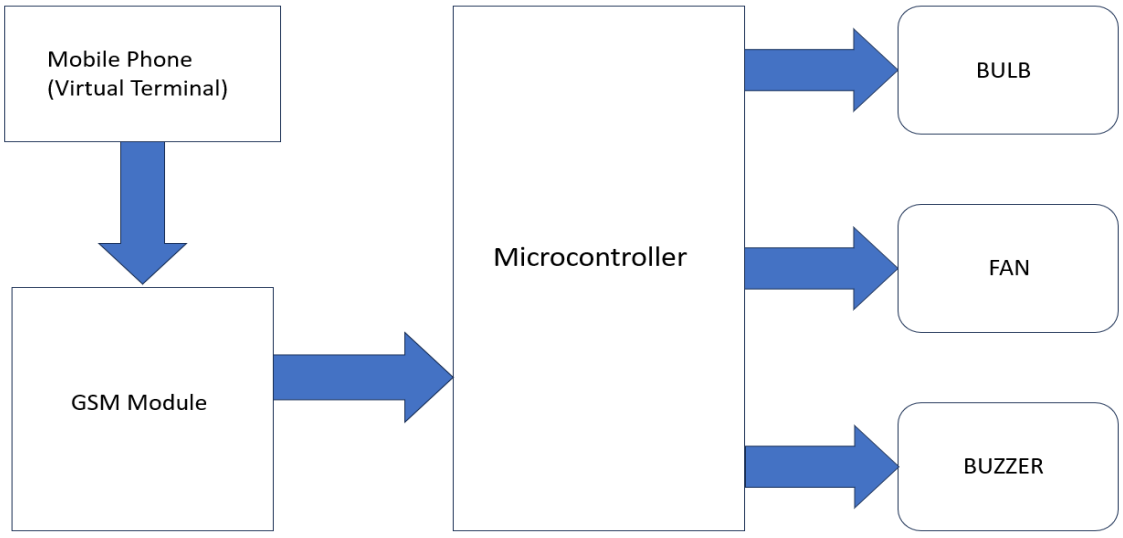
GSM BASED HOME AUTOMATION

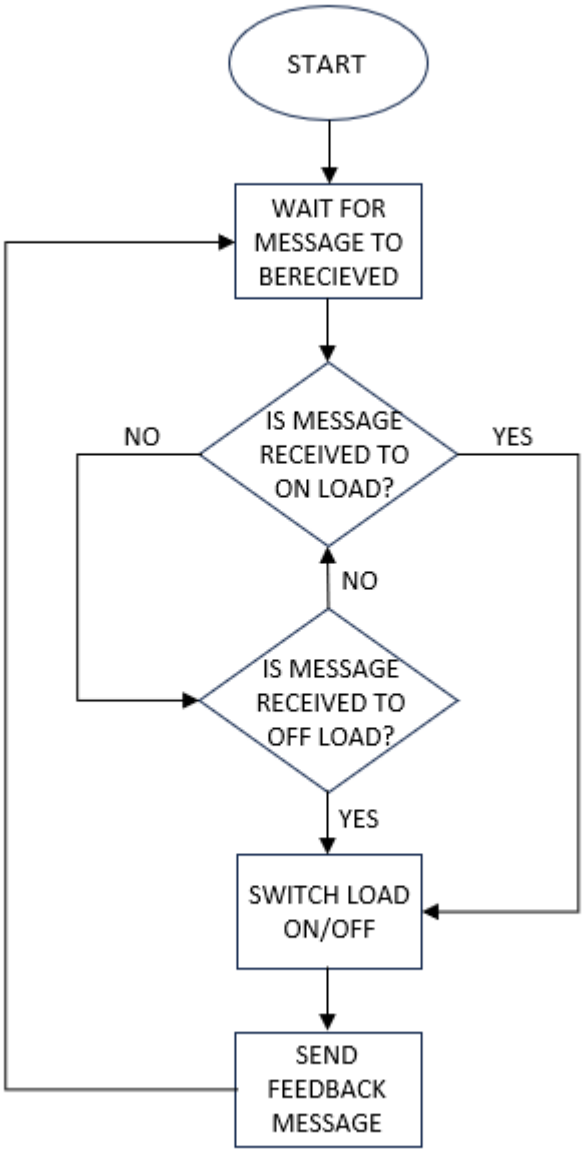
Description:

In this project, we will be using a GSM (Global System for Mobile Communication) module for home automation that is to control the home application such as bulb, fan, television, air conditioner and other devices with the help of microcontroller. Overall, it is GSM-based home automation involves using GSM technology to remotely control and manage household devices and systems. Through a GSM module and a mobile phone, homeowners can send commands to control various aspects of their home, such as lights, appliances, temperature, and security systems. The system utilizes sensors and actuators, allowing for automation and real-time monitoring. Users can interact with the system through SMS commands or a dedicated mobile application, providing convenience and flexibility in managing their home environment even when they are away.

Block diagram:



Flow Chart:



Source Code:

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(2, 3, 4, 5, 6,7);
```

```
const int fan_pin = 8;
const int bulb_pin = 9;
const int buzzer = 10;
String gsm_read = "";
void RecieveMessage();

void setup()
{
  Serial.begin(9600);
  pinMode(fan_pin, OUTPUT);
  pinMode(bulb_pin, OUTPUT);
  pinMode(buzzer, OUTPUT);
  Serial.println("In Setup ...");
  delay(100);
  lcd.begin(16, 2);
  lcd.print("GSM Base");
  lcd.setCursor(0,2);
  lcd.print("Home Automation");
  delay(1000);
  RecieveMessage();
}

void loop()
{
```

```
lcd.clear();
lcd.print("Waiting for ");
lcd.setCursor(0,2);
lcd.print("command");
delay(100);
 while (Serial.available() > 0)
 {
  gsm_read= Serial.readString();
  gsm_read.remove(gsm_read.length()-1);
  if(gsm_read == "FAN_ON")
  {
     lcd.clear();
     lcd.print("motor On");
     delay(100);
      digitalWrite(fan_pin, HIGH);
     delay(100);
  }
  else if(gsm_read == "FAN_OFF")
  {
     lcd.clear();
     lcd.print("motor OFF");
     delay(100);
     digitalWrite(fan_pin, LOW);
     delay(100);
```

```
}
else if(gsm_read == "BULB_ON")
{
   lcd.clear();
   lcd.print("BULB ON");
   delay(100);
   digitalWrite(bulb_pin, HIGH);
   delay(100);
}
else if(gsm_read == "BULB_OFF")
{
   lcd.clear();
   lcd.print("BULB OFF");
   delay(100);
   digitalWrite(bulb_pin, LOW);
   delay(100);
}
else
{
  lcd.clear();
  lcd.print("wrong password");
  delay(100);
  digitalWrite(buzzer, HIGH);
  delay(500);
```

```
        digitalWrite(buzzer, LOW);
        delay(100);
      }
    }
}
```

```
void RecieveMessage()
{
  Serial.println("AT+CMGF=1");
  delay(1000);
  Serial.println("AT+CNMI = 2,2,0,0,0");
  delay(1000);
}
```

Schematic: