

EC ENGR 180DA, Winter 2022: Kellen Cheng (905155544)
MCU Lab (Partners: Ryan Doan, Newton Yee, Grace Zhao)
Due 3 February, 2022 at 7:00 PM

1 MCU Lab

- (a) **Solution:** (Task 1) Please see the below image for proof of the working RaspberryPi in the setup.



- (b) **Solution:** (Task 2) We have successfully cloned the required repositories onto the RaspberryPi. Additionally, Conda and also Vim editor have both been installed onto the microcontroller.
- (c) **Solution:** (Task 3) Please see the below image for proof of a working SSH connection into our RaspberryPi, which runs the python file titled "rpi-test.py" on my Github repository (renamed from "test.py" on the MCU to be distinguishable).

```
pi@raspberrypi: ~/Documents
Preparing to unpack .../vim 2%3a8.2.2434-3+deb11u1_armhf.deb ...
Unpacking vim (2:8.2.2434-3+deb11u1) ...
Setting up vim-runtime (2:8.2.2434-3+deb11u1) ...
Setting up vim (2:8.2.2434-3+deb11u1) ...
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vimdiff (vimdiff) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rvim (rvim) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rview (rview) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vi (vi) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/view (view) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/ex (ex) in auto mode
Processing triggers for man-db (2.9.4-2) ...
pi@raspberrypi:~$ ls
berryconda3  Bookshelf  Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
pi@raspberrypi:~$ cd Documents
pi@raspberrypi:~/Documents$ ls
berryconda.sh  EE180_IMU  firstfile.txt  secondfile.txt
pi@raspberrypi:~/Documents$ vim test.py
pi@raspberrypi:~/Documents$ ls
berryconda.sh  EE180_IMU  firstfile.txt  secondfile.txt  test.py
pi@raspberrypi:~/Documents$ test
pi@raspberrypi:~/Documents$ ./test.py
-bash: ./test.py: Permission denied
pi@raspberrypi:~/Documents$ s
-bash: s: command not found
pi@raspberrypi:~/Documents$ ls -l
total 20
-rwxr--r-- 1 pi pi 116 Jan 29 11:23 berryconda.sh
drwxr-xr-x 3 pi pi 4096 Jan 29 11:36 EE180_IMU
-rw-r--r-- 1 pi pi 11 Jan 29 11:16 firstfile.txt
-rw-r--r-- 1 pi pi 11 Jan 29 11:18 secondfile.txt
-rw-r--r-- 1 pi pi 49 Jan 29 19:26 test.py
pi@raspberrypi:~/Documents$ python test.py
This is a test file on the raspberrypi
pi@raspberrypi:~/Documents$
```

- (d) **Solution:** (Task 4) The code has been cloned and pushed onto my own repository in the repository titled "180DA-WarmUp" in the MCU folder.
- (e) **Solution:** (Task 5) One of the main difficulties we encountered was the lack of the RaspberryPi required. As a result, our group met in person to share access to the microcontroller so that everyone could walk through the lab. Additionally, regarding the MCU itself, the main difficulty was getting started with the connection, as we spent an hour debugging why the SSH connection would not work.