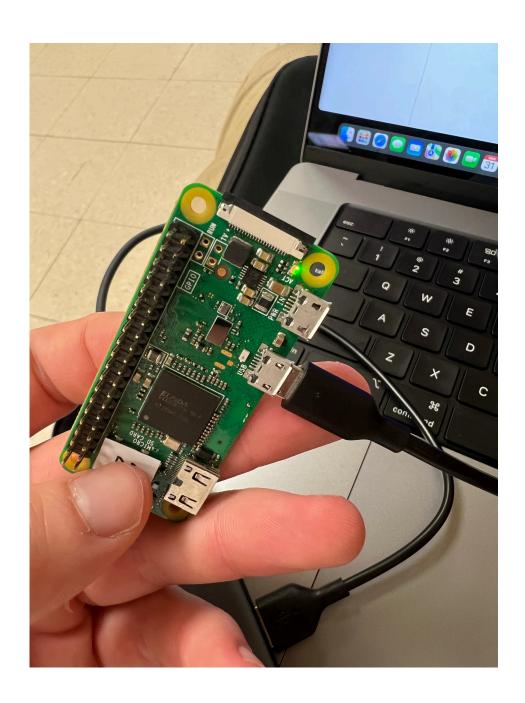ee180DA
LAB 3
Jake Reilly
UID 004996061

Task 1
- Make sure your microcontroller is working. Take a picture of your working MCU

Task 2
- If you have a Raspberry Pi, git clone your repos onto your RPi

```
[pi@raspberrypi ⟩ git clone git@github.com:ECE-180D-WS-2022/Team7.git
Cloning into 'Team7'...
[Enter passphrase for key '/home/pi/.ssh/id_ed25519':
remote: Enumerating objects: 437, done.
remote: Counting objects: 100% (437/437), done.
remote: Compressing objects: 100% (285/285), done.
remote: Total 437 (delta 265), reused 308 (delta 139), pack-reused 0
Receiving objects: 100% (437/437), 12.49 MiB | 1.09 MiB/s, done.
Resolving deltas: 100% (265/265), done.
[pi@raspberrypi ⟩ cd Team7
[WARN] - (starship::utils): Executing command "/usr/bin/git" timed out.
[WARN] - (starship::utils): You can set command_timeout in your config to a
[pi@raspberrypi ⟩ ls
'Bruin Pong'    README.md    send_IMU_bluetooth  'Testing + Old Work'
pi@raspberrypi ⟩ █
```

- Furthermore, for all MCUs that can, please see if you can install a package manager like Conda so that you can have access to as many libraries as possible.
- Do get at least the paho-mqtt library if you are able to.

I was able to install conda and the paho-mqtt library

```
[pi@raspberrypi ❯ conda list
# packages in environment at /home/pi/berryconda3:
#
# Name                    Version                   Build  Channel
asn1crypto                0.24.0                   py36_2
bzip2                     1.0.6                         0
ca-certificates           2018.4.16                     0
certifi                   2018.4.16                py36_0
cffi                      1.11.4           py36hb0735b2_0
chardet                   3.0.4                    py36_3
conda                     4.5.9                    py36_0
conda-env                 2.6.0                         1
cryptography              2.1.4            py36h057ab03_0
decorator                 4.3.0                     py_0
ffmpeg                    3.2.4               hf767ee3_0
giflib                    5.1.4               h3b1de47_0
hdf5                      1.8.17                        0
idna                      2.7                      py36_2
ipython                   6.2.1            py36hd91d44c_0
ipython_genutils          0.2.0                     py_1
jasper                    1.900.1             hb74bc11_4
jpeg                      9b                            0
libffi                    3.2.1                         0
libgfortran               3.0.0                         1
libpng                    1.6.28                        0
libtiff                   4.0.6                         0
libwebp                   0.5.2               hcb3eeb6_7
ncurses                   5.9                           0
netifaces                 0.11.0                   <pip>
numpy                     1.14.0           py36hebd9de5_0
openblas                  0.2.19                        0
opencv                    3.3.0            py36hcfffc66_0
openssl                   1.0.2r              hdff2a78_0
packaging                 17.1                      py_0
paho-mqtt                 1.6.1                    <pip>
pexpect                   4.6.0                    py36_0
pickleshare               0.7.4                    py36_0
pip                       21.3.1                   <pip>
pip                       18.0                     py36_1
prompt_toolkit            1.0.15                    py_0
ptyprocess                0.6.0                    py36_0
pycosat                   0.6.3            py36h04713b3_0
pycparser                 2.18                      py_1
pygments                  2.2.0                     py_1
pyopenssl                 16.2.0                   py36_0
pyparsing                 2.2.0                     py_1
pysocks                   1.6.8                    py36_1
python                    3.6.6                         0
readline                  6.3                           0
requests                  2.19.1                   py36_1
ruamel_yaml               0.11.14                  py36_0
setuptools                40.0.0                   py36_1
simplegeneric             0.8.1                     py_1
six                       1.11.0                   py36_1
smbus2                    0.4.1             pyh44b312d_0    conda-forge
sqlite                    3.15.0                        0
tk                        8.6.6                         0
traitlets                 4.3.2                    py36_0
urllib3                   1.23                     py36_1
wcwidth                   0.1.7                     py_1
wheel                     0.31.1                   py36_1
x264                      20131217            hc5d671e_0
xz                        5.2.2                         0
yaml                      0.1.6                         0
zlib                      1.2.11                        0
pi@raspberrypi ❯
```

Task 3
- Using whatever method it is you like, please run code on your MCU. The only requirement of this code segment is for you to have tit output something to console of your computer, so that you can take a screenshot of it. (Cloning might give you the test.py file from week1!)

```
[pi@raspberrypi ⟩ ping www.google.com
 PING www.google.com(lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004)) 56 data bytes
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=2 ttl=117 time=62.3 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=3 ttl=117 time=11.7 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=4 ttl=117 time=28.6 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=5 ttl=117 time=9.55 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=6 ttl=117 time=52.5 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=7 ttl=117 time=7.29 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=8 ttl=117 time=30.7 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=9 ttl=117 time=65.6 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=10 ttl=117 time=18.7 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=11 ttl=117 time=21.2 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=12 ttl=117 time=14.5 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=13 ttl=117 time=6.07 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=14 ttl=117 time=26.9 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=15 ttl=117 time=66.3 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=16 ttl=117 time=28.6 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=17 ttl=117 time=8.74 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=18 ttl=117 time=20.9 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=19 ttl=117 time=40.3 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=20 ttl=117 time=31.7 ms
 64 bytes from lax17s55-in-x04.1e100.net (2607:f8b0:4007:819::2004): icmp_seq=21 ttl=117 time=51.5 ms
```

```
[pi@raspberrypi ⟩ python3 hi.py
 hi
 pi@raspberrypi ⟩ ›
```

Please push the screenshot of the terminal to Github. This shows that you can have a CPU-MCU connection that you can utilize on your computer.

https://github.com/jathrei/180DA-WarmUp

Task 4
- Please save the code in your cloned repo on the RPi and push the changes to Github WITHOUT merge conflicts from step 2.

```
commit 0b2e92638ed82bc24aec7c5a9afbb6b56a450686 (HEAD -> main, origin/main, origin/HEAD)
Author: make-a-mark <markaandal@gmail.com>
Date:   Wed Mar 23 00:14:01 2022 -0700

    readding graphics

commit 506a020a806749440fe9bff52a12a3dff8f46697
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Fri Mar 18 15:40:52 2022 -0700

    Adding more readmes to subfolders

commit 247a9416601b3b5376abd1b4b2b5993c54076a8e
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 23:29:13 2022 -0700

    add readme for subfolder

commit f7bdd4c6108234f3c0f424046706ae1e25d63bb5
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 23:26:37 2022 -0700

    adding readmes for subfolders

commit d1627950553775538c19649e9b04d90a64e087fe
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 23:18:50 2022 -0700

    clean repo

commit f2992c0d48c9d2c566c656da621b2b12bf86b61d
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 22:58:07 2022 -0700

    updated README

commit 74d2ac9dcd089386f8943042419d13ffd9f989a4
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 22:56:16 2022 -0700

    fixing preview image

commit 716929475f5b45b0b0168ddd5704f73abe2f0139
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 22:55:26 2022 -0700

    updated README

commit 1488400aa73a3731800496b6800e8b4a98b93f7a
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 22:48:58 2022 -0700

    updated README

commit 38ab2a0d5b0daf995a7ded880ebed865c5724e24
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 22:47:07 2022 -0700

    updated README

commit 4f9070b01d9823f7da0dbfe347a086a0731aa7d2
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 22:45:35 2022 -0700

    updated README

commit beee5d7da81ec2db2c5235bb805791bf64e0323e
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
Date:   Tue Mar 15 20:12:30 2022 -0700

    cleaning & organizing repo

commit a10fa5da0808737a56f44d6bdd14d496e905473c
Merge: 3143dd2 f8188b4
Author: make-a-mark <56522555+make-a-mark@users.noreply.github.com>
:
```

Difficulties and Questions

Originally, I could not get my computer to find the raspberry pi that I was using. I tried both computers that I have access to (one Mac one Windows), and restarted the process many times. It never worked. Finally, I borrowed a Raspberry Pi from a classmate and repeated the process. It worked. I also had trouble downloaded the paho-mqtt because conda does not host it. However, pip install worked perfectly.