SMART FAN WITH SECURITY

Objective

- We aim to create a Smart Ceiling/Pedestal Fan which will sense the temperature of its surroundings and automatically activate on hitting threshold temperature and run until the surrounding is cooled down to a set temperature with secure access to change settings of the system.

- We also aim to integrate a Burglar Security System.

Design Process

01 Temperature Sensing to automatically control the fan

02 16 x 2 LCD display to display the current temperature of the room

03 AC or DC Power Supply will be used to run the whole system.

Design Process

04 Security Mode working as Burglar Security System using PIR Sensor for Motion Sensing

05 Arduino Microcontroller will be used to operate all the components

Tools Required

Hardware:

01 Arduino

02 Fan/Motor

03 Buzzer

04 PIR Sensor

05 Temperature Sensor

06 16 X 2 LCD Display

07 Power Supply

08 LED

09 Keypad 4x4

10 L293D

Tools Required

Software:

01

Arduino IDE

02

TinkerCAD

Block Diagram

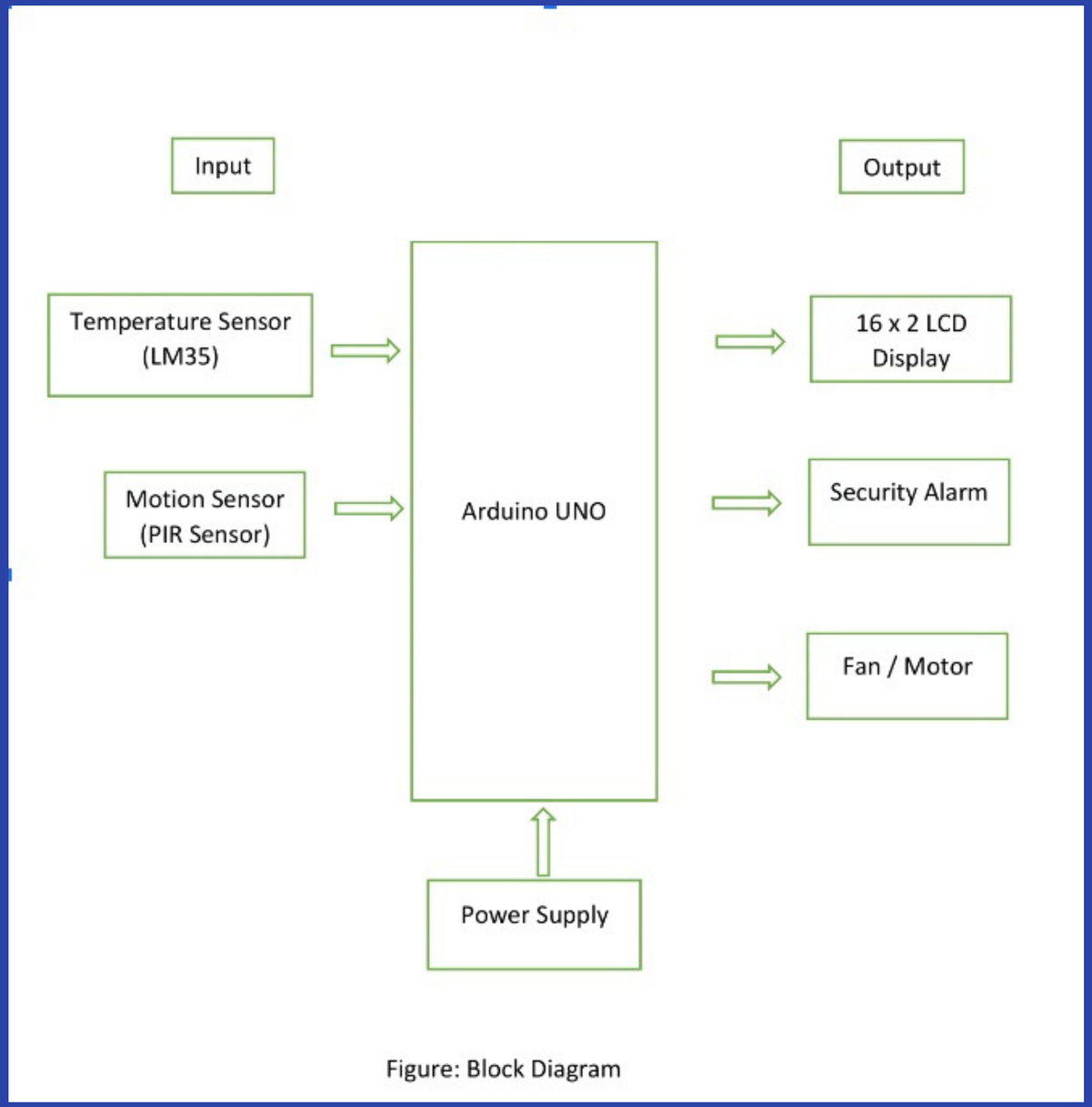
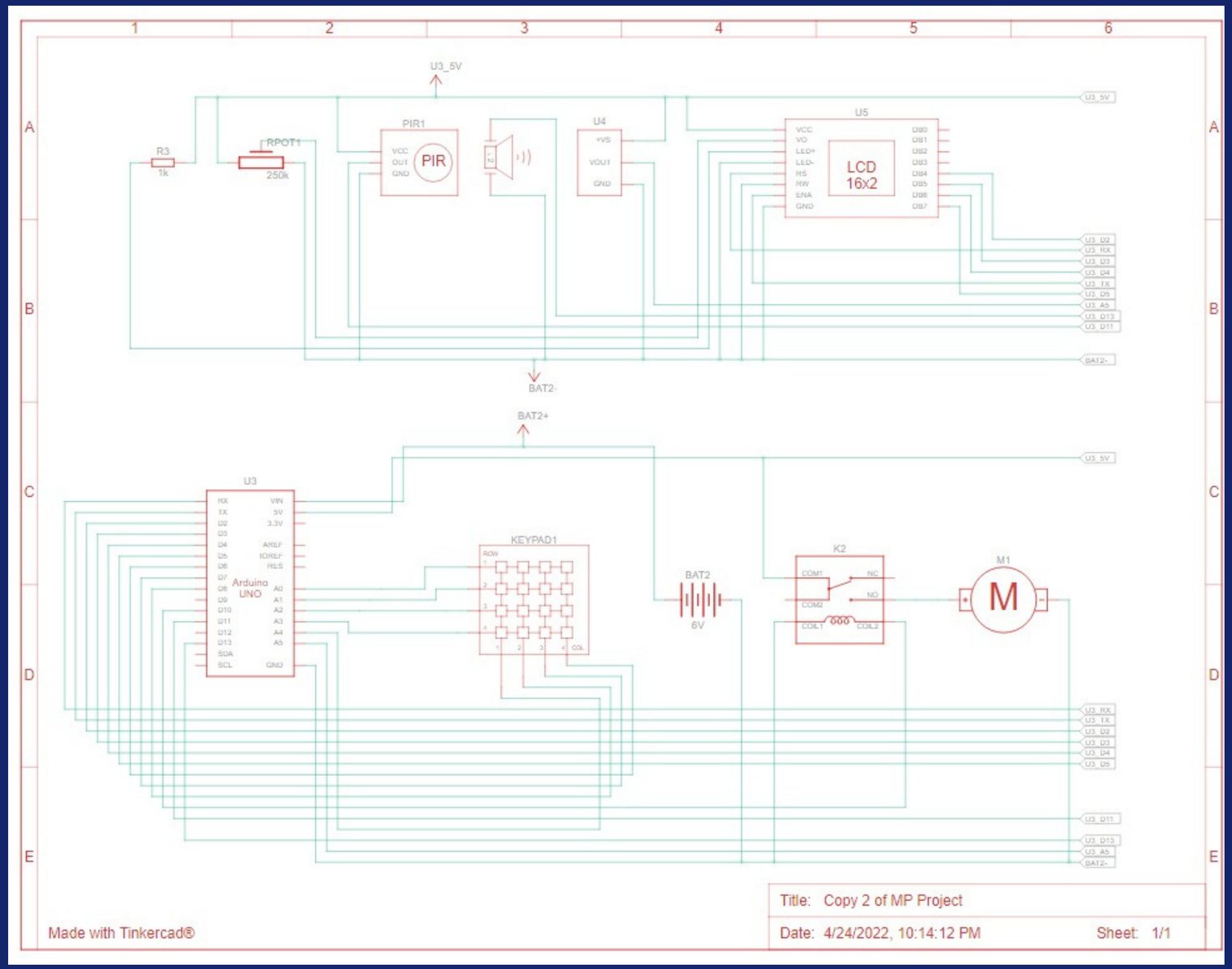
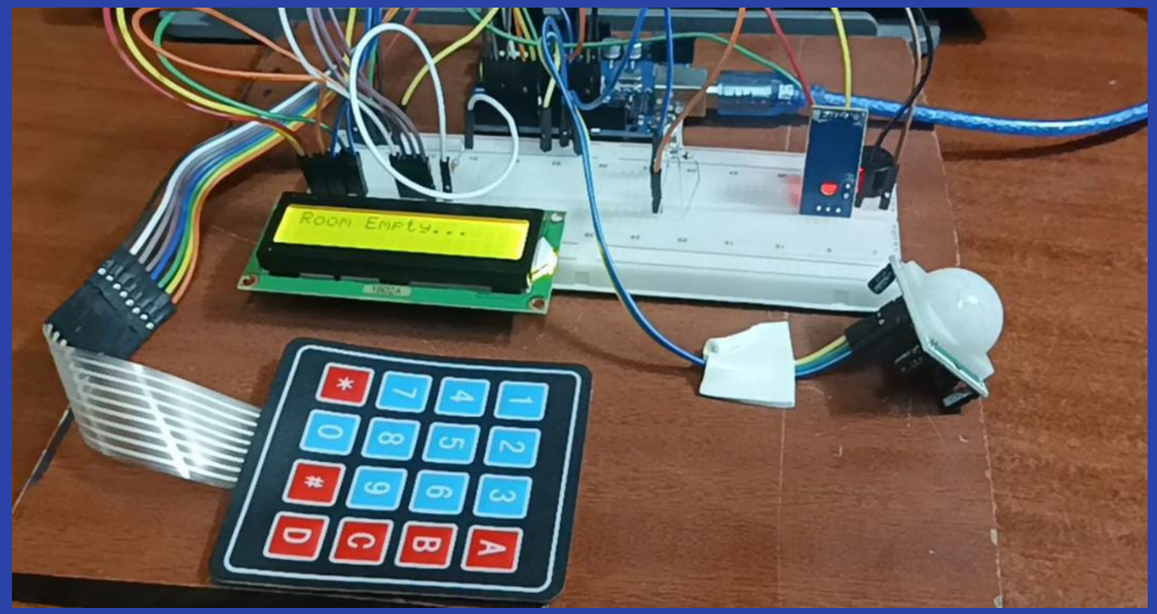


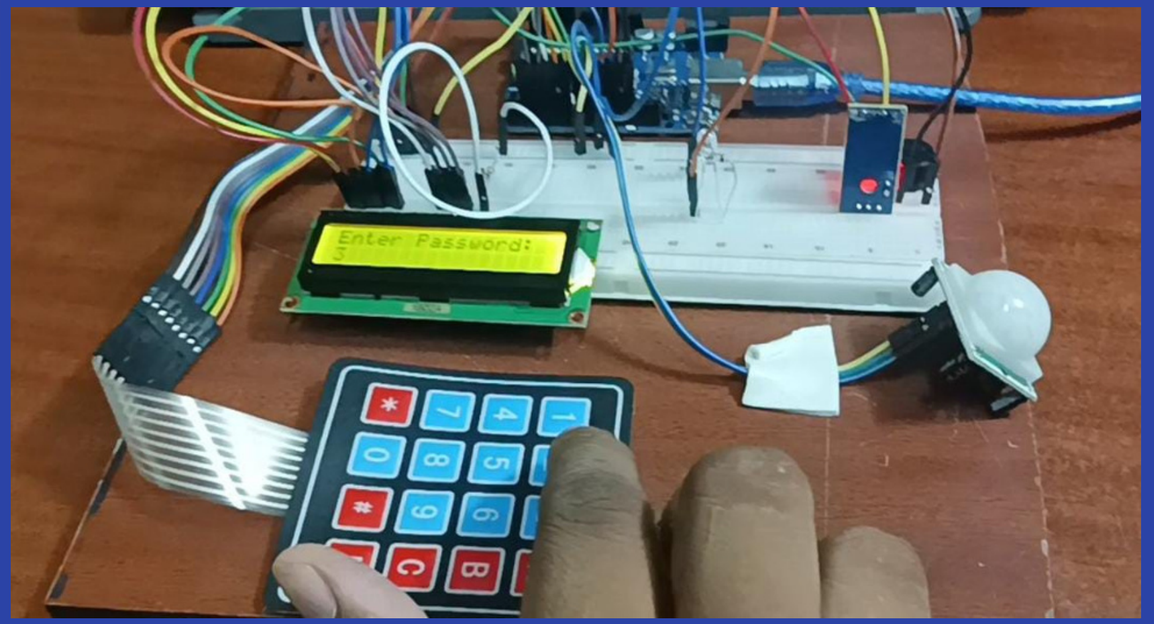
Figure: Block Diagram

Schematic Diagram

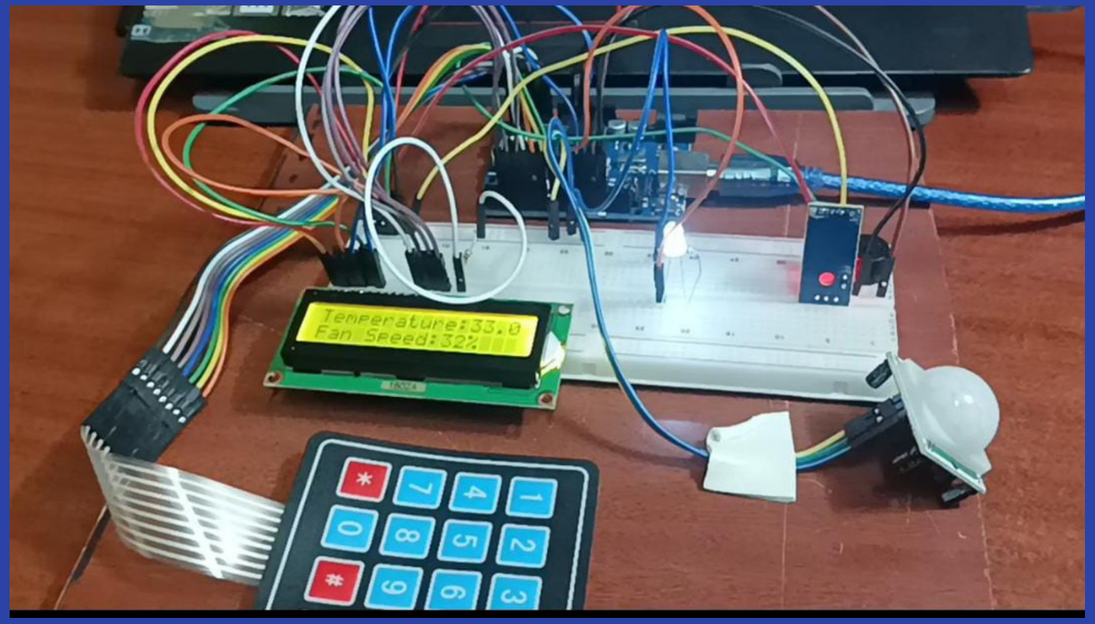


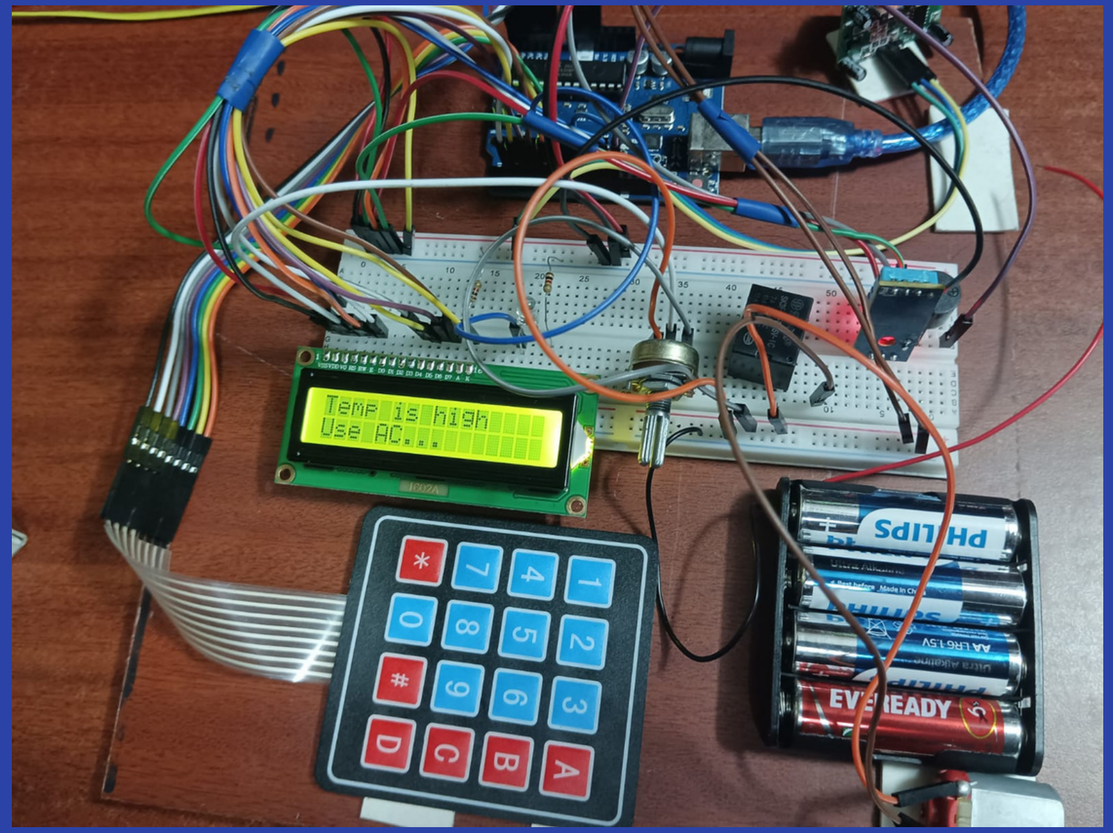
Implementation-Hardware



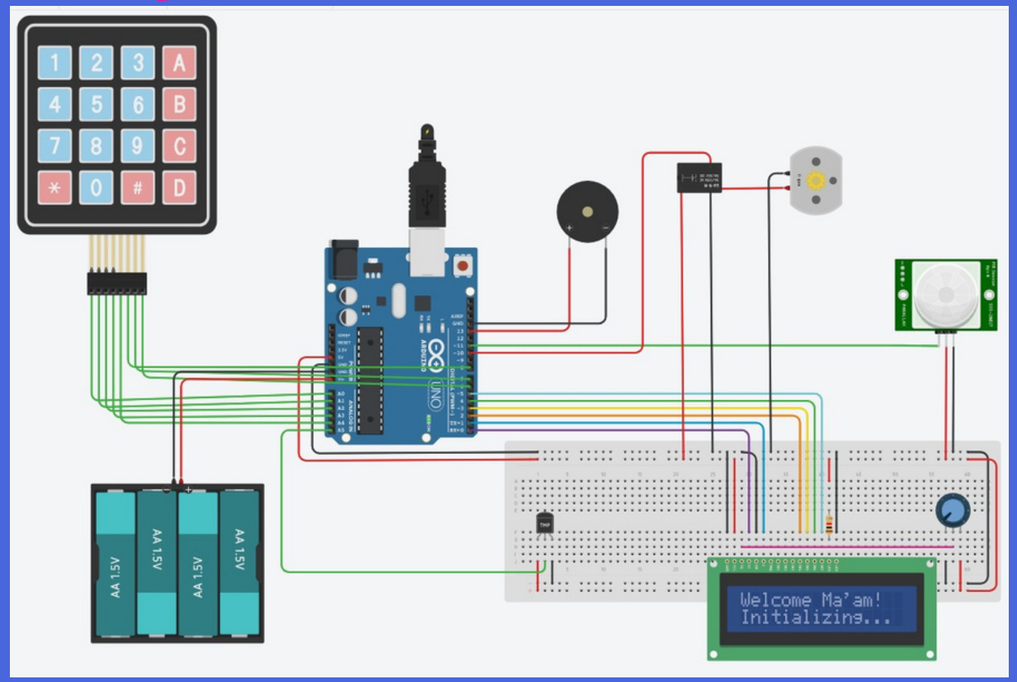


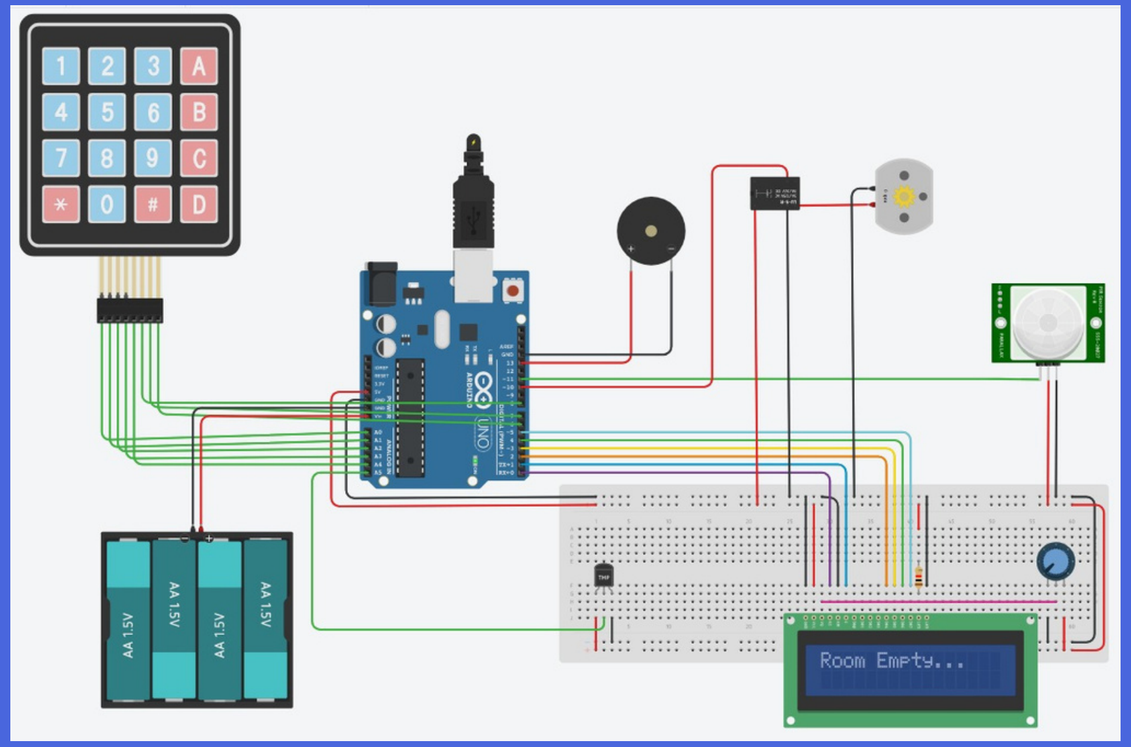
Implementation-Hardware



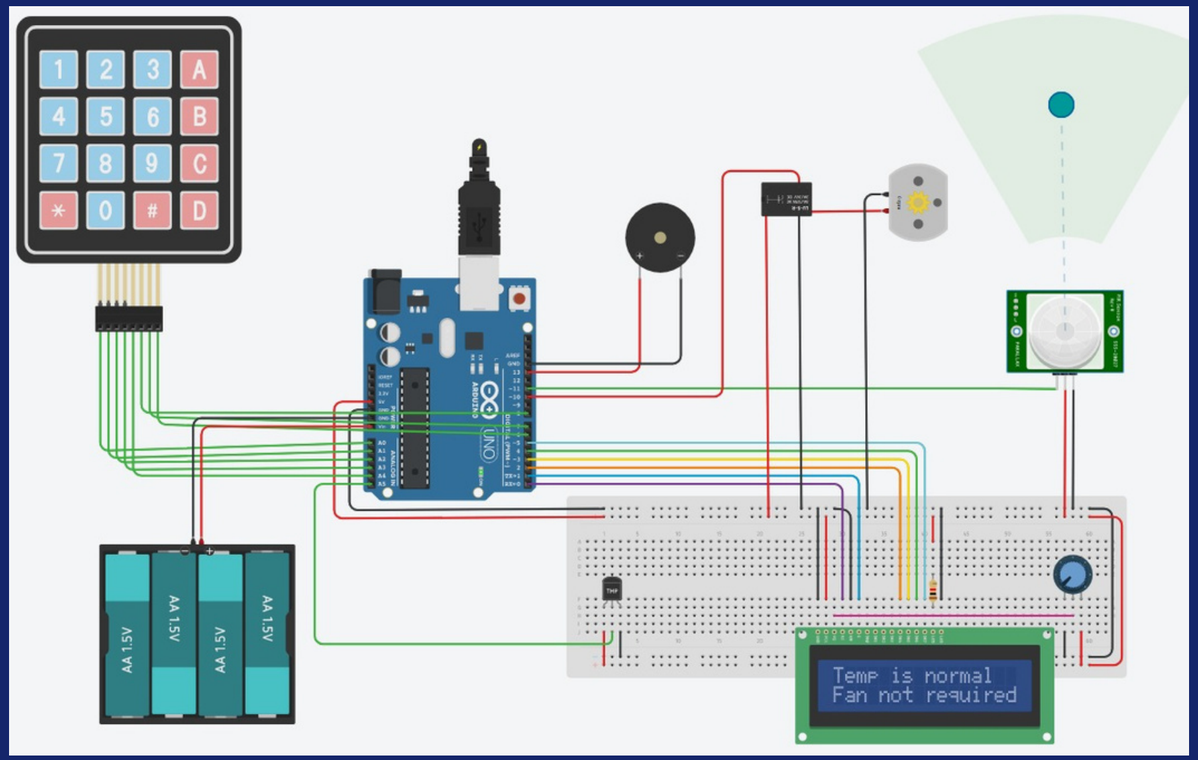


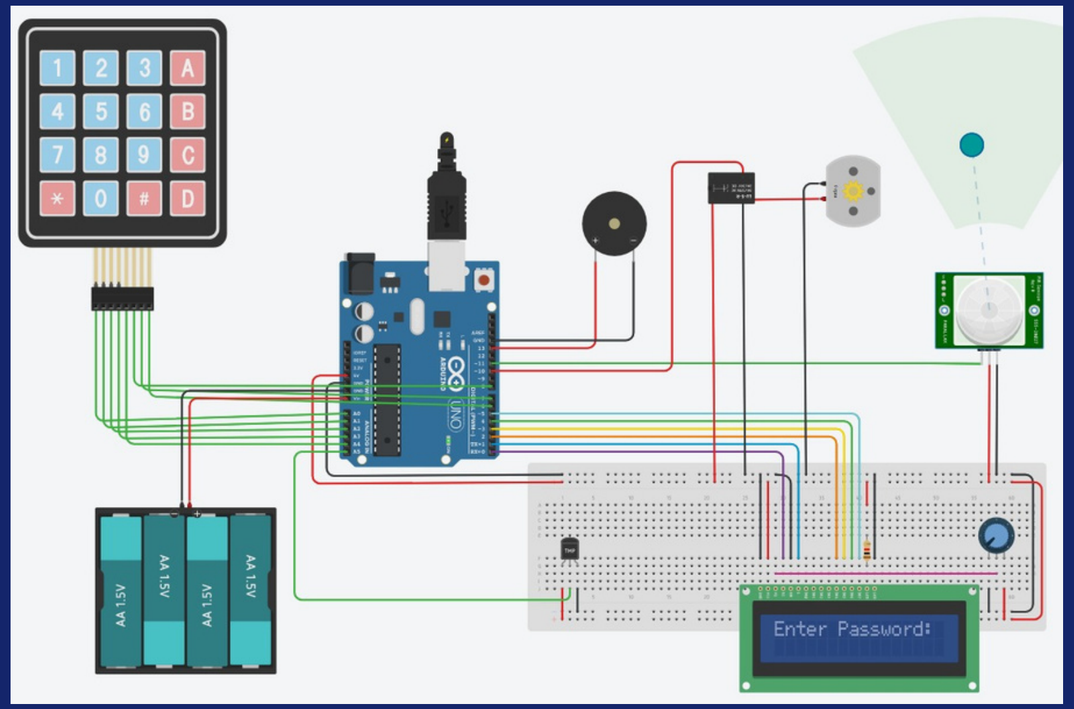
Implementation-Software



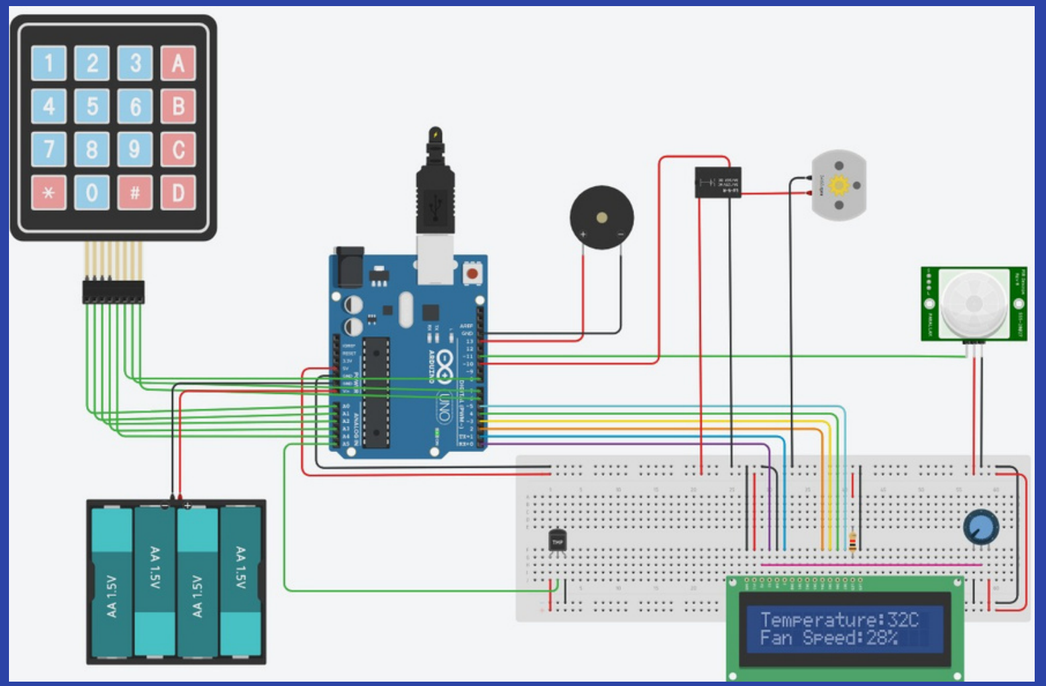


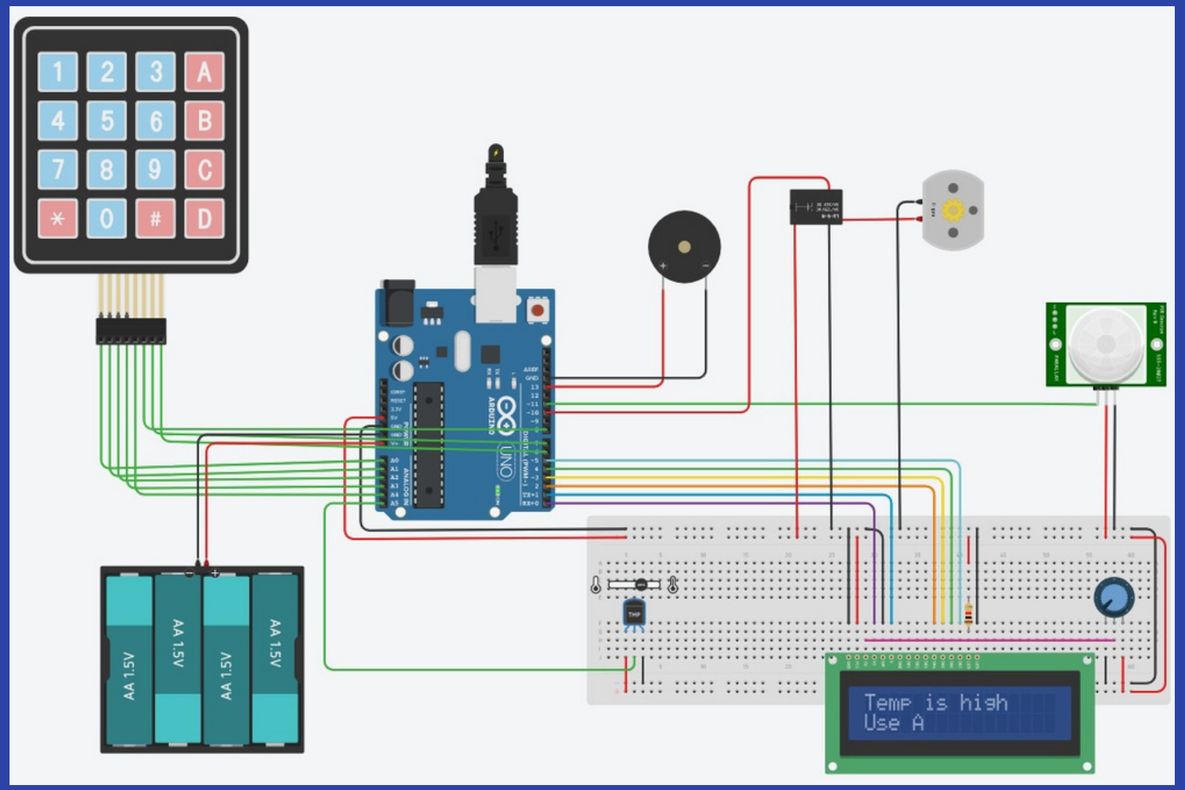
Implementation-Software



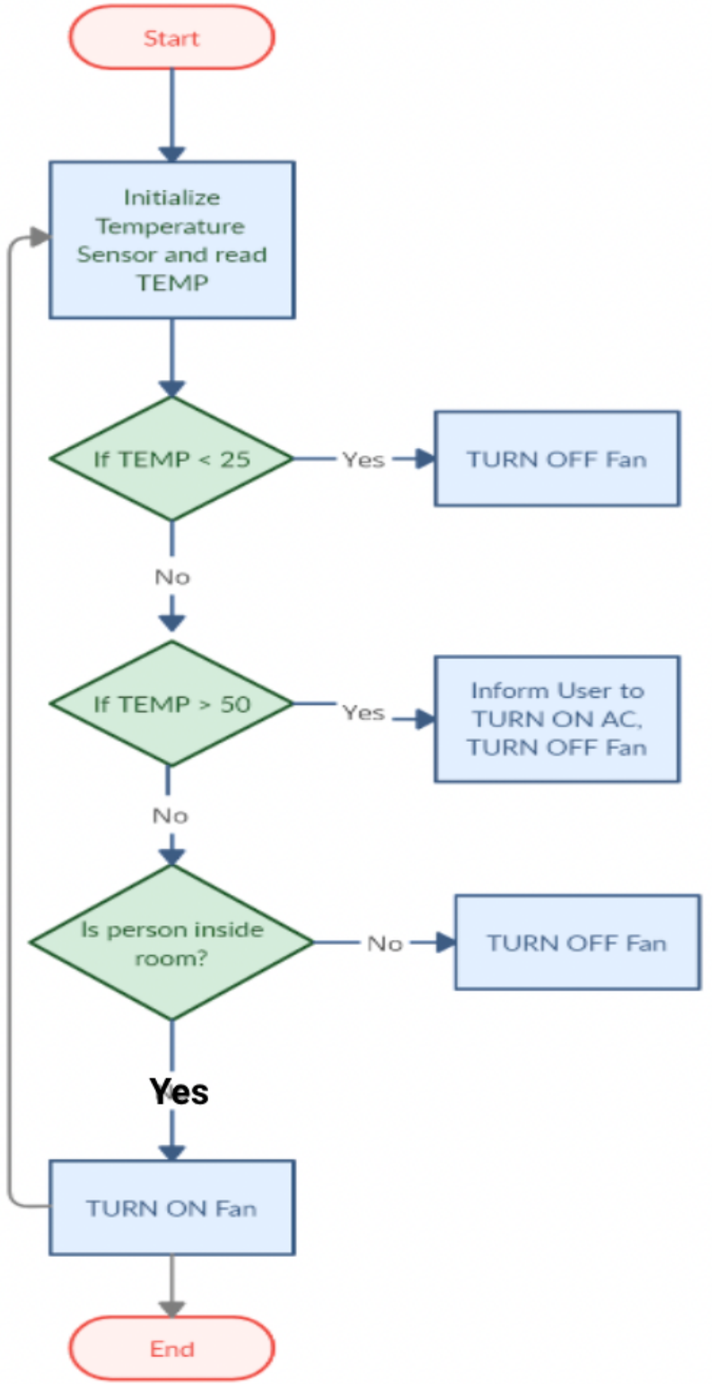


Implementation-Software





Algorithm


Start
Initialize Temperature Sensor and read TEMP
If TEMP < 25
Yes
TURN OFF Fan
No
If TEMP > 50
Yes
Inform User to TURN ON AC, TURN OFF Fan
No
Is person inside room?
No
TURN OFF Fan
Yes
TURN ON Fan
End

Cost Analysis

Component	Price
Arduino Uno R3	950
Breadboard large and jumper wires	150
PIR Sensor	150
FAN(Motor+Blade)	100
4x4 Keypad	100

In-House	Fee
16x2 LCD Display	250
DHT 11	180
Resistor	5
Buzzer	20
Battery	150

Grand total: **2055**

Application Domains

- Temperature Controlled Fan can be used to control the temperature of rooms
- The circuit may be used to minimise heat in CPUs.
- Can be used in scientific labs and research centre to control the temperature
- For security it can be implemented in banks and other cooperate offices
- Five star hotels can utilize this in rooms to make it more secure and luxurious
- It can also be employed in hospitals and ICU's for temperature controlling around patients.

THANK YOU!