**Project Report: Temperature and Humidity Monitoring System with Buzzer Alert**

1. Introduction:

The Temperature and Humidity Monitoring System with Buzzer Alert is a project designed to measure environmental conditions using a DHT11 sensor and provide real-time information on an LCD display. The system also includes a buzzer that activates when the temperature exceeds a predefined threshold.

2. Components Used:

- Arduino UNO

- DHT11 Temperature and Humidity Sensor

- Liquid Crystal Display (LCD)

- Buzzer

- Jumper Wires

3. Wiring Configuration:

- Connect the DHT11 sensor to pin A3 on the Arduino.

- Connect the LCD to the following pins: RS (5), EN (3), D4 (2), D5 (16), D6 (15), D7 (14).

- Connect the Buzzer to pin 4 on the Arduino.

- Ensure proper power and ground connections for all components.

4. Working Principle:

- The Arduino initializes the LCD and sets up the pins for the DHT11 sensor and the buzzer in the setup() function.

- In the loop() function, the DHT11 sensor is read, and the temperature and humidity values are stored.

- The LCD is updated to display the current temperature and humidity.

- If the temperature exceeds 20.0 degrees Celsius, the buzzer is activated; otherwise, it remains off.

- The system continuously loops, providing real-time monitoring of environmental conditions.\

**Arduino Code:**

#include <DFRobot\_DHT11.h>

#include <LiquidCrystal.h>

#define DHT11\_PIN A3

#define BUZZER\_PIN 4 // Adjust the pin number based on your buzzer configuration

const int rs = 5, en = 3, d4 = 2, d5 = 16, d6 = 15, d7 = 14;

LiquidCrystal lcd(rs, en, d4, d5, d6, d7); // Adjust the pin numbers based on your LCD configuration

DFRobot\_DHT11 DHT;

void setup() {

Serial.begin(9600);

lcd.begin(16, 2);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Temp:");

lcd.setCursor(0, 1);

lcd.print("Humi:");

pinMode(BUZZER\_PIN, OUTPUT);

}

void loop() {

DHT.read(DHT11\_PIN);

float temperature = DHT.temperature;

float humidity = DHT.humidity;

lcd.setCursor(6, 0);

lcd.print(temperature);

lcd.setCursor(6, 1);

lcd.print(humidity);

// Check if the temperature is greater than 20 degrees Celsius

if (temperature > 20.0) {

// Turn on the buzzer

digitalWrite(BUZZER\_PIN, HIGH);

} else {

// Turn off the buzzer

digitalWrite(BUZZER\_PIN, LOW);

}

delay(200);

}

7. Conclusion:

The Temperature and Humidity Monitoring System with Buzzer Alert provides a simple and effective solution for monitoring environmental conditions. This project is suitable for applications where maintaining specific temperature ranges is crucial, and the added buzzer alert enhances its usability. This project serves as a foundation for further developments in environmental monitoring and automation.