CPP01C: Git and GitHub

23/6/2020 Developed by Aya Khalil

School of Technology & Computing @City University of Seattle (CityU)

Learning Outcomes

- Understand the concept of version control system (VCS)
- Install Git for Windows and Mas OS

Before you start

Version control system (VCS) is created to makes it easy to store different versions of the project you are working at any time (without any fixed rules, time or rules). You can easily restore an earlier record and compare the content with the current data to find the differences. In addition, it also an effective tool to cooperate with many other people in the same project. In this module, we will learn about one of the most popular VCS which is Git and GitHub.

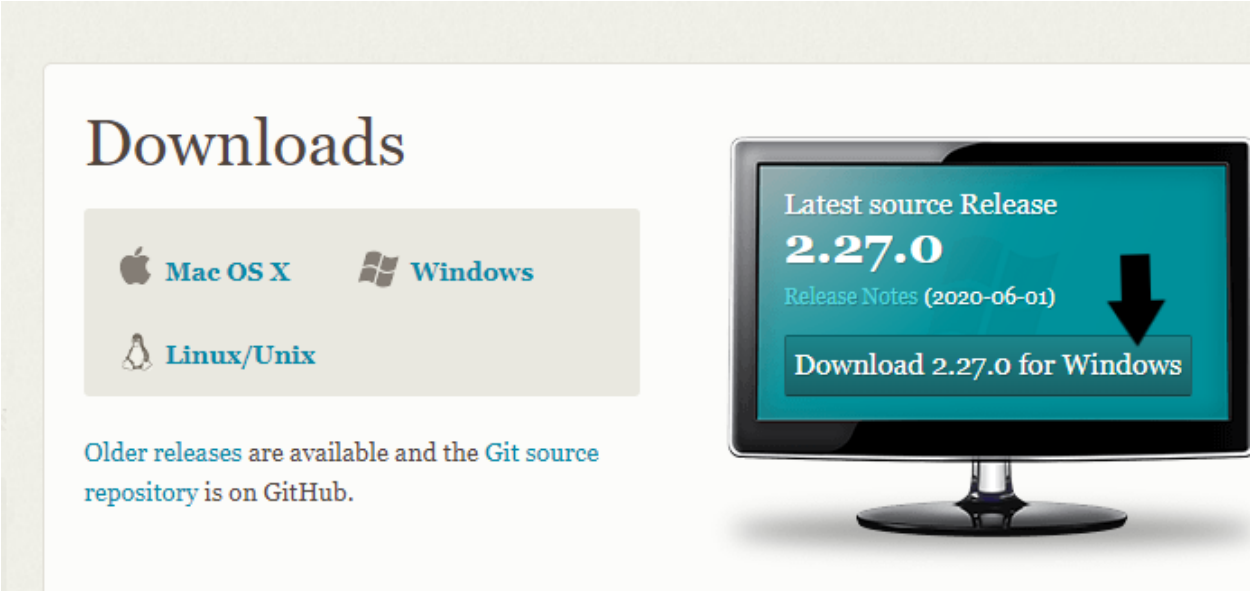
First of all, Git and GitHub are not the same thing. Git is a VCS while GitHub is a hosting server for software development version control. The way Git works is that it creates a **repository** to store each version of the project every time developers modify or add some features into the project. Developers use Git through terminal or command line.

However, Git only allows you to control your project version on your local machine. Therefore, if there are 2 or more people working on a same project, how do we connect the works of all the members? That is why we need a hosting server GitHub.

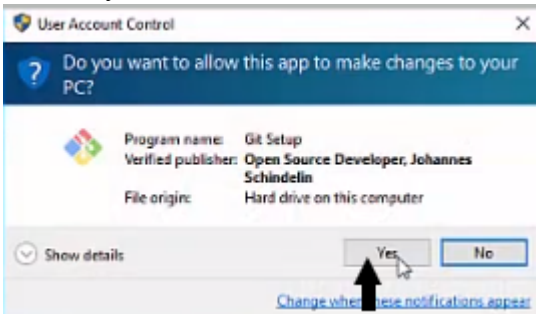
To learn more about Git and GitHub visit:
https://codeburst.io/git-and-github-in-a-nutshell-b0a3cc06458f
https://git-scm.com/book/en/v1/Getting-Started-Git-Basics
https://www.youtube.com/watch?v=SWYqp7iY_Tc

For Windows OS

1. Visit https://git-scm.com/download/win and click on Download for Windows

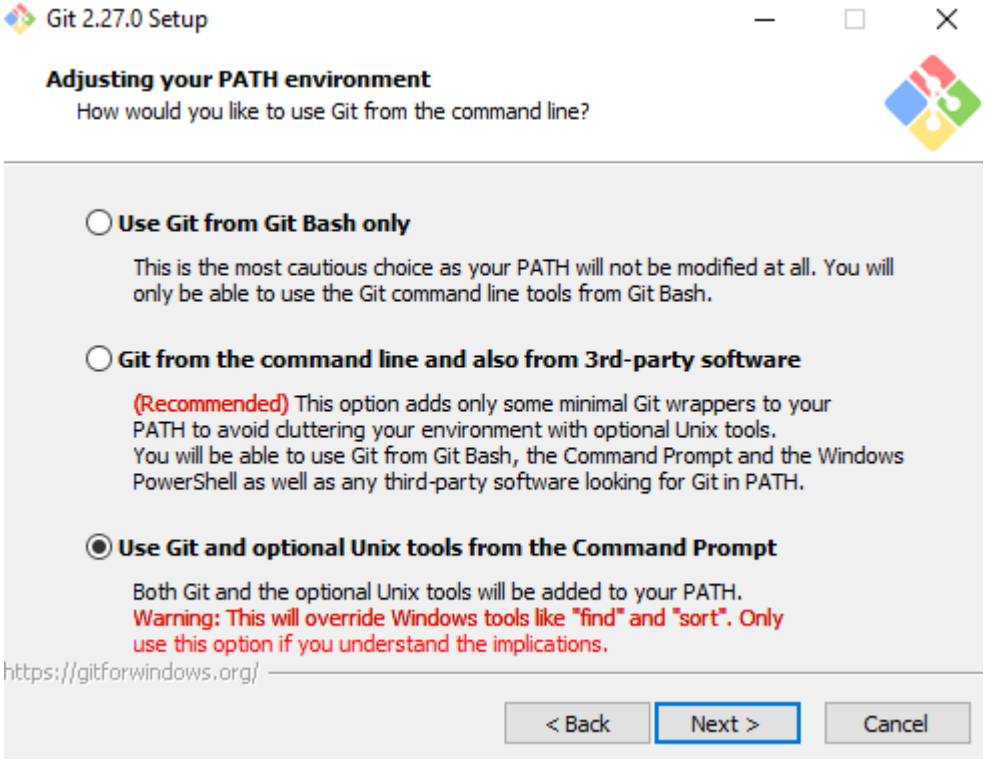


2. Open the file that was downloaded
3. Choose yes to allow Git to be installed on your PC



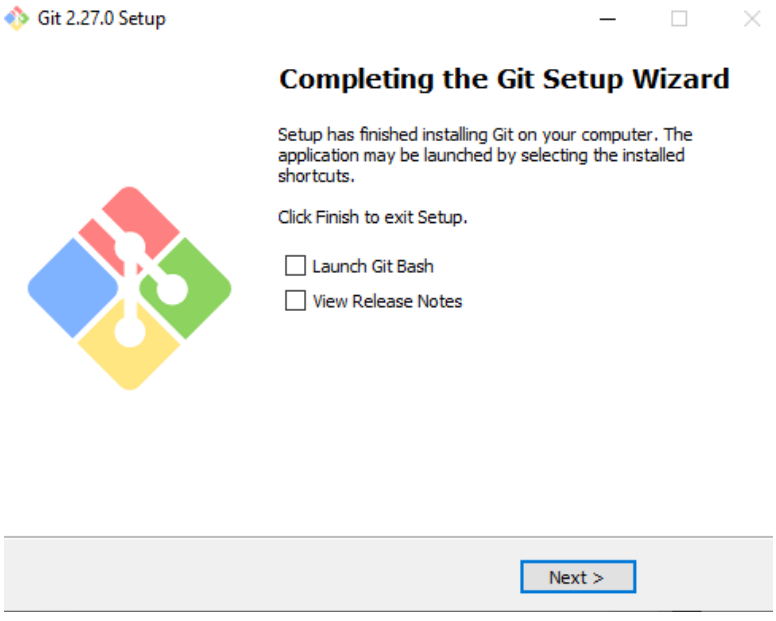
4. Go through the installation and choose the default options

5. For this one, we will choose thee last option to give us extra commands to use



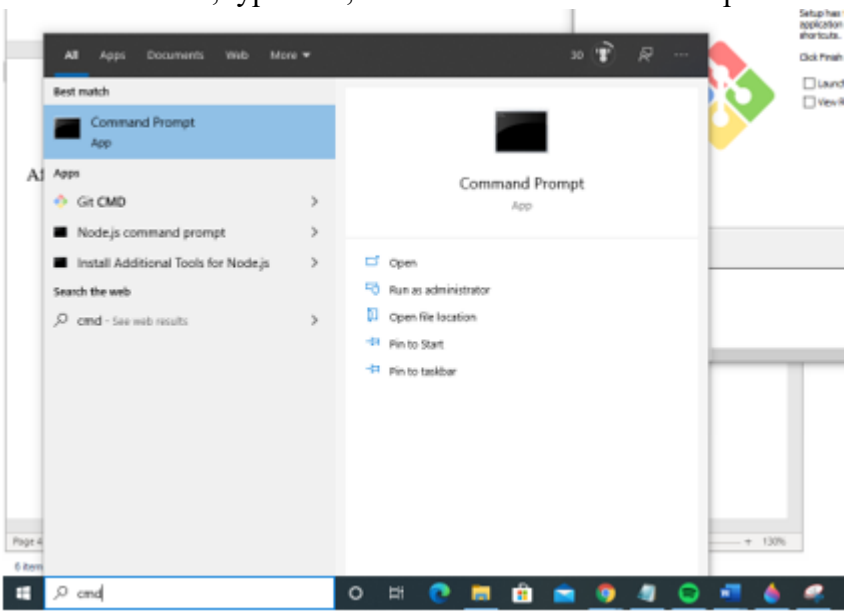
6. For the rest of the installation, choose the default options

7. Uncheck View Release Notes because we do not need it.

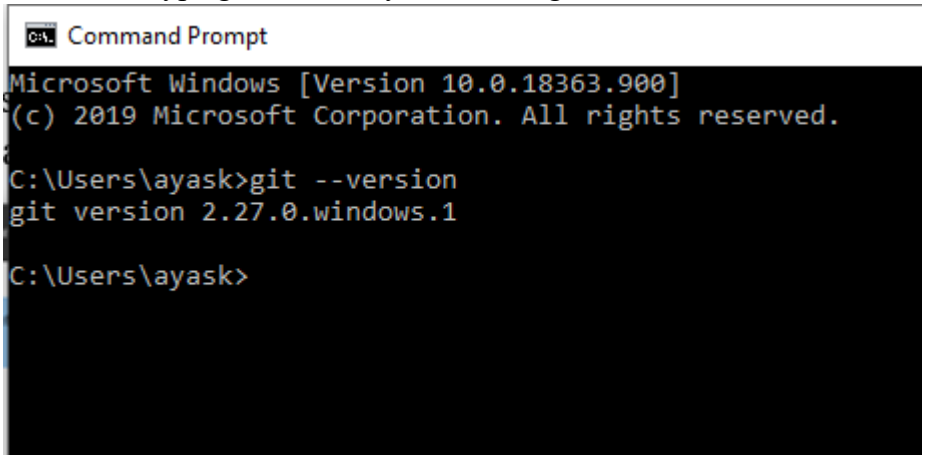


After the installation is done, open the cmd

- In the search bar, type cmd, and choose Command Prompt



In the cmd, type git –version, you will see git version 2.27.0



Note: If you got the following error

'git' is not recognized as an internal or external command

Then,
you need to add the PATH of Git into the Environment Variables

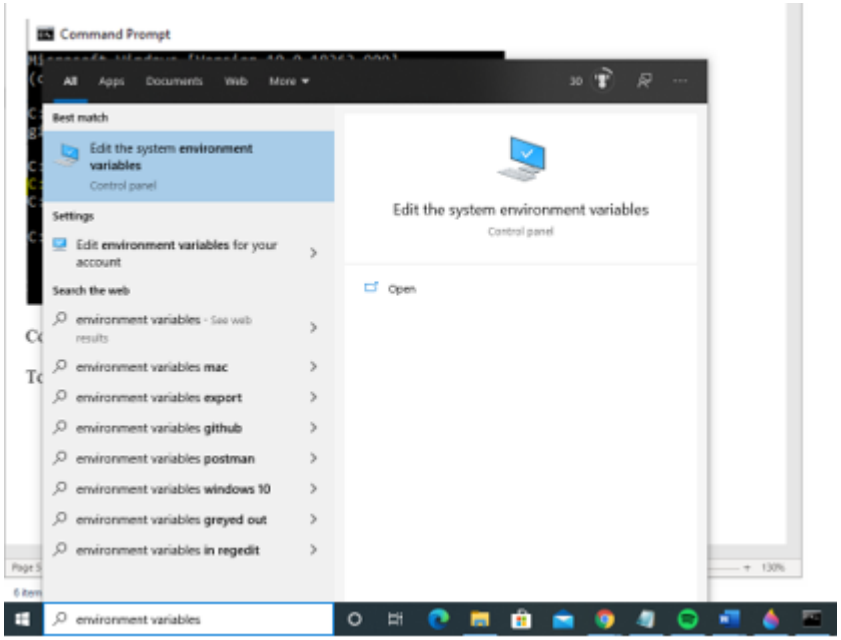
1. In the cmd, type where git

```
Command Prompt
Microsoft Windows [Version 10.0.18363.900]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\ayask>git --version
git version 2.27.0.windows.1

C:\Users\ayask>where git
C:\Program Files\Git\cmd\git.exe
C:\Program Files\Git\mingw64\bin\git.exe

C:\Users\ayask>
```

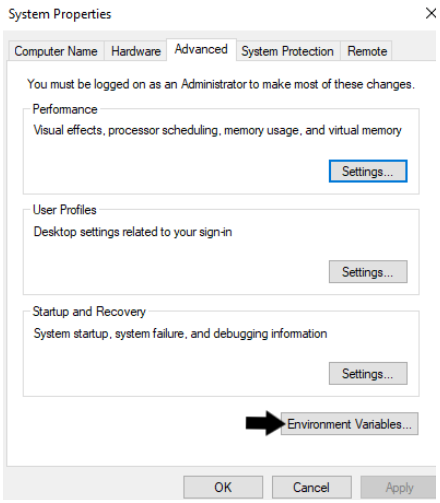
Copy the first one and add it to the environment variables

To open the environment variables

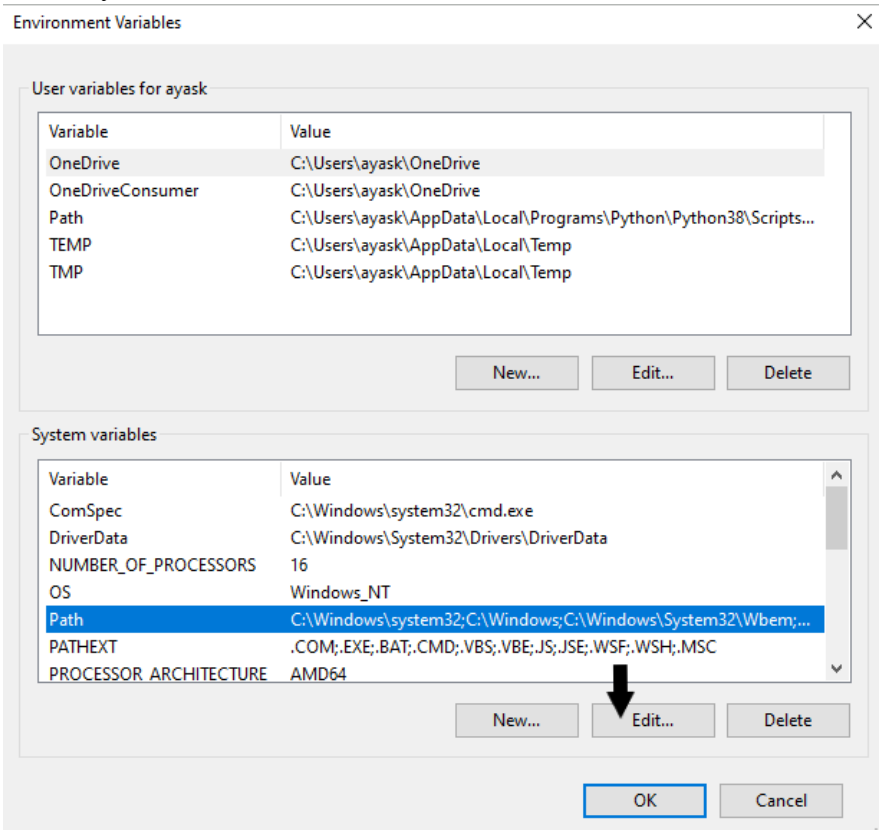
- In the search bar, type environment variables and choose Edit system environment variables



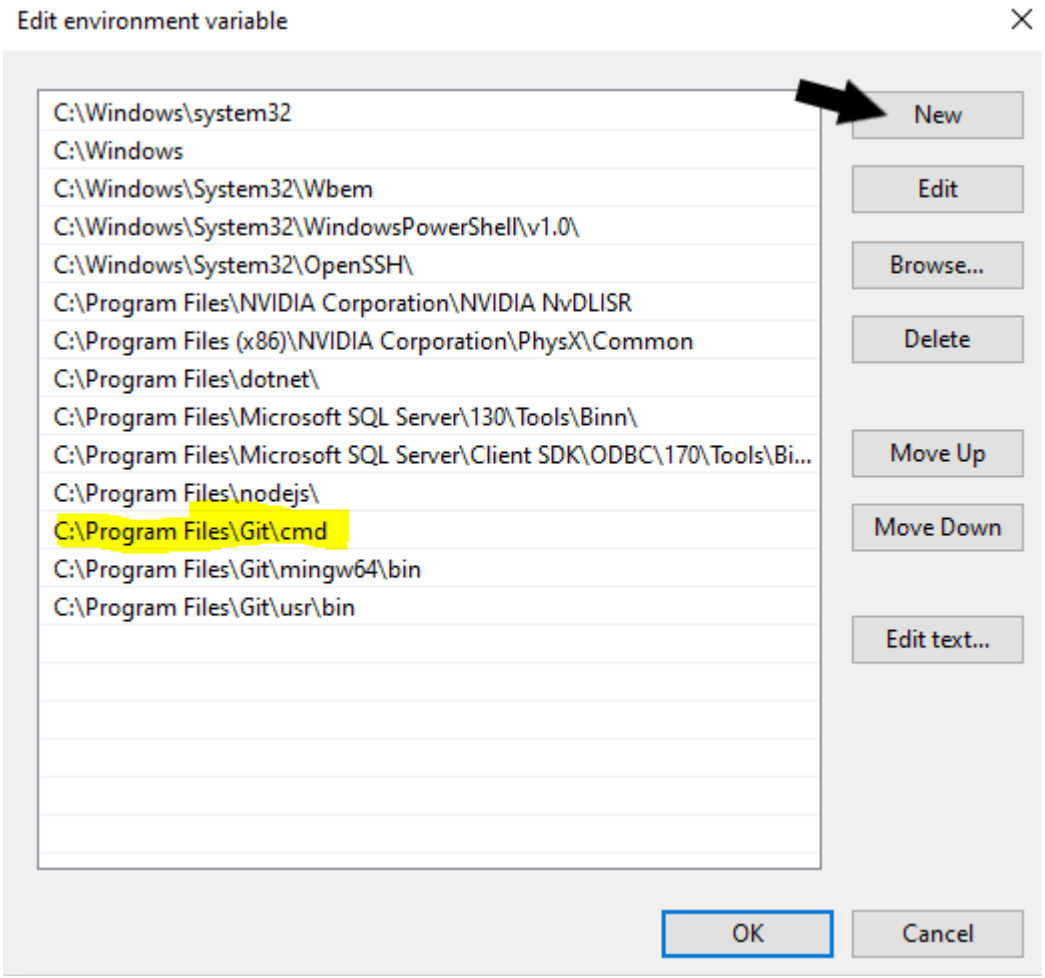
- Choose Environment Variables



- In the System Variables, choose Path, then choose Edit Button



- Choose New, then Paste the Git location that you copied from the cmd



Close the cmd, then open it one more time and type git –version to make sure that the Git was installed successfully

For Mac OS

There is more than one way to install Git on Mac

First way

Type in the terminal
git –version

```
aya@Maysaras-Mac-mini ~ % git --version
git version 2.24.2 (Apple Git-127)
aya@Maysaras-Mac-mini ~ %
```

If you got an error and git is not recognized by your machine, then try the next way

Second way

Follow the steps in the link https://sourabhbajaj.com/mac-setup/Homebrew/ to install homebrew if you don't already have it then type the following command in the terminal

```
$ brew install git
```

Install Homebrew
For more information about what brew can do, visit the following link https://brew.sh/

- Open the terminal and type the following `/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"`

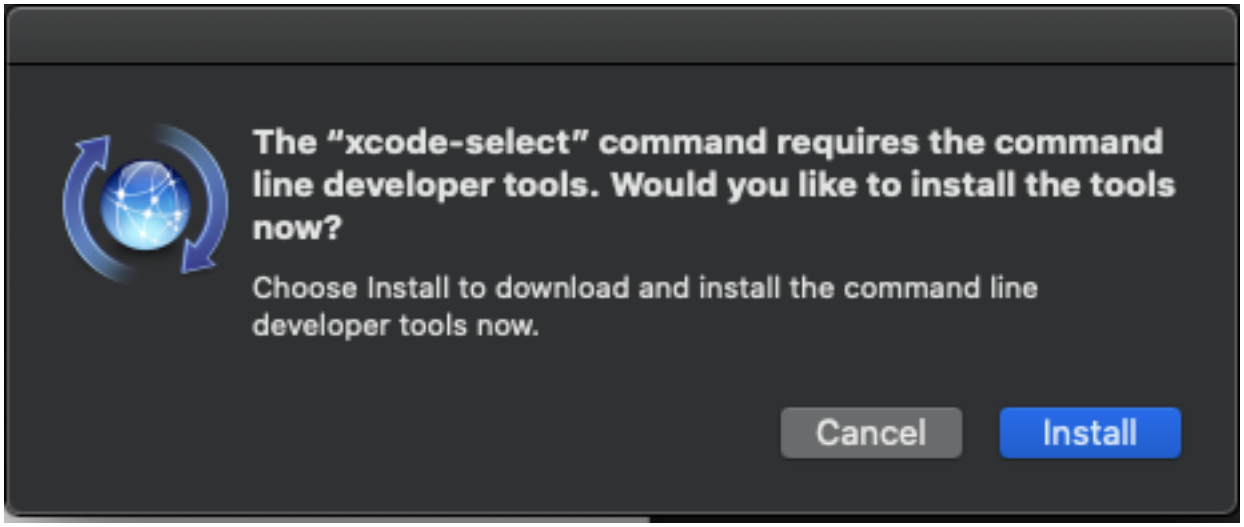
```
/bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```

```
[aya@Maysaras-Mac-mini ~ % /bin/bash -c "$(curl -fsSL https://raw.githubuserconte]
nt.com/Homebrew/install/master/install.sh)"~
[Password:                                                                       ]
==> This script will install:
/usr/local/bin/brew
/usr/local/share/doc/homebrew
/usr/local/share/man/man1/brew.1
/usr/local/share/zsh/site-functions/_brew
/usr/local/etc/bash_completion.d/brew
/usr/local/Homebrew
==> The following existing directories will be made group writable:
/usr/local/bin
/usr/local/include
/usr/local/lib
/usr/local/share
/usr/local/lib/pkgconfig
/usr/local/share/info
```

- If it asks you to press RETURN to continue, then press RETURN/Enter button

```
/usr/local/Homebrew
/usr/local/Frameworks
==> The Xcode Command Line Tools will be installed.

Press RETURN to continue or any other key to abort
```

- Then choose install



After the installation is done, type the following in the terminal to install git

```
$ brew install git
```