# Automated Room Conditioning

PRESENTED BY GROUP 5

# SENSORS/EQUIPMENTS TO BE USED

Temperature and Humidity Sensor

Digital Light Sensor

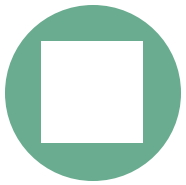
Ultrasonic Sensor

Air Quality Sensor

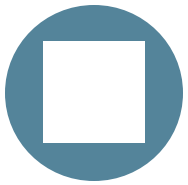
Infrared (IR) sensor

Web-cam

LEDs



DC Fan



LCD Display

# FEATURES OF THE PROJECT

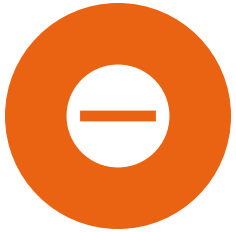
**Air Quality Sensor** is used to detect any harmful gases present inside the room. If that happens, a message is sent to the owner to open the windows/door of the room.

**Regulating AC** – Cooling is adjusted via sensing temperature and humidity of the room.

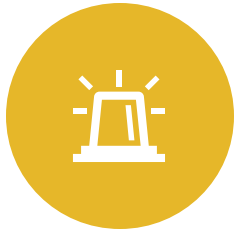
**Regulating Fans** - Controlling the speed of a DC fan present based on temperature of the room.

**Regulating Lights** – Via sensing the natural light with the help of digital light sensor, we turn on/off the lights present in the room.

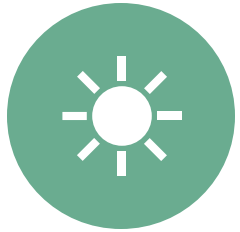
# FEATURES OF THE PROJECT



IF THE DOOR OF THE ROOM IS OPEN AND THE AC IS SWITCHED ON, THEN A MESSAGE IS SENT VIA MQTT REGARDING THE COOLING EFFICIENCY.

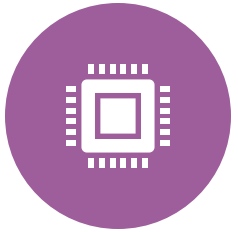


AN ALARM WILL SET ON IF GAS LEAKAGE IS DETECTED VIA THE AIR QUALITY SENSOR.

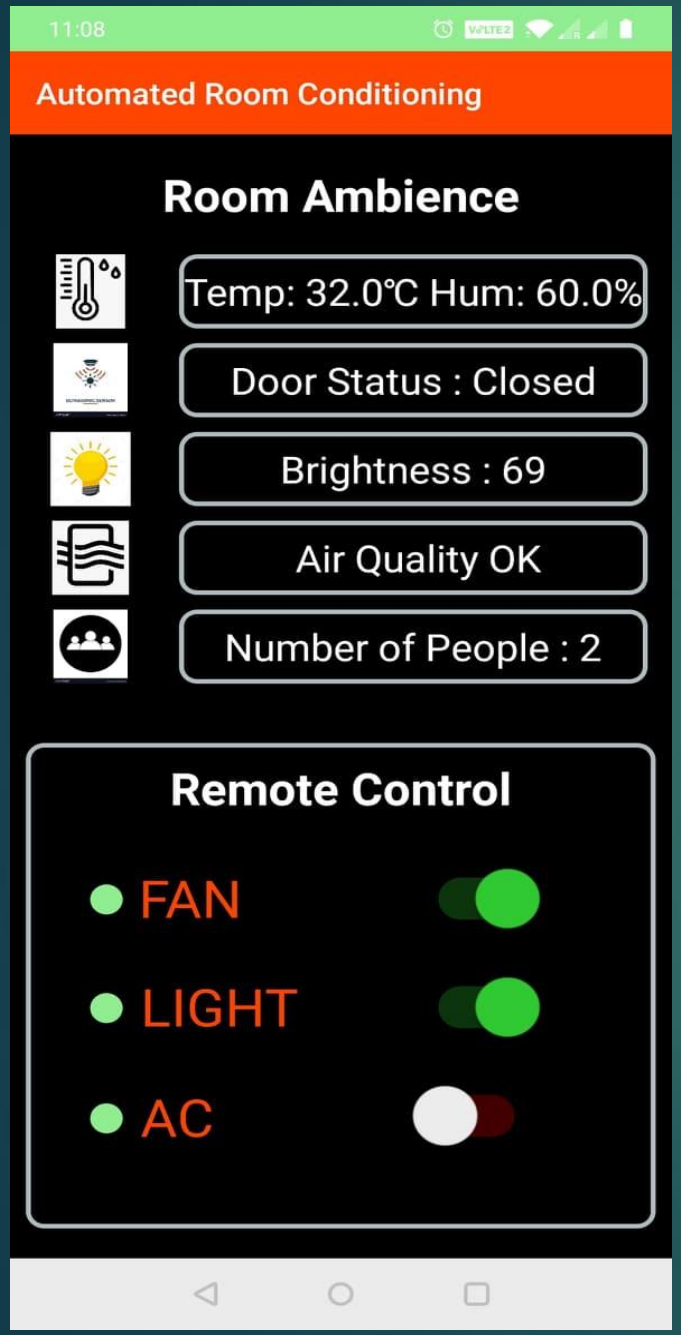


INFRARED SENSOR (IR) IS USED FOR REGULATING THE TEMPERATURE OF THE AC BASED ON THE PRESENT CONDITION OF THE ROOM.THIS IR IS USER PROGRAMMABLE AND CAN ALSO BE USED TO CONTROL ANY IR REMOTE BASED DEVICE SUCH AS PROJECTORS,MUSIC SYSTEMS ETC

IF NO ONE IS PRESENT IN THE ROOM FOR MORE THAN 5 MINUTES, THEN THE POWER SUPPLY OF ALL THE APPLIANCES(AC, LIGHTS, FANS ETC) WILL BE TURNED OFF.



WEB-CAM IS USED TO DETECT NUMBER OF PEOPLE IN THE ROOM VIA IMAGE RECOGNITION. SINCE THE PROCESSING SPEED OF RASPBERRY PI IS QUITE SLOW, THE INPUT IS SENT TO A SERVER VIA MQTT FOR PROCESSING AND THE RESULT IS SENT BACK TO THE RASPBERRY PI FOR FURTHER ACTIONS.




# FEATURES OF THE PROJECT

The entire regulating of the appliances can be controlled by a mobile-Application.

The application displays the current status of the room along with the feature of working as a remote.

The application works both as a publisher and a client for MQTT purposes.

Push-up notifications are received on occurrence of any major/emergency event like inefficient cooling, high pollution etc.

An acknowledgement is received from our product for any signal sent by the user via the application.