Faculty of Engineering & Applied Science

SOFE 4610U
Design & Analysis of IoT

Assignment-3

Group#: 2

First Name	Last Name	Student Number
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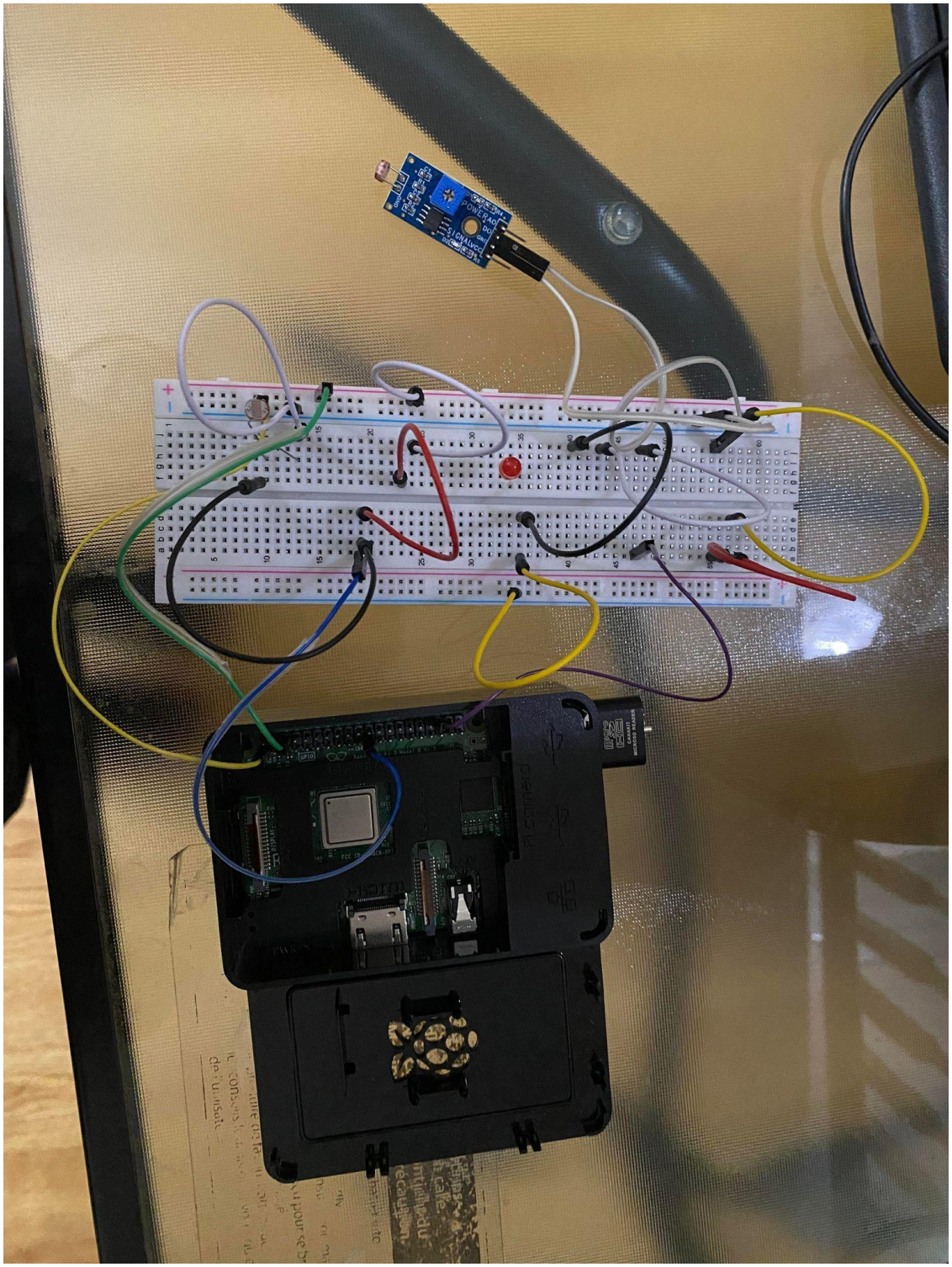
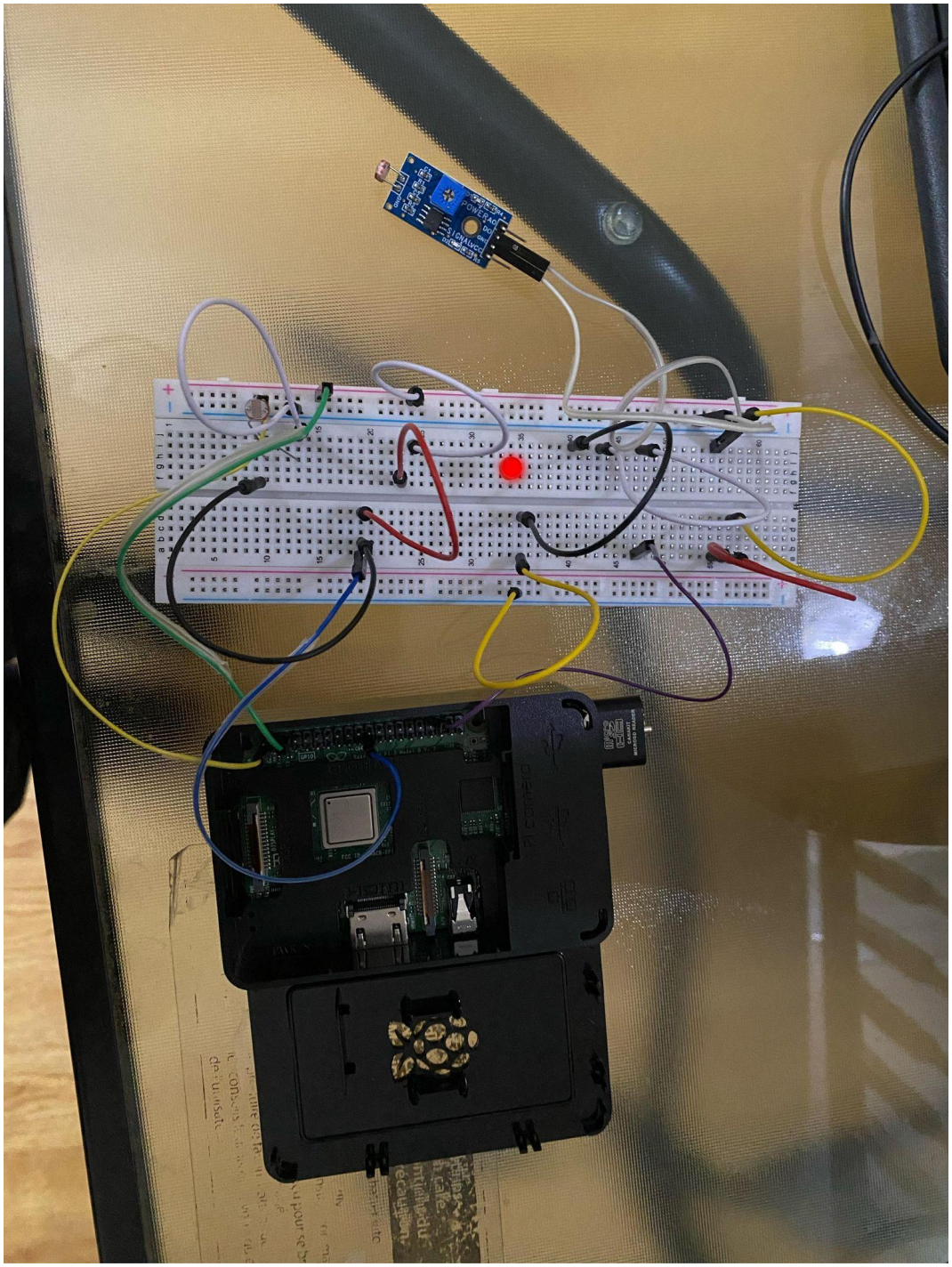
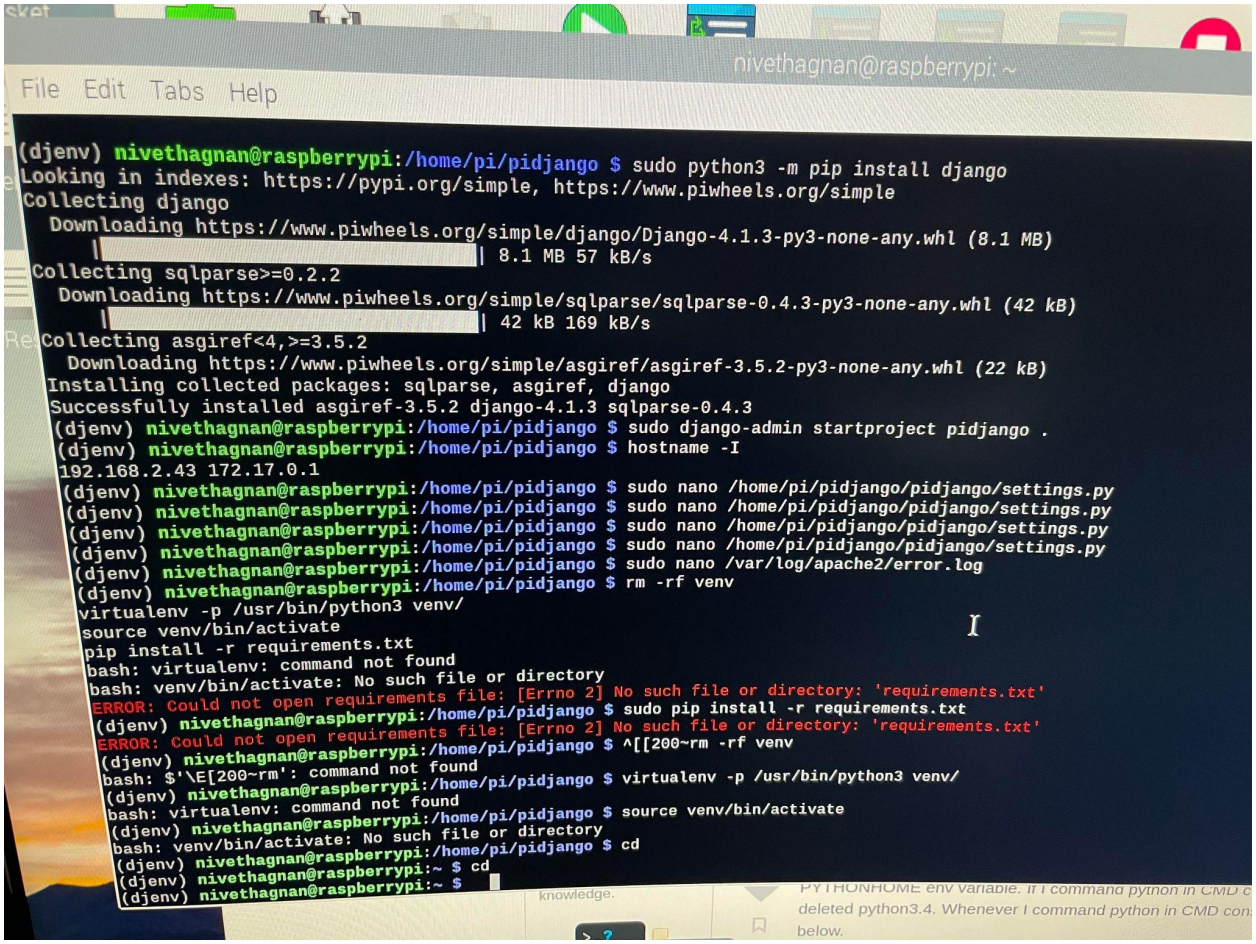


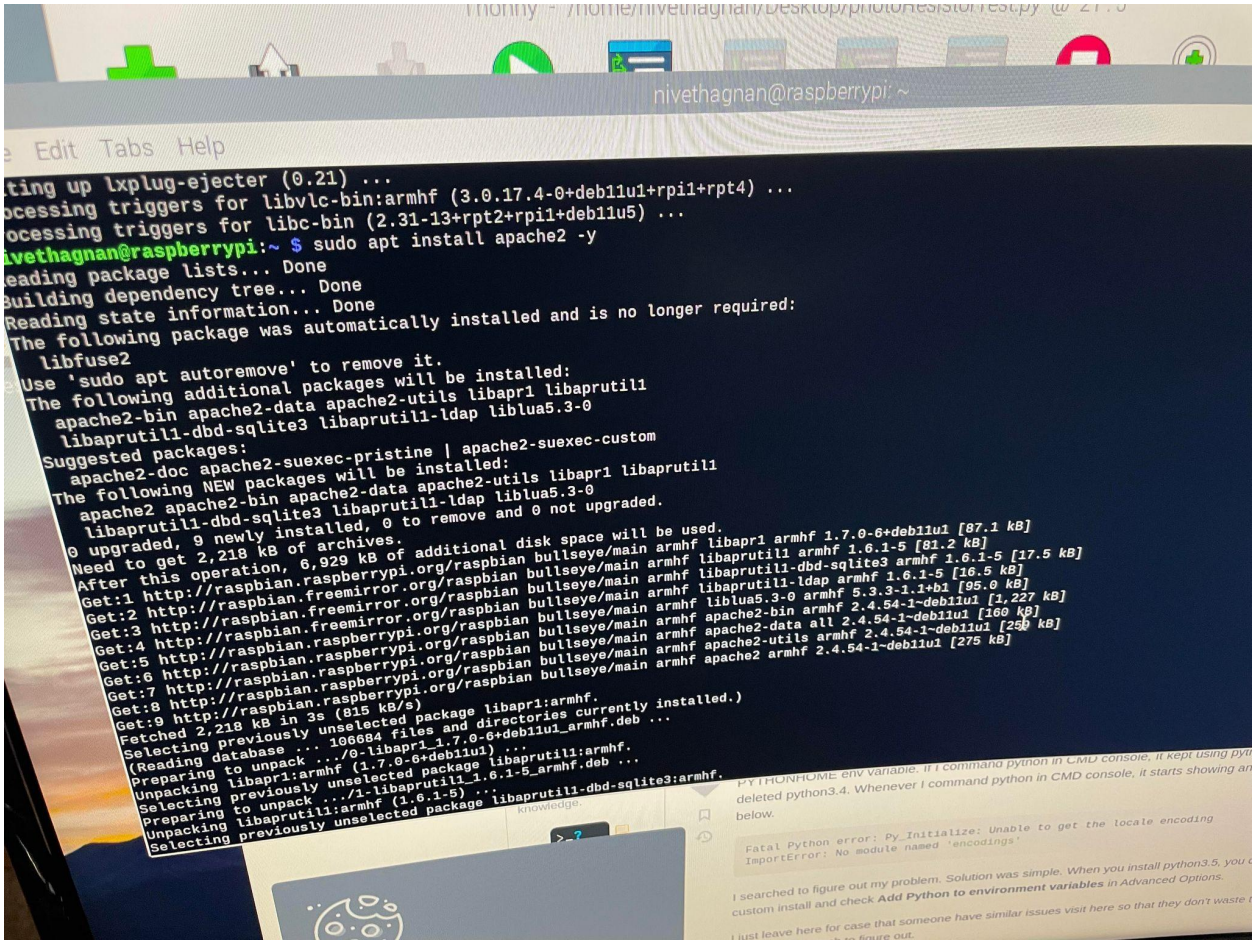
In this screenshot you can see that our setup of the system. This includes the use of the Raspberry Pi which was used as the sensor device, with the photoresister sensor which was used for detecting the light intensity, and then the LED which was used for the light itself. Jumper cables were used to ensure all the components were connected as they should be.



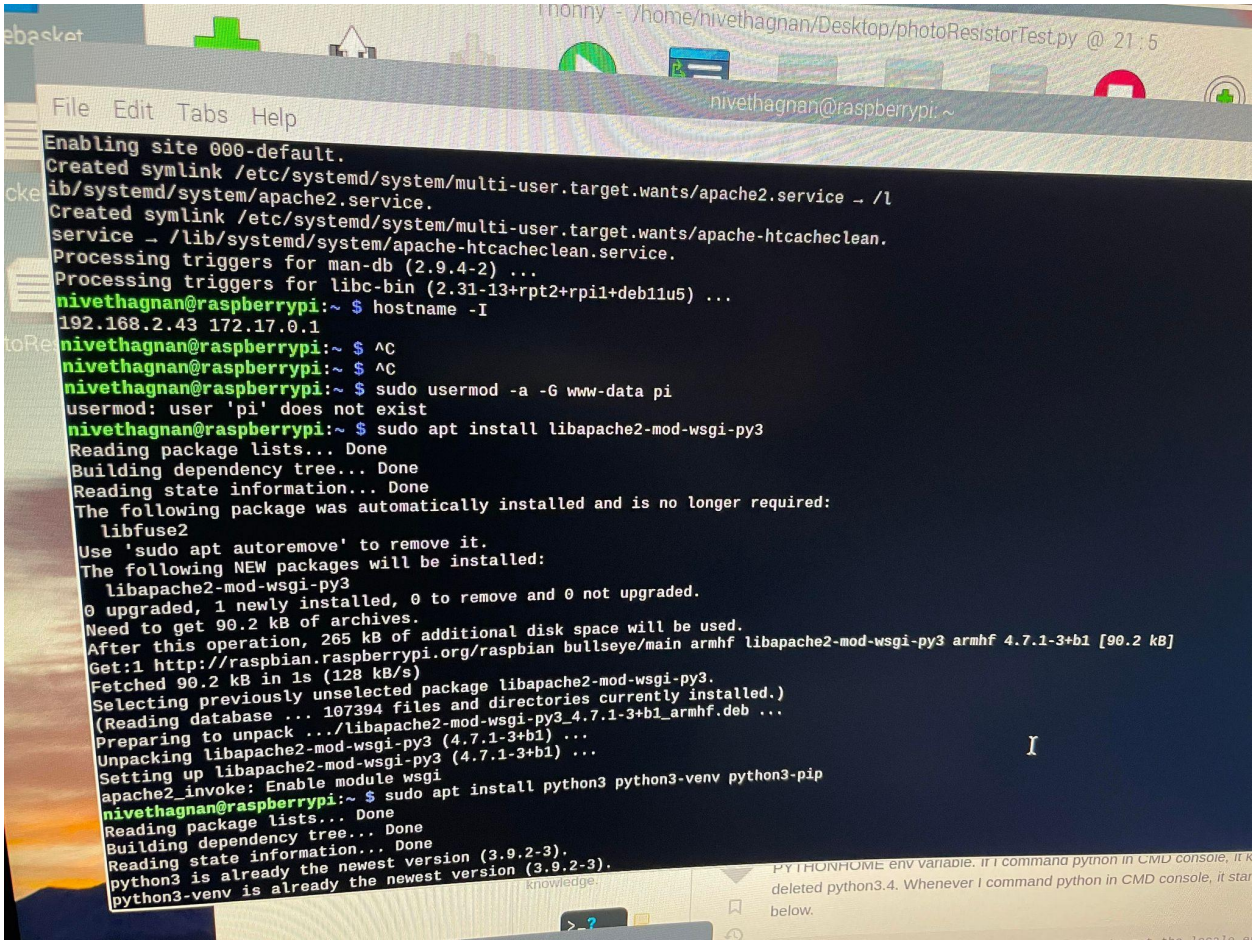
In this screenshot you can see that we successfully turned on the LED light using the resistor and the capacitor accordingly.



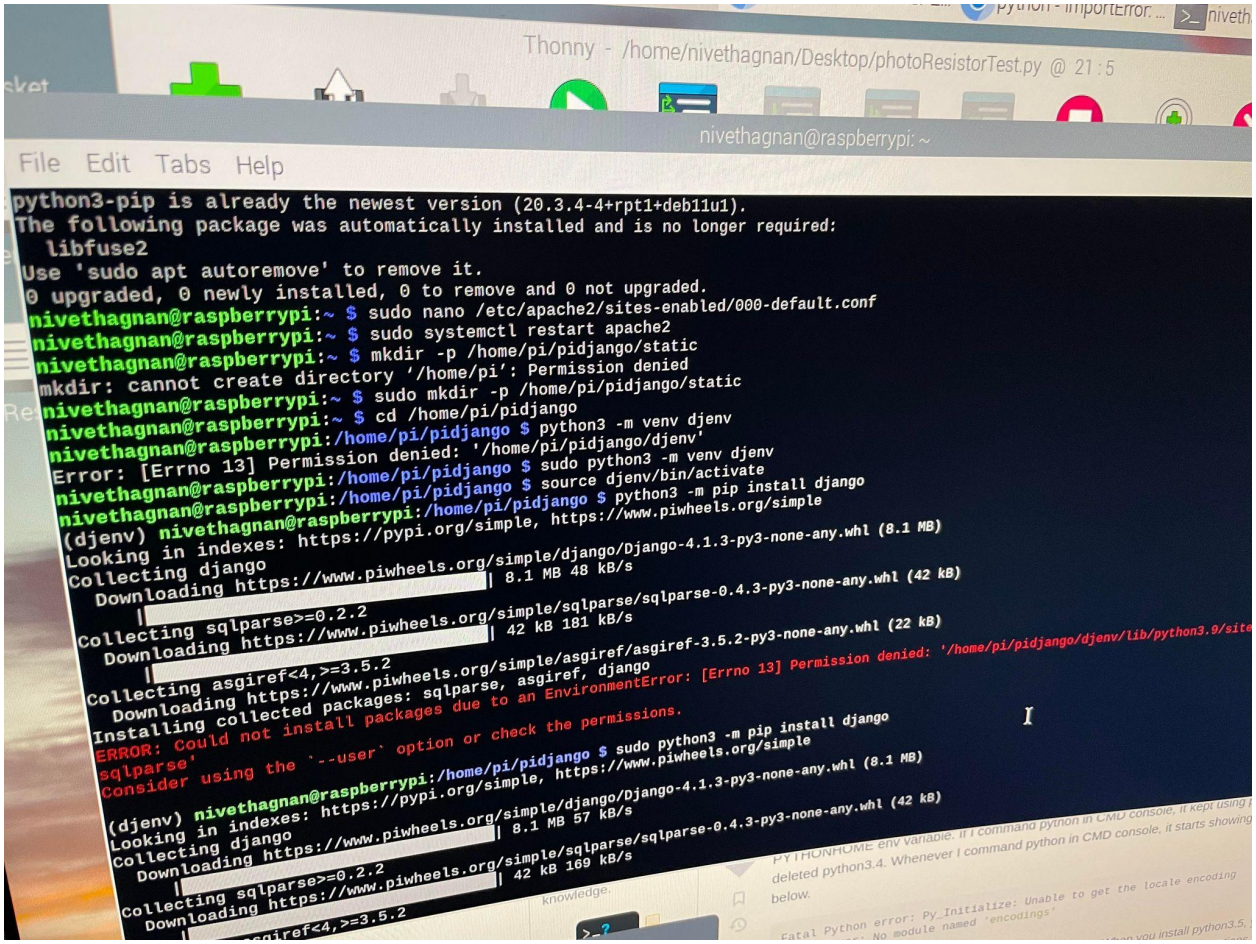
In the above screenshot the python3 -m pip install django command is used to install the needed packages for django. The next commands are used to create the different python files as needed.



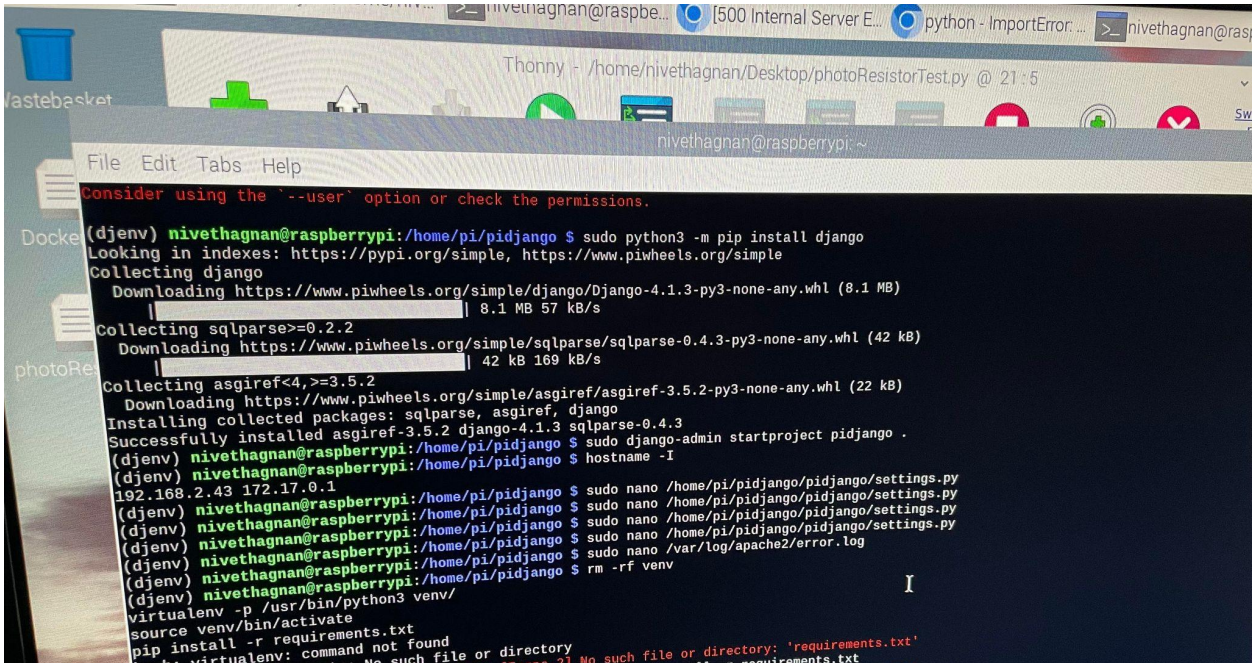
The apache2 packages also needed to be installed to use Django



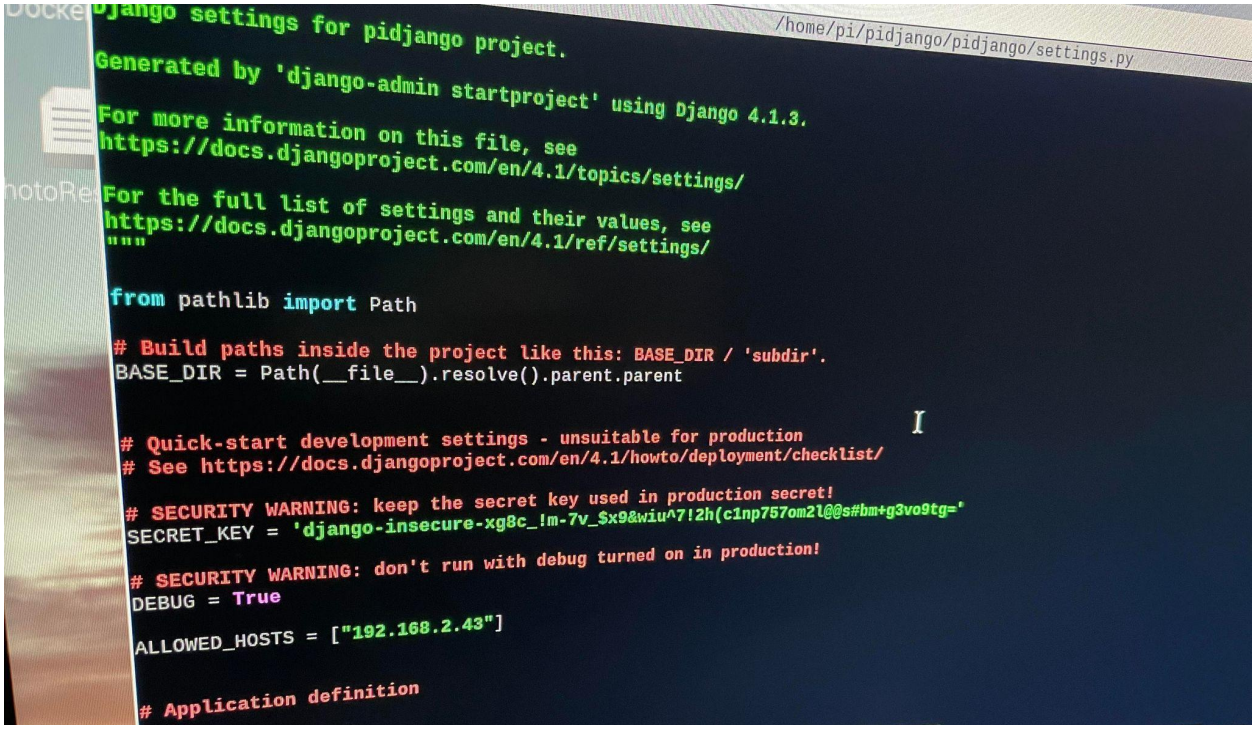
The hostname -I command here in the above screenshot is used to find the IP address to view the server under the correct IP.



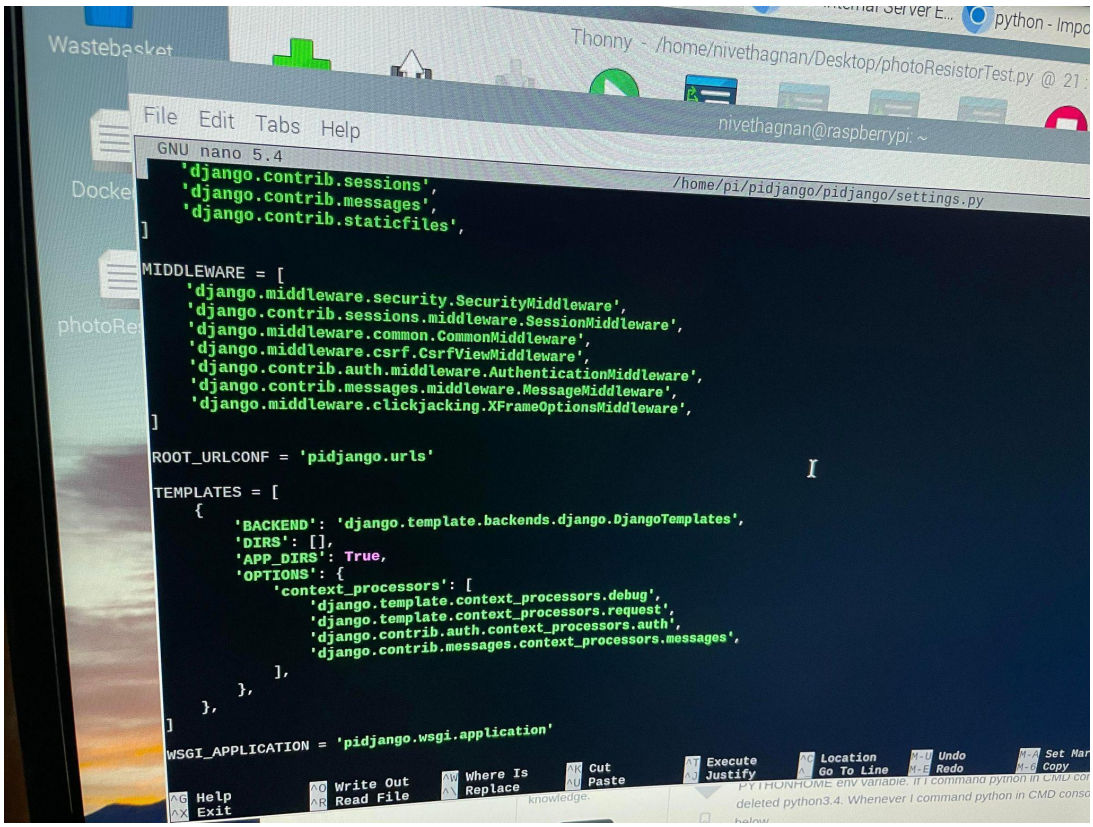
The commands here are used to install the needed packages and python files for Django.



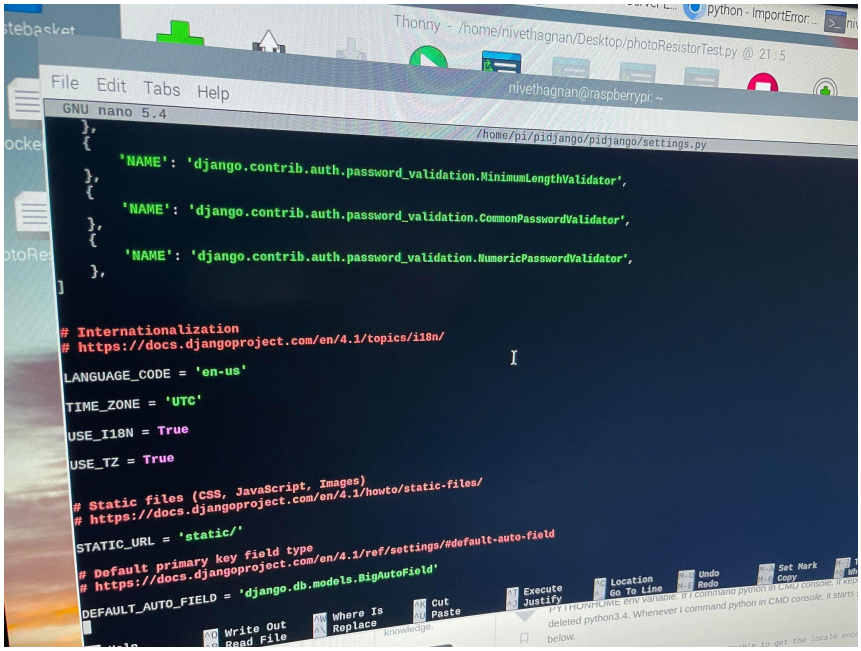
The virtual environment created within the raspberry pi is used to download the python files in the correct virtual environment.



The script is edited for the ALLOWED_HOSTS part.



This is the full unedited script.



Github repo: https://github.com/MunazzaF/Assignment3IoT

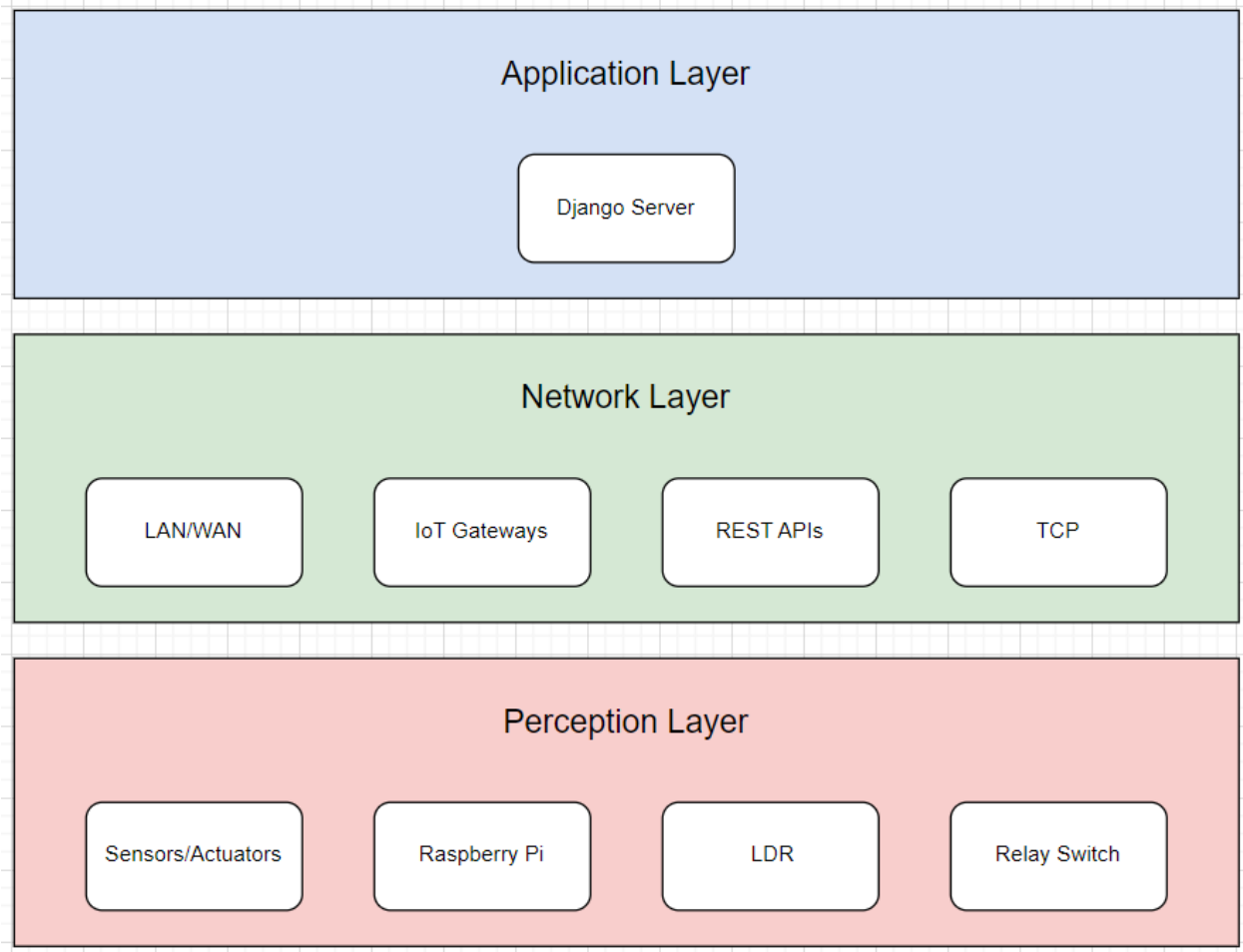
```
HTTP 200 OK
Vary: Accept
Content-Type: text/html; charset=utf-8
Allow: GET, POST, HEAD, OPTIONS

{
    "count": 1,
    "next": null,
    "previous": null,
    "results": [
        {
            "url": "http://localhost:8000/state/1/",
            "name": "on"
        }
    ]
}
```

```
HTTP 200 OK
Vary: Accept
Content-Type: text/html; charset=utf-8
Allow: GET, PUT, DELETE, HEAD, OPTIONS, PATCH

{
    "url": "http://localhost:8000/mode/1/",
    "name": "manual"
}
```

This shows the front end Django for the Auto and Light.



The above screenshot shows the architecture design of the system. It shows each layer of the system and which components were within their respective layer. In the application layer we have the Django server. The Django server is used for the server-side web framework which is written in python scripts. In the network layer we have four different components, the LAN/WAN, IoT Gateways, REST APIs and TCP. The network layer has all the components that are required for packet forwarding and routing. The last layer which is the perception layer has four components, which includes the sensors and actuators, the Raspberry Pi, the LDR, and the Relay Switch. The Raspberry Pi was used as the sensor device, and the LDR which is the photoresister sensor was used as the light intensity detector.