HOME SECURITY AND AUTOMATION SYSTEM(B3G3)

Kusuma S (1AP21IS015)

Gnanesh V S (1AP21CS019)

Syed Awaiz Ahmed (1AP21CS048)

1.Overview

The Home Automation and Security System IoT project integrates smart devices and sensors to provide automated control of household functions and enhanced security. It enables users to remotely manage lighting, appliances, and security features like cameras and motion detectors through a mobile app or voice commands. The system leverages real-time monitoring, alerts, and data analytics for convenience, energy efficiency, and safety.

2.Installation

- Flask: Web framework to host the backend API.
  Install: pip install flask

- Adafruit_DHT: Interface with the DHT11 temperature and humidity sensor. Install: pip install Adafruit_DHT

- Adafruit_GPIO and Adafruit_MCP3008: Manage GPIO pins and MCP3008 ADC. Install: pip install Adafruit-GPIO Adafruit-MCP3008

- RPi.GPIO: GPIO library for Raspberry Pi
  Install: pip install RPi.GPIO

- Twilio: Send SMS alerts.
  Install: pip install twilio

3.Project Setup

1.Hardware Setup:

Connect the DHT11 sensor, Ultrasonic sensor,LDR sensor, and buzzer to Raspberry Pi GPIO pins as specified in app.py.

2. Software Setup:

Cloneor place project files.

flask.py: Backend server code.

3. Configuration:

Update flask.py with:

Twilio Credentials: Replace placeholders for TWILIO_ACCOUNT_SID,

TWILIO_AUTH_TOKEN, and TWILIO_PHONE_NUMBER.

4. Execution:

- Start the Flask server: python flask.py.
- Access http://:5000 in a web browser.
- Open the dashboard and perform the required functions.

4.Snapshots

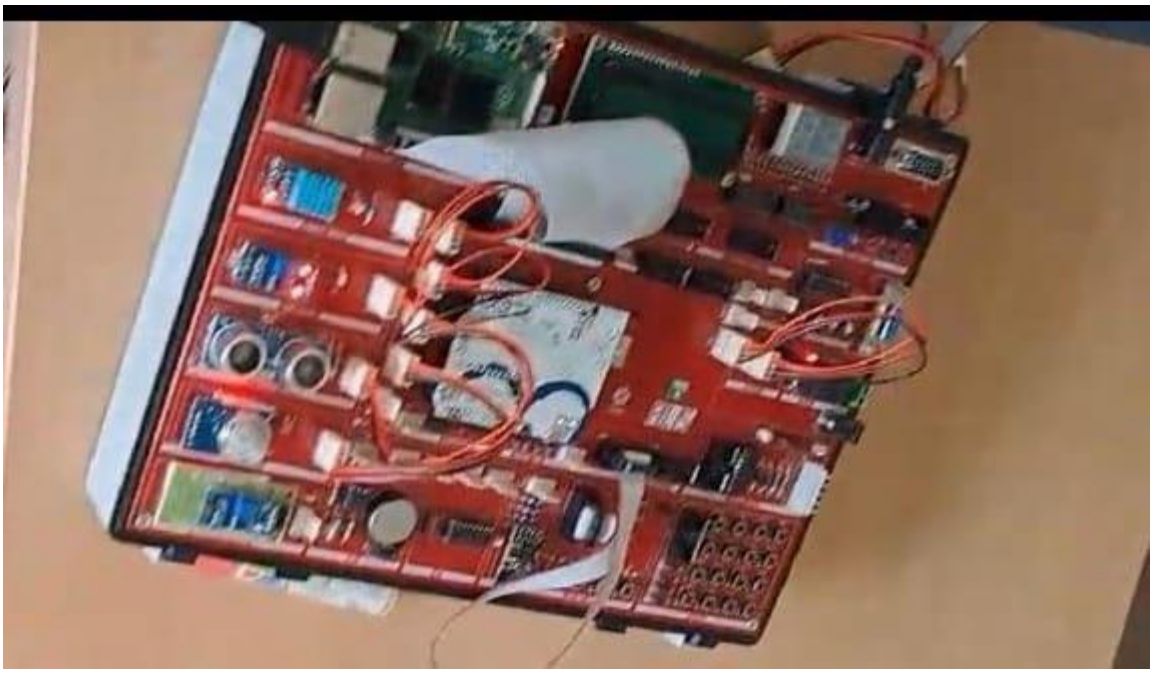


Fig:4.1

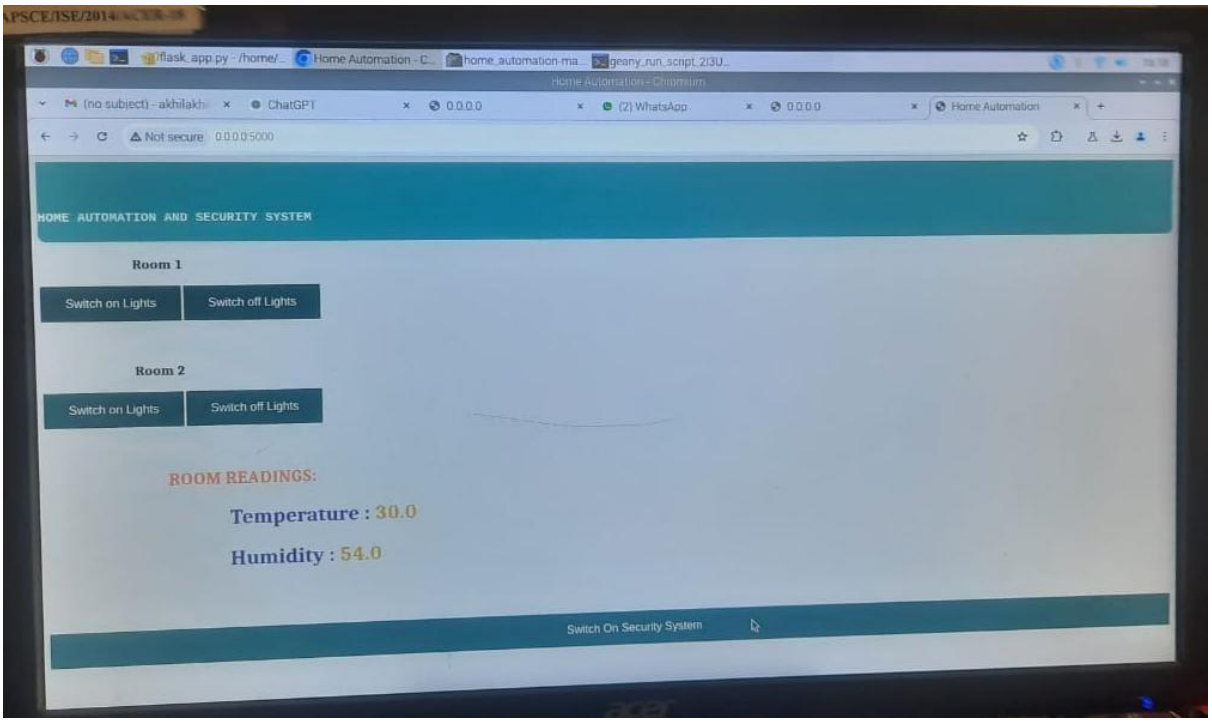
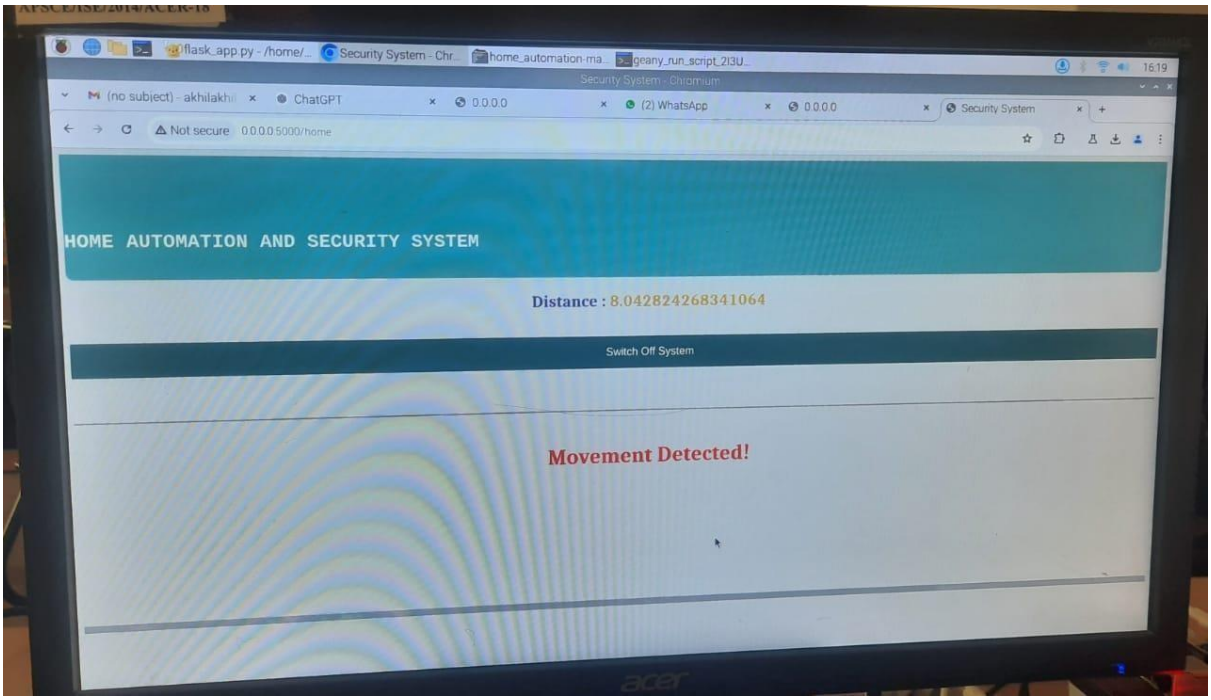


Fig:4.2


Security System - Chromium
Security System
Not secure 0.0.0.0:5000/home
HOME AUTOMATION AND SECURITY SYSTEM
Distance : 8.042824268341064
Switch Off System
Movement Detected!

Fig;4.3

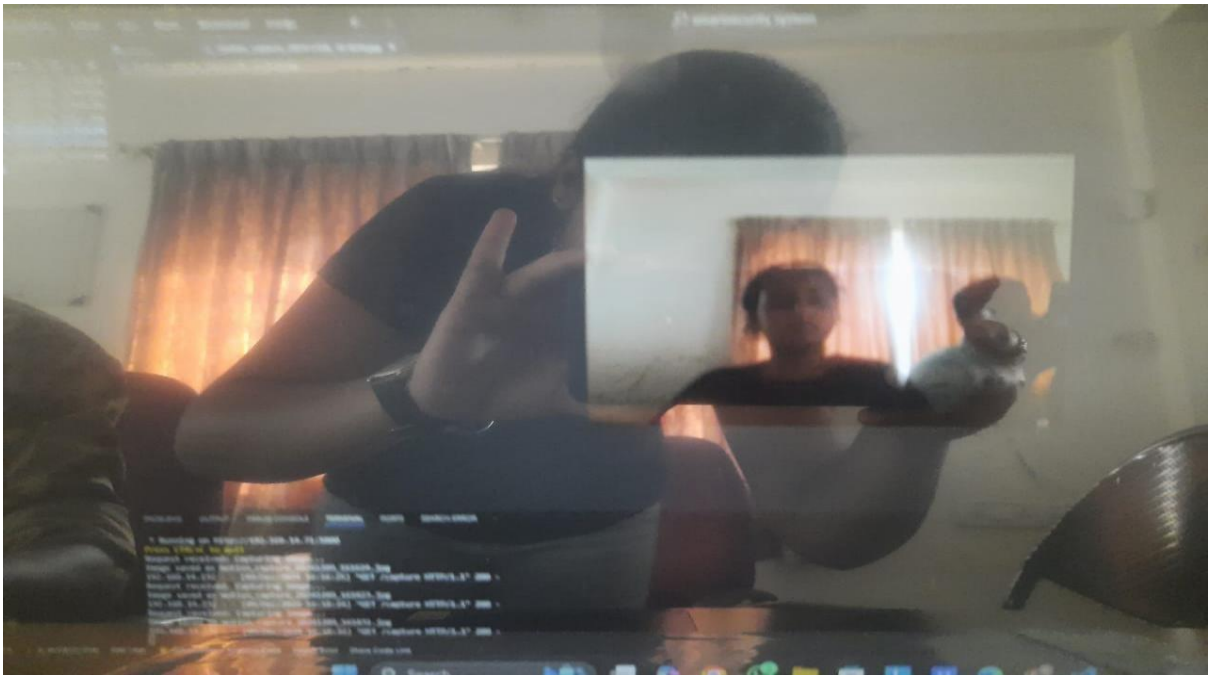


Fig:4.3