ASSIGNMENT

1.PROBLEM STATEMENT: Develop the code in Arduino to interface an LM35 temperature sensor (assume the sensor is connected to Arduino analog pin a0)with an Arduino uno and control the board LED based on temperature .

```
int ledPin = 13;
int blinkLow = 250;
int blinkHigh = 500;

unsigned long prevLoopCount = 0;
int ledState = LOW;

void setup() {
  pinMode(ledPin, OUTPUT);
  Serial.begin(9600);
}

void loop()
{
  int val = analogRead(A0);
  float voltage = val * (5.0 / 1023.0);
  float celsius = voltage * 100.0;

  Serial.print("Temperature (Celsius): ");
  Serial.println(celsius);

  unsigned long currentLoopCount = loopIterations();

  if (celsius < 30.0)
{
    blinkLED(blinkLow, currentLoopCount);
```

```
  }
 else if (celsius > 30.0)
{
    blinkLED(blinkHigh, currentLoopCount);
  }
}

void blinkLED(int duration, unsigned long currentLoopCount)
{
  if (currentLoopCount - prevLoopCount >= duration)
 {
    prevLoopCount = currentLoopCount;
    ledState = !ledState;
    digitalWrite(ledPin, ledState);
  }
}


unsigned long loopIterations() {                //delay
  for (int i = 0; i < 20000; ++i)
{
Return 0;
}
}
```