Intelligent Street Lighting System

Software Installations:

1. Update your Raspberry Pi sudo apt-get update sudo apt-get upgrade

2. Install Python and pip if not already installed sudo apt-get install python3 python3-pip

 # 3. Install required Python packages

pip3 install RPi.GPIO pip3 install pad4pi pip3 install flask pip3 install flask-cors pip3 install requests

 # 4. Create a project directory

mkdir street_light_system cd street_light_system

 # 5. Create a static directory for web files mkdir static

Project Setup :

1. **Create the main Python file:** nano street_light_system.py
2. **Copy the code into this file.**
3. **Make the script executable:** mod + street_light_system.py

Running the Project :

1. **Start the system:** python3 street_light_system.py
2. **Access the web interface:**
3. **From the same Raspberry Pi:** http://localhost:5000
4. **From other devices on the network:** http://[raspberry_pi_ip]:5000

To find your Raspberry Pi IP: hostname -I

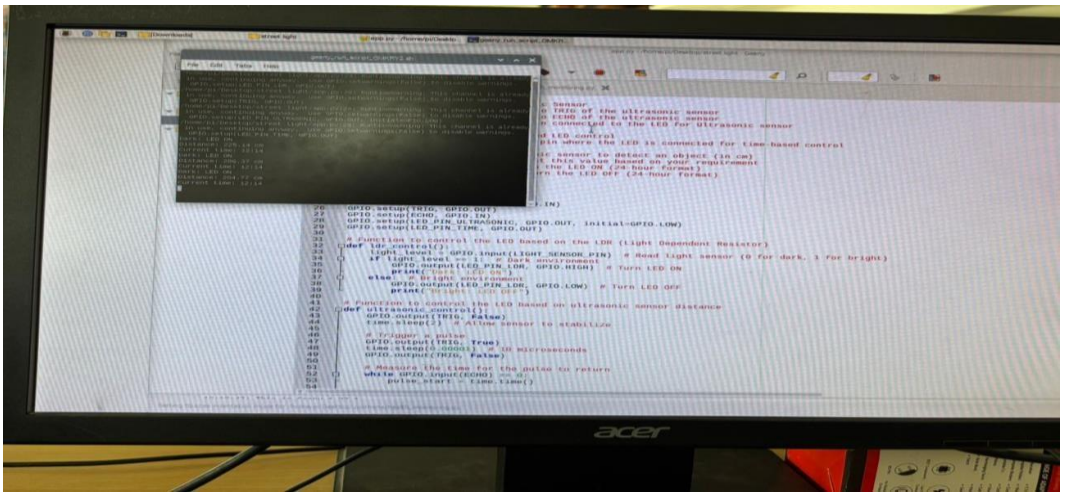


Fig. The Code of the Project

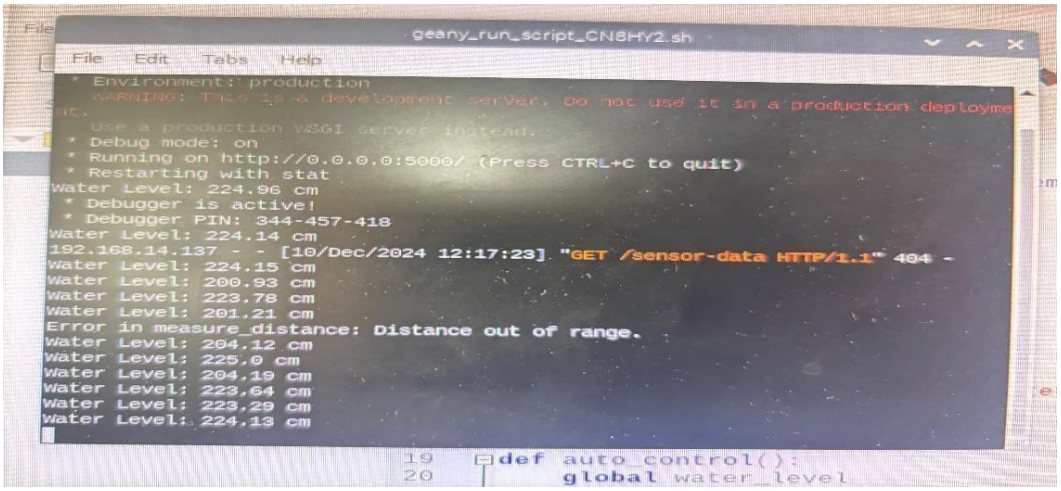
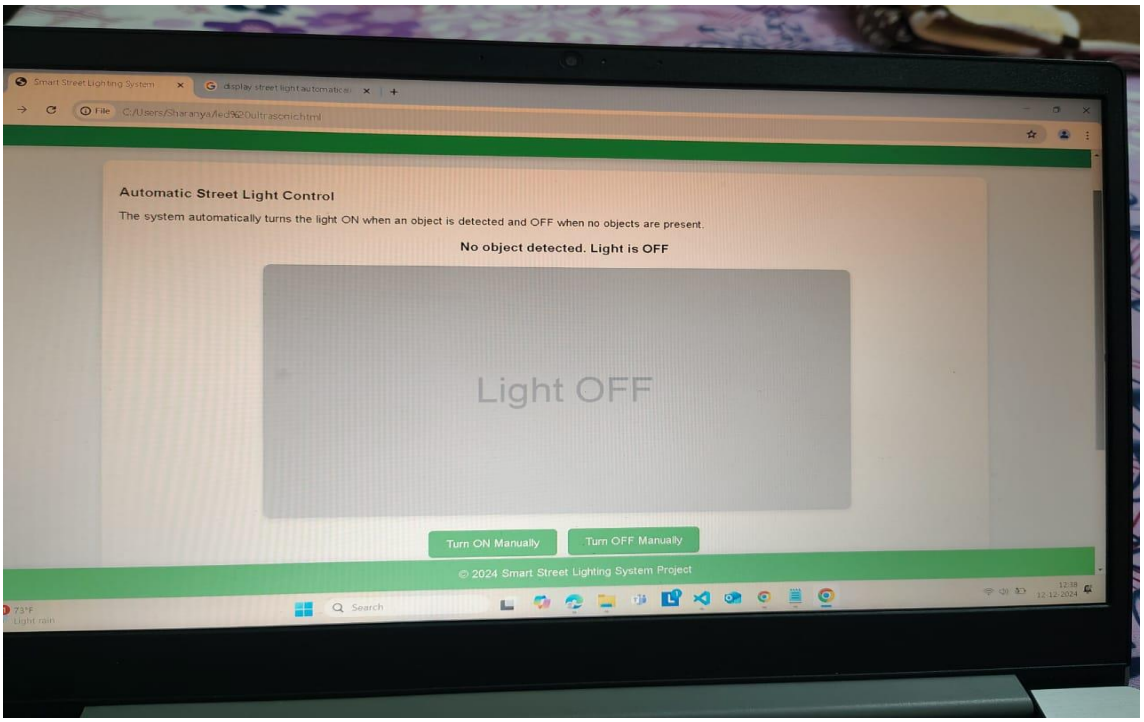


Fig. The Terminal Page of the Project


Automatic Street Light Control
The system automatically turns the light ON when an object is detected and OFF when no objects are present.
No object detected. Light is OFF
Light OFF
Turn ON Manually
Turn OFF Manually
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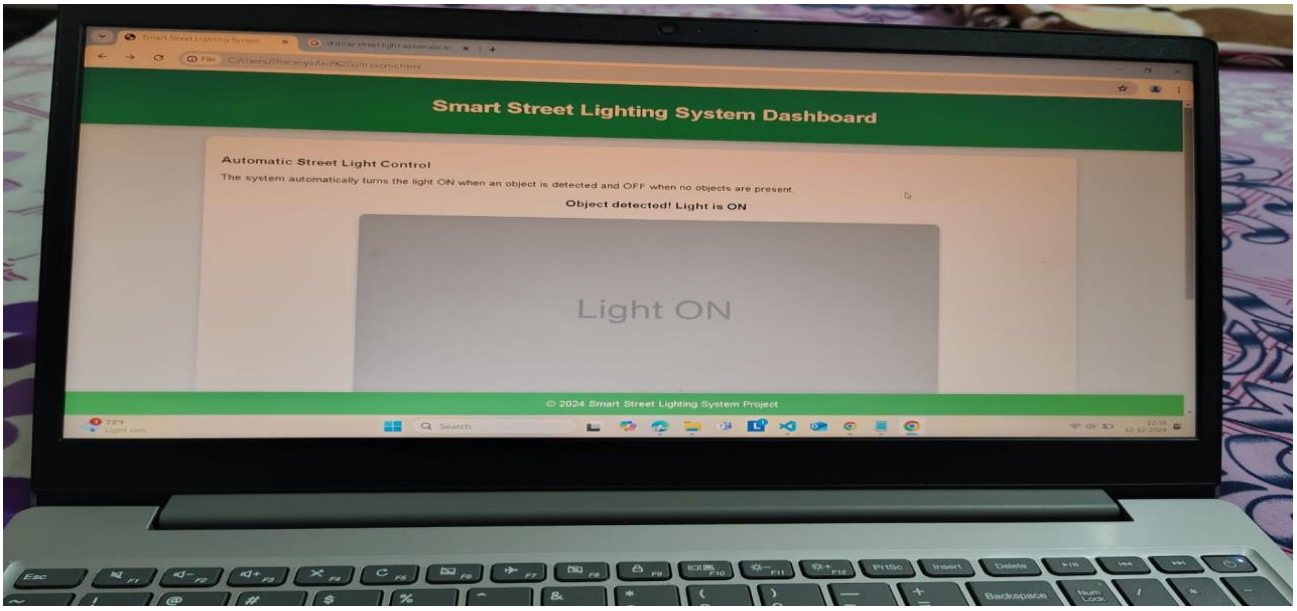
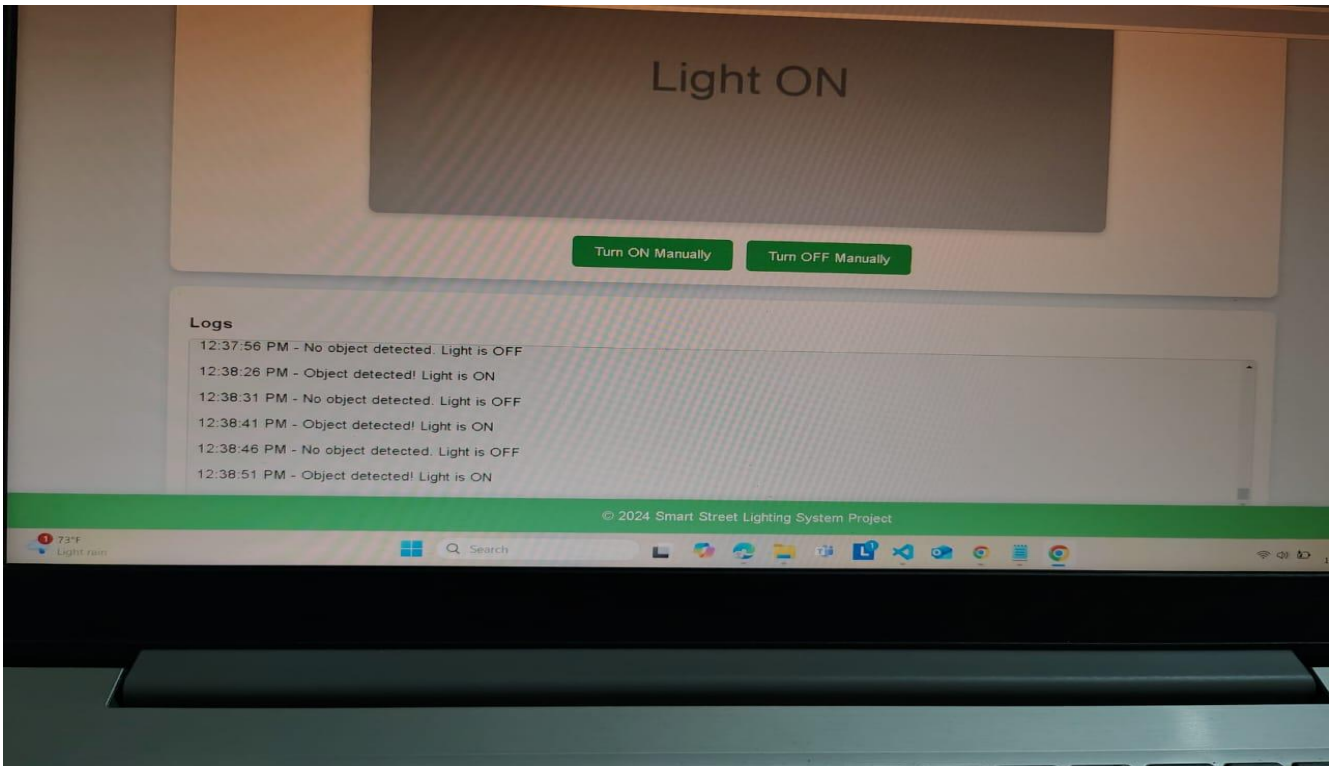

Smart Street Lighting System Dashboard
Automatic Street Light Control
The system automatically turns the light ON when an object is detected and OFF when no objects are present.
Object detected! Light is ON
Light ON
© 2024 Smart Street Lighting System Project


Light ON
Turn ON Manually
Turn OFF Manually
Logs
12:37:56 PM - No object detected. Light is OFF
12:38:26 PM - Object detected! Light is ON
12:38:31 PM - No object detected. Light is OFF
12:38:41 PM - Object detected! Light is ON
12:38:46 PM - No object detected. Light is OFF
12:38:51 PM - Object detected! Light is ON
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