Experiment 10

Write a program so it displays the temperature in Fahrenheit as well as the maximum and

minimum temperatures it has seen

#include <DHT.h>

const int dhtPin = 2;

const int dhtType = DHT11;  // DHT sensor type

DHT dht(dhtPin, dhtType);

float currentTemp;

float maxTemp = -100.0;  // Initialize to a very low value

float minTemp = 150.0;   // Initialize to a very high value

void setup() {

  Serial.begin(9600);

  dht.begin();

  Serial.println("DHT11 Temperature Monitor");

  Serial.println("------------------------");

  delay(1000);

}

void loop() {

  delay(2000);

  float tempC = dht.readTemperature();

  if (isnan(tempC)) {

    Serial.println("Failed to read from DHT sensor!");

    return;

  }

  currentTemp = (tempC \* 9.0 / 5.0) + 32.0;

  if (currentTemp > maxTemp) {

    maxTemp = currentTemp;

  }

  if (currentTemp < minTemp) {

    minTemp = currentTemp;

  }

  Serial.print("Current: ");

  Serial.print(currentTemp, 1);

  Serial.print(" F | Min: ");

  Serial.print(minTemp, 1);

  Serial.print(" F | Max: ");

  Serial.print(maxTemp, 1);

  Serial.println(" F");

}

A blue circuit board with wires

AI-generated content may be incorrect.

Experiment 11

Write a program, read the temperature sensor and send the values to the serial monitor on the computer

#include <DHT.h>

const int dhtPin = 2;

const int dhtType = DHT11;  // DHT sensor type

DHT dht(dhtPin, dhtType);

void setup() {

**Serial**.begin(9600);

  dht.begin();

**Serial**.println("DHT11 Temperature Monitor");

**Serial**.println("------------------------");

  delay(1000);

}

void loop() {

  delay(2000);

  float tempC = dht.readTemperature();

  if (isnan(tempC)) {

**Serial**.println("Failed to read from DHT sensor!");

    return;

  }

**Serial**.print("Current Temperature: ");

**Serial**.print(tempC, 1);

**Serial**.println(" C");

}

Experiment 12

Write a program to show the temperature and shows a graph of the recent measurements

#include <DHT.h>

const int dhtPin = 2;

const int dhtType = DHT11;  // DHT sensor type

DHT dht(dhtPin, dhtType);

void setup() {

**Serial**.begin(9600);

  dht.begin();

**Serial**.println("DHT11 Temperature Monitor");

**Serial**.println("------------------------");

  delay(1000);

}

void loop() {

  delay(2000);

  float tempC = dht.readTemperature();

  if (isnan(tempC)) {

**Serial**.println("Failed to read from DHT sensor!");

    return;

  }

**Serial**.println(tempC, 1);

}

Practical 13

Write a program using piezo element and use it to play a tune after someone knocks

const int knockSensorPin = A0;

const int buzzerPin = 8;

const int threshold = 100;

const int tuneNotes[] = {100, 200, 300, 400, 500};

const int noteCount = 5;

const int noteDuration = 150;

void setup() {

  pinMode(knockSensorPin, INPUT);

  pinMode(buzzerPin, OUTPUT);

  Serial.begin(9600);

}

void loop() {

  int sensorValue = analogRead(knockSensorPin);

  Serial.println(sensorValue);

  if (sensorValue >= threshold) {

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

      tone(buzzerPin, tuneNotes[i], noteDuration);

      delay(noteDuration + 30);

    }

    delay(500);

  }

  delay(10);

}

A circuit board with wires connected to it

AI-generated content may be incorrect.

A circuit board with wires and a microphone

AI-generated content may be incorrect.