UNIVERSITY OF CALIFORNIA, SANTA CRUZ
BOARD OF STUDIES IN COMPUTER ENGINEERING

CSE013E: INTRODUCTION TO PROGRAMMING IN C

Installing Ubuntu on Windows

Introduction

This class allows the option to do the first few labs on any platform of your choice in addition to the Pic32. For windows users we will be recommending that the "Windows Subsystem for Linux" be used. This will install a terminal that pulls programs from the ubuntu repository. This is not mandatory, any system that can compile GCC should be adequate. This can include a virtual machine or the unix timeshare.

This document will discuss how to install ubuntu on windows and run a simple program.

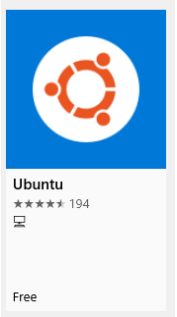
If this document is unclear, see https://aka.ms/wslinstall for more information

Note: Mac users have a C compiler installed by default, the compiler is not GCC it is instead Clang but it will automatically take GCC compilation commands.

1. Go to the Windows Store. It should be at the following icon.

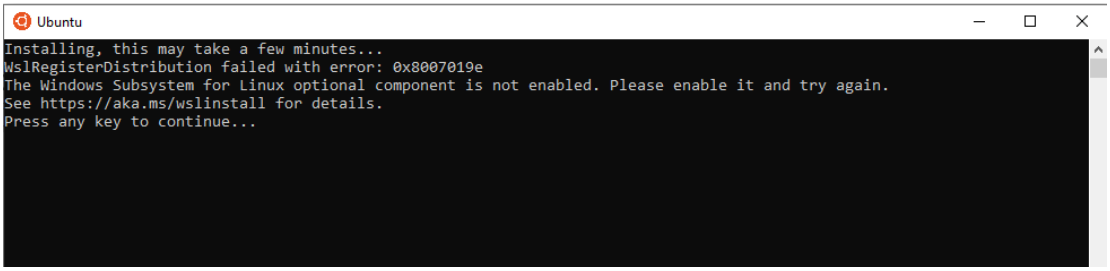
2. Search for Ubuntu in the top right corner of the window.

3. Click the Ubuntu app as shown.

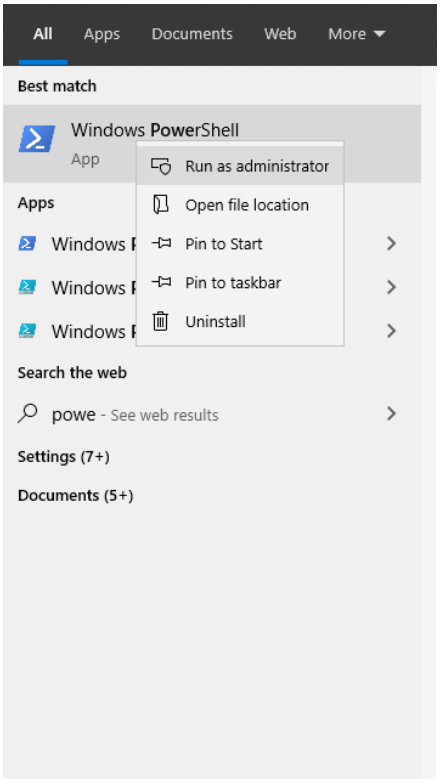


4. Click Get. It should download and install automatically.

5. Next open the app. This will be shown unless you have already enabled the windows subsystem for linux. Close this window.



6. To enable the windows subsystem for linux open windows power shell as shown and click run as adminstrator.

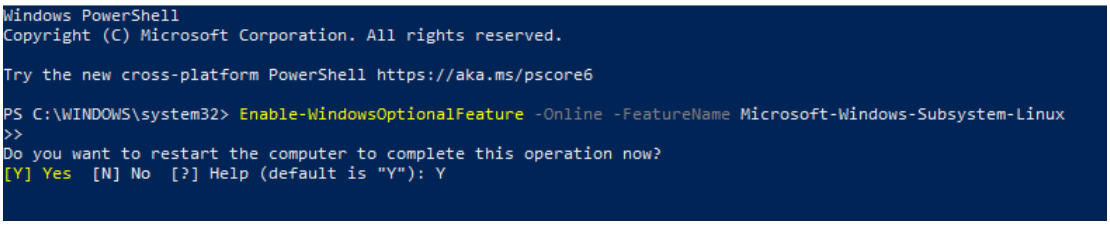


7. Copy into the window:

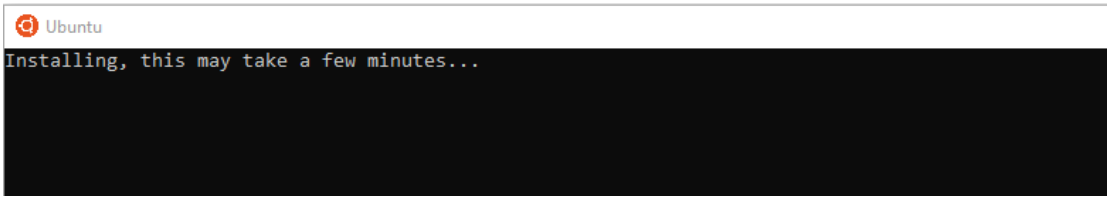
```
Enable-WindowsOptionalFeature -Online -FeatureName
Microsoft-Windows-Subsystem-Linux
```

and hit Enter.

8. The following will show up. Type "**Y**" and hit enter **TO RESTART YOUR COMPUTER** and enable the linux subsystem.

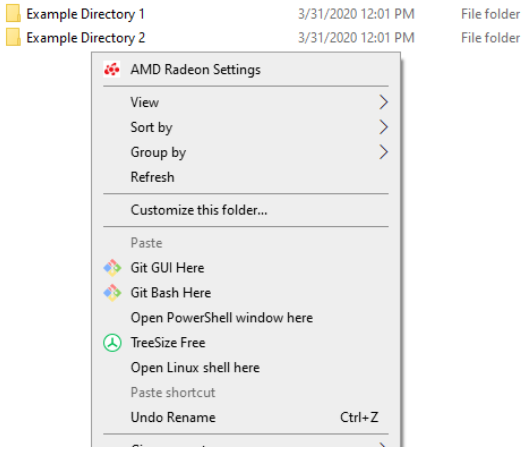


9. Now if we open Ubuntu the following will show up. Wait for the program to finish. It will eventually ask for you to create a username and password.



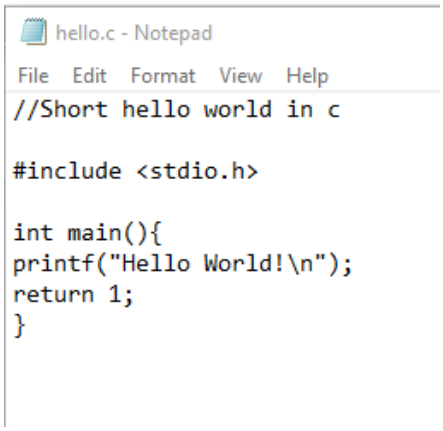
10. Close ubuntu and go into the Windows File explorer. Go into any file and press the combo "SHIFT+Right Click" This will show the following window. Click "Open Linux Shell Here"

Note: older versions of the windows subsystem for linux may not have the ability to enter the terminal through the windows file explorer.



11. This should open the linux shell in that location. Type in “ls” and it should list all of your files in that location. To make sure it’s working we’ll quickly execute a short “Hello World!” c program.

12. Open the text editor of your choice. One bad example is notepad but it work for this simple demo.



13. Create the following file and save it in the folder where you just opened the linux terminal as “hello.c”.

14. First copy into the Ubuntu terminal

```
sudo apt-get update
```

This will update the ubuntu system to the latest releases.

15. When that’s finished copy in

```
sudo apt install gcc –y
```

This will install the “C” compiler gcc. The “**-y**” modifier automatically says yes to all install questions.

16. GCC should now be installed. If you type in

```
gcc --version
```

it should show that some version of GCC greater than 7 is installed.

17. To be fully prepared for the course we will have to also install “make”. “Make” allows makefiles run which will be useful later. To do this type in

```
sudo apt install make
```

And hit enter.

18. To compile our program. Type into the terminal

```
gcc -Wall hello.c -o hello
```

and hit enter.

19. If it successfully completes (The terminal goes to a newline and no errors are shown) then you should be able to run your program. Type into the terminal

```
./hello
```

And hit Enter. This should run you program and you should see the following in the terminal.