# IOT\_HW3

## Setup Instructions

### Broker

- Start the broker in Laptop 1 (mosquitto mqtt)

- Note the IP address of the Laptop, it can be found by running the command:

```

ipconfig

```

- Enable the broker at the given port by adding the port rule and disabling the specific firewalls.(Detailed in the report)

- Navigate to the location where Mosquitto has been installed, address is of the form : <Drive\_Name>:\Program Files\Mosquitto, open the file named “mosquitto.conf” and add the following lines in the file:

```

allow\_anonymous true

listener 1883 <ip\_address\_of\_the\_system>

```

- Update the broker address field in config.ini in all the devices, add laptop 1’s IP address in the field “broker\_address”

- Start the broker service on laptop 1 before running any other code. The broker can be started by navigating to the location where Mosquitto has been installed and running the following command:

```

mosquitto -c "mosquitto.conf" -v

```

### RaspberryPiA

- Connect LDR, Potentiometer and ADC to RaspberryPi as per the circuit diagram.

- The control.txt decides if we wish to have a normal operation or perform an ungraceful disconnect or a graceful disconnect.

1 - Normal operation

2 - Graceful disconnect

3 - Ungraceful disconnect

- Before running the piA code, we need to setup the environment by installing the spidev and related dependencies for the adc library to function correctly.

- Run the setup script - `./setup.sh`. If SPI is not enabled, edit /boot/config.txt with root permissions to enable the parameter - dtparam=spi=on and then rerun the script.

- After the setup is successful, run piA code via `python3 piA.py`

### RaspberryPiC

* Raspberry PiC is run on Laptop 3.
* Run the piC code via ‘python3 piC.py`
* The control.txt decides if we wish to have a normal operation or perform an ungraceful disconnect or a graceful disconnect.

1 - Normal operation

2 - Graceful disconnect

3 - Ungraceful disconnect

* Edit the control.txt accordingly to mimic the ungraceful and graceful connect situations.

### RaspberryPiB

- Connect LEDs, and Resistors to RaspberryPi as per the schematic. Run the code:

```

python code/piB.py

```

### Laptop 2 [Logger]

- The logger was setup on Laptop 2 by executing the code as follows -

```

python code/logger.py

```