Name: Sreejith Sathyadevan

Roll No: 23

Advanced Embedded System Mini Project

Aim:

Using Arduino UNO, display temperature & humidity on LCD display which is being sensed by DHT11

Description:

- Arduino :

  Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board and a piece of software, or IDE runs on your computer, used to write and upload computer code to the physical board. Arduino UNO has 14 digital pins and 6 analog pins.

- LCD:

  A liquid-crystal display (LCD) is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals combined with polarizer's. Liquidcrystals do not emit light directly, instead using a backlight or reflector to produce images in colouror monochrome. It is 16*2 LCD display. That is it has 16 columns and 2 rows.

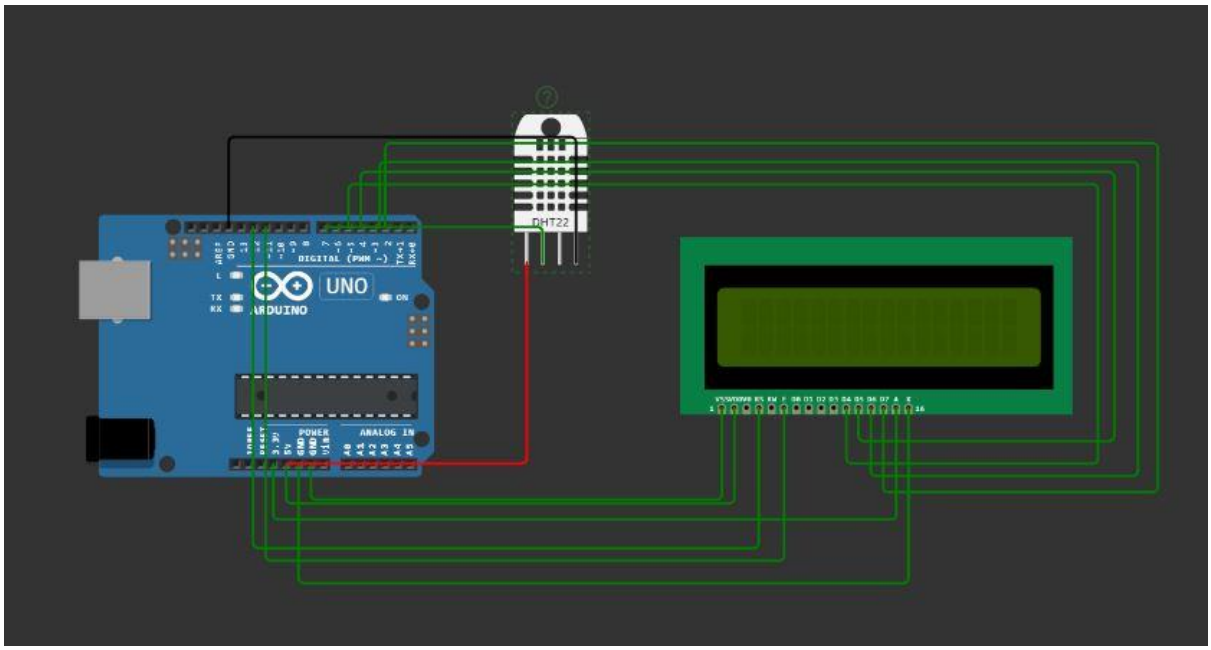
- DHT:

  The DHT-11 Digital Temperature And Humidity Sensor is a basic, ultra low-cost digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding air and spits out a digital signal on the data pin (no analog input pins needed).

Hardware Requirement:

- Arduino
- LCD
- Jump Wires
- DHT

Hardware Configurations:

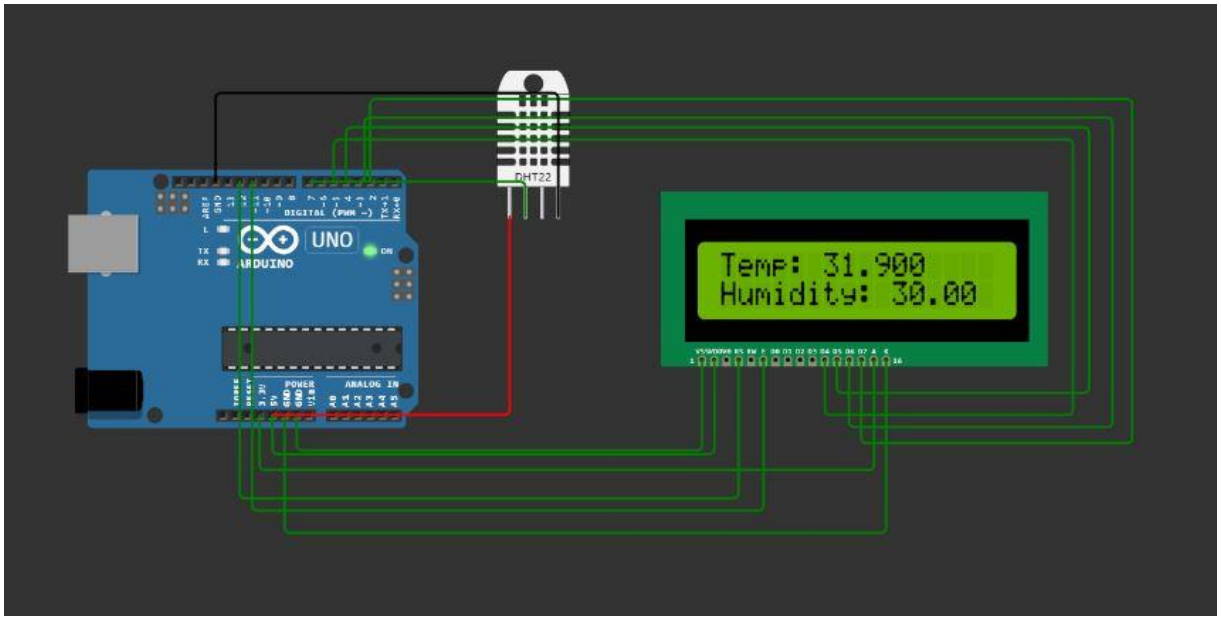


Code:

```
#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);

/* Temperature humidity sensor */
#include <DHT.h>
#define datapin 7     // Digital pin we're connected to
#define DHTTYPE DHT22
DHT dht(datapin, DHTTYPE);
void setup() {
```

```
  dht.begin();
  lcd.begin(16, 2);
}
void loop() {

  /* Find Temperature & Humidity */
  float air_temp = dht.readTemperature();
  float humidity = dht.readHumidity();

  /* Print Output on LCD Screen */
  lcd.setCursor(0,0);
  lcd.print(String("Temp: ") + String(air_temp));
  lcd.setCursor(0,1);
  lcd.print(String("Humidity: ") + String(humidity));

  delay(2000);

}
```

Output:



Simulator:

https://wokwi.com/projects/327299407011643987