + [?]git init 1  
Reinitialized existing Git repository in /Users/ianfan/Documents/Heroku/line_1234/.git/  
ianfan@Ian-Fan-MacBook-Pro-2018 [?]~/Documents/Heroku/line_1234 [?]master + [?]heroku git:remote -a line-1234 2  
set git remote heroku to https://git.heroku.com/line-1234.git  
ianfan@Ian-Fan-MacBook-Pro-2018 [?]~/Documents/Heroku/line_1234 [?]master + [?]git add . 3  
ianfan@Ian-Fan-MacBook-Pro-2018 [?]~/Documents/Heroku/line_1234 [?]master + [?]git commit -m "Line" 4  
[master (root-commit) c51887f] Line  
13 files changed, 595 insertions(+)  
create mode 100755 Procfile  
create mode 100755 README.md  
create mode 100755 ai.py  
create mode 100755 app.py  
create mode 100755 file.py  
create mode 100644 media/test.m4a  
create mode 100644 media/test.mp4  
create mode 100644 media/test.png  
create mode 100644 media/test.wav  
create mode 100644 model/decoder.h5  
create mode 100644 model/encoder.h5  
create mode 100644 model/number_model.h5  
create mode 100755 requirements.txt  
ianfan@Ian-Fan-MacBook-Pro-2018 [?]~/Documents/Heroku/line_1234 [?]master [?]git push heroku master 5  
Enumerating objects: 17, done.  
Counting objects: 100% (17/17), done.
```

# 歷史性的一刻！

