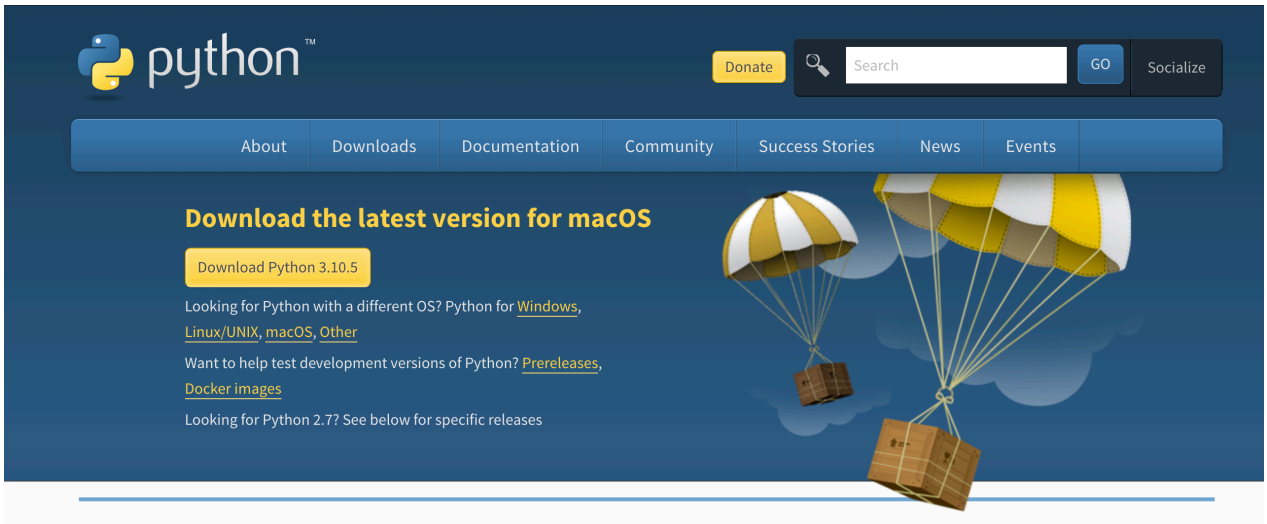
Dependencies

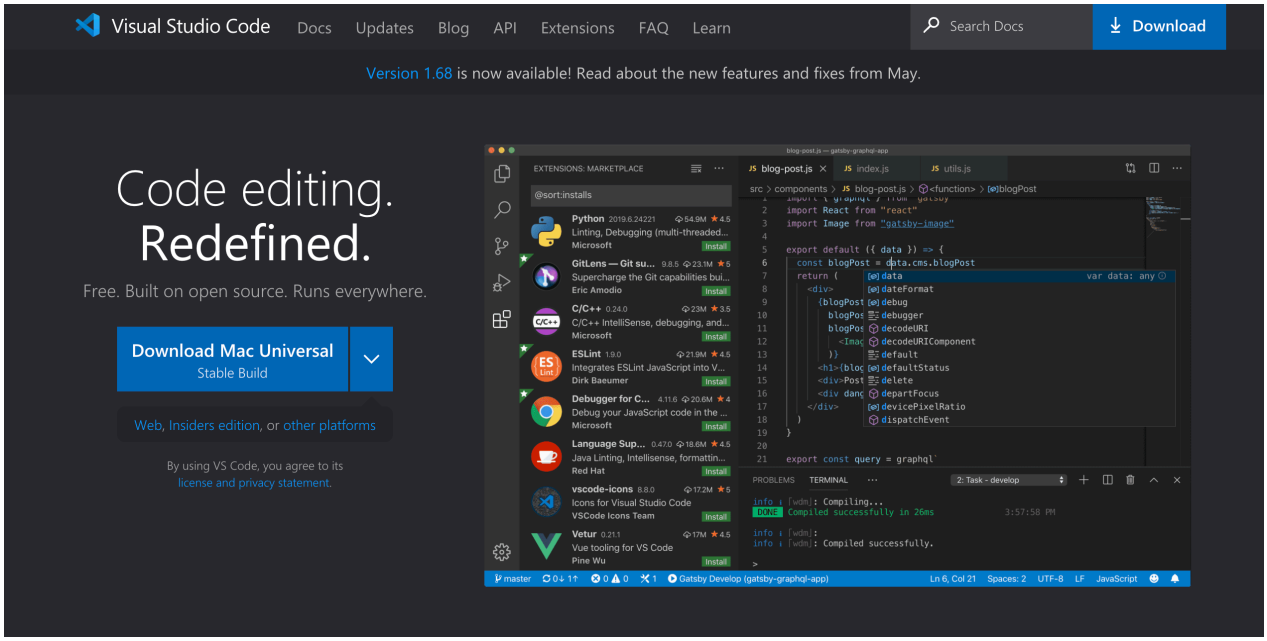
Useful references:

- 42 OF THE MOST USEFUL RASPBERRY PI COMMANDS: https://www.circuitbasics.com/useful-raspberry-pi-commands/

Software needed:

- **Python3**:
  - download page: https://www.python.org/downloads/
  - The page will automatically identify your operating system, just click the download button; if not, checking the matching version down the page.
  - NOTE: please download the latest version you can find!
  - 

  - Windows users can refer to: https://blog.csdn.net/weixin_56744600/article/details/124707124
  - Mac users can refer to: https://zhuanlan.zhihu.com/p/363048202
  - **Check Python version**:
    1. Open terminal
    2. Linux/Windows/MacOS: enter `python3 --version` (*we assume you have the latest version*)
  - If the Python version is below Python3, we suggest you upgrade it: https://phoenixnap.com/kb/upgrade-python#:~:text=Upgrade%20Python%20with%20the%20Installer%201%20In%20your,successfully%20installed%20by%20typing%20the%20following%20in%20terminal%3A
- **IDE: Integrated Development Environment**
  - **Visual Studio Code** is most highly recommended.
  - Here we list several important steps and references for VS Code, since it supports various extensions and an easily handled terminal for ssh. However, you are still welcome to download other IDEs.
  - download page: https://code.visualstudio.com/
  - Similar to python, the download process should be rather straightforward.



  - Here is a quick guide for BOTH Windows and MacOS users: https://www.php.cn/tool/vscode/432289.html

- **ssh server**
  - It is an essential tool that helps you to remotely control the Respberry Pi without connecting the screen and keyboard.
  - For MacOS users, ssh server should already be available on your computers; you can connect the Respberry Pi through terminal by entering `ssh <user_name>@<IP_address>`
  - For Windows 10 users, check if ssh has been set by entering `ssh` in your terminal; if not, refer to https://developer.aliyun.com/article/763505 for simple download.
  - For your Respberry Pi, you can check if the ssh server runs properly by `sudo systemctl status ssh`
    - reference: https://developer.aliyun.com/article/763505
- **NOTE!!**: Use VSC to ssh, please refer to another file we uploaded in the wechat group.

Basic Linux commands:

- `ls` : To view the contents of a directory. By default, this command will display the contents of your current working directory.
- `cd` : To navigate through the Linux files and directories. It requires either the full path or the name of the directory, depending on the current working directory that you're in.
  - `cd` : to go straight to the home folder.
  - `cd ..` : to move one directory up.
  - `cd -` : to move to your previous directory.
- `mkdir` : To make a new directory. (in the current working directory if you don't specify a path)
  - `mkdir -p` : to create a directory in between two existing directories. For example, `mkdir -p Music/2020/Newfile` will create the new "2020" directory.
- `rm` : To delete directories and the contents within them.
  - `rm -r` : only delete the directory but reserve its contents. (similar to **rmdir**)

- **`sudo`** (Short for “SuperUser Do”) : Enables you to perform tasks that require administrative or root permissions.
- **`ifconfig`** : To initialize an interface, configure it with an IP address, and enable or disable it. It is also used to display the route and the network interface.
    - "**eth**" represents for Ethernet
    - "**lo**" represents for local network
    - "**wlan**" represents for wireless local area network.
- **`traceroute`** : to detect the delay and determines the pathway to your target.
- **`ping <IP_address>`** : To check your connectivity status to a server.
- **`vi`** / **`vim`** : To edit a file.
- **`man + <software name>`**: Call the user page, which contains various command options and detailed explanation (usually)
    - similar to `<software name> --help`