

## IBM ASSIGNMENT -1

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### Smart Home Automation System Using IoT:

Code:

```
#include <LiquidCrystal.h>

const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

const int PIR = 8;
const int bulb = 7;
const int tempPin = A1;
const int fan = 10;
int temp;
int tempMin = 30;
int tempMax = 60;
int fanSpeed;
int fanLCD;
int PIRState = 0;

void setup() {
  pinMode(PIR, INPUT);
  pinMode(bulb, OUTPUT);
  pinMode(fan, OUTPUT);
  pinMode(tempPin, INPUT);
  lcd.begin(16, 2);
}

void loop() {
  PIRState = digitalRead(PIR);
```

```
if (PIRState == HIGH)
{
    digitalWrite(bulb, HIGH);
}
```

```
if (PIRState == LOW)
{
    digitalWrite(bulb, LOW);
}
```

```
if
(temp = readTemp());
```

```
if (temp < tempMin)
{
    fanSpeed = 0;
    analogWrite(fan, fanSpeed);
    fanLCD = 0;
    digitalWrite(fan, LOW);
}
```

```
if ((temp >= tempMin) && (temp <= tempMax))
{
    fanSpeed = temp;
    fanSpeed = 1.5 * fanSpeed;
    fanLCD = map(temp, tempMin, tempMax, 0, 100);
    analogWrite(fan, fanSpeed);
}
```

```
lcd.print("TEMP: ");
lcd.print(temp);
lcd.print("C ");
lcd.setCursor(0, 0);
```

```
delay(200);  
}
```

```
int readTemp() {  
    temp = analogRead(tempPin);  
    return temp * 0.48828125;  
}
```