#include <Arduino.h>

// Define pin connections

const int LM35\_PIN = A0; // Analog pin A0 for LM35 temperature sensor

const int LED\_PIN =13; // Digital pin 13 onboard LED

int ledState = LOW;

void setup() {

pinMode(LED\_PIN, OUTPUT); // Define LED pin as output

Serial.begin(9600);

}

int readTemperature() {

int sensorValue = analogRead(LM35\_PIN); // Read the analog value from LM35 sensor

// Convert the analog value to temperature in celsius

float temperatureC = (sensorValue \* 5.0 / 1024.0) \* 100.0;

}

blinkLED\_250(){

// Simulate a delay

for (int i = 0; i <= 4000000; i++) {

asm("nop"); // Do nothingEach "nop" instruction takes 1 clock cycle.

// So, the total number of clock cycles for the loop = 4000000 cycles.

// Clock speed of Arduino Uno = 16 MHz = 16,000,000 cycles per second.

//Time taken to execute the loop = (Total number of clock cycles) / (Clock speed)

//= 4000000 cycles / 16,000,000 cycles per second ≈0.250seconds(250ms).

}

}

blinkLED\_500(){

// Simulate a delay

for (int i = 0; i <= 8000000; i++) {

asm("nop"); // Do nothingEach "nop" instruction takes 1 clock cycle.

// So, the total number of clock cycles for the loop = 8000000 cycles.

// Clock speed of Arduino Uno = 16 MHz = 16,000,000 cycles per second.

//Time taken to execute the loop = (Total number of clock cycles) / (Clock speed)

//= 8000000 cycles / 16,000,000 cycles per second ≈0.5seconds(500ms).

}

}

Void loop() {

Int temperature = readTemperature();

If (temperature <= 30) {

blinkLED\_250(); // Blink LED every 250 milliseconds

LED\_PIN=! LED\_PIN;

}

else {

blinkLED\_500(); // BLINK LED every 500 milliseconds

LED\_PIN=! LED\_PIN;

}

Serial.print("Temperature: ");

Serial.print(temp);

Serial.println("C");

}