# Assignement 3 Documentation

A Simple Web Server to display some sensory data and button presses on my MicroBit.

## How to run

* Connect microbit with a microUSB and flash Assign3.hex
* Download iot.py and server.py
* Update the port details in iot.py
* Run iot.py and server.py
* Access the link provided by the server.py (example screen below)

A screen shot of a computer

Description automatically generated

## Initial setup

Since the server would be built on python flask and USB connection would be used for data reading Flask and Serial were pip installed

A screenshot of a computer program

Description automatically generated

After that MicroBIT code was added to print the data to the terminal initially temperature data was used to test, before adding on light sensor data and finally the button press info. Then added to send data every 250 milliseconds.

from microbit import \*

import radio

# Turn on the radio module, incase we want to radio the data to another device

radio.on()

while True:

# Read temperature and light level from sensors

temperature\_celsius = temperature()

light\_level = display.read\_light\_level()

# Check light level and provide messages

if light\_level < 85:

print("lIt is very Dark")

elif light\_level > 200:

print("lIt is very Bright")

else:

print("lNormal Lighting")

sleep(10)

# Prepare and print temperature data

data = 't' + str(temperature\_celsius) + ' degree celsius'

print(data)

sleep(10)

# Check button presses and provide messages

if button\_a.is\_pressed() and button\_b.is\_pressed():

print("bButton A and B is pressed")

elif button\_a.is\_pressed():

print("bButton A is Pressed")

elif button\_b.is\_pressed():

print("bButton B is Pressed")

else:

print("bNo Buttons Pressed")

sleep(250) # Send data every 250 seconds

Next created index and sub html templates and created iot.py to capture and transfer the data received from microBIT. NOTE THAT THE PORT in iot.py needs to be updated to avoid exceptions. This has to match the port the microBIT is connected to and the microBIT has to be flashed with above code.

A screen shot of a computer program

Description automatically generated

The script in index.html fetches and updated the values to be displayed. Currently it is scheduled to run every 0.5 seconds (twice the duration at which the microbit sends data)

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Description automatically generated

A black and white text

Description automatically generated with medium confidence

A black background with white text

Description automatically generated

Finally the server.py sets up a Flask web server to render the HTML templates.

