AES MINI PROJECT

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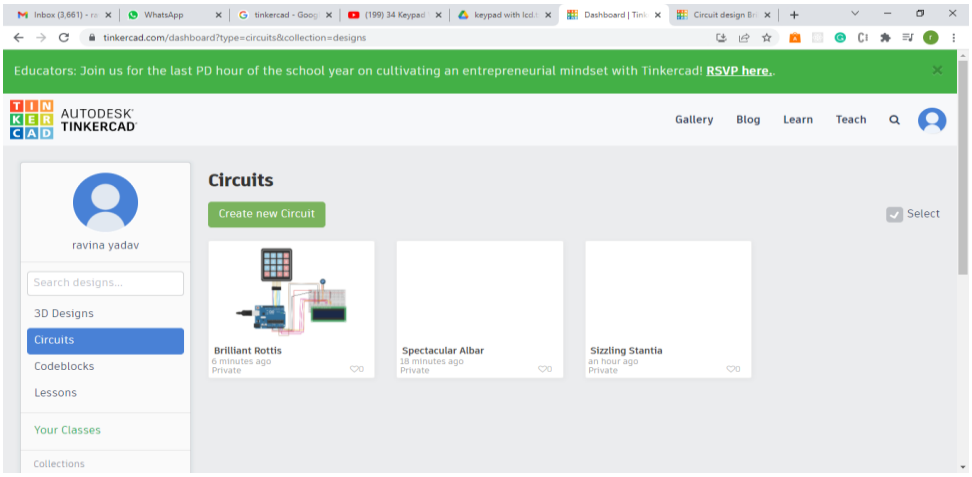
Roll No. : 32

Subject:Msc-C.S part-1

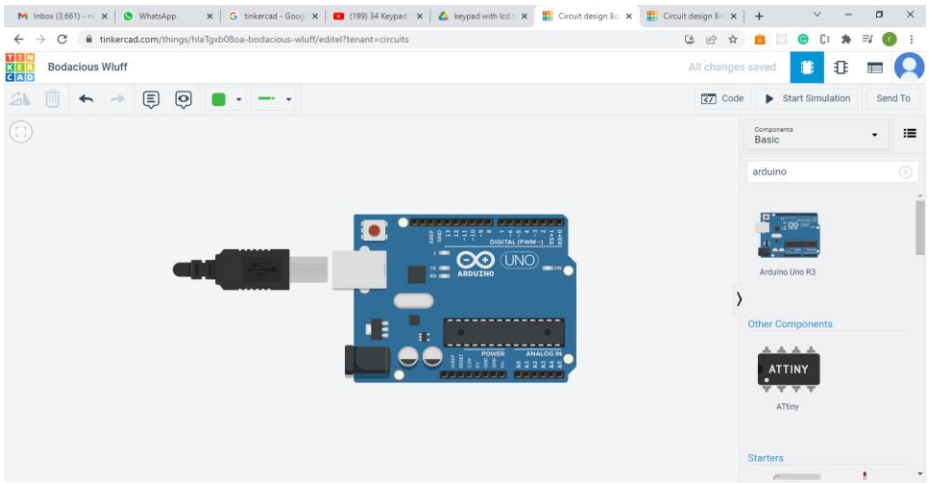
Aim: Using Arduino display temperature on LCD

Soln:

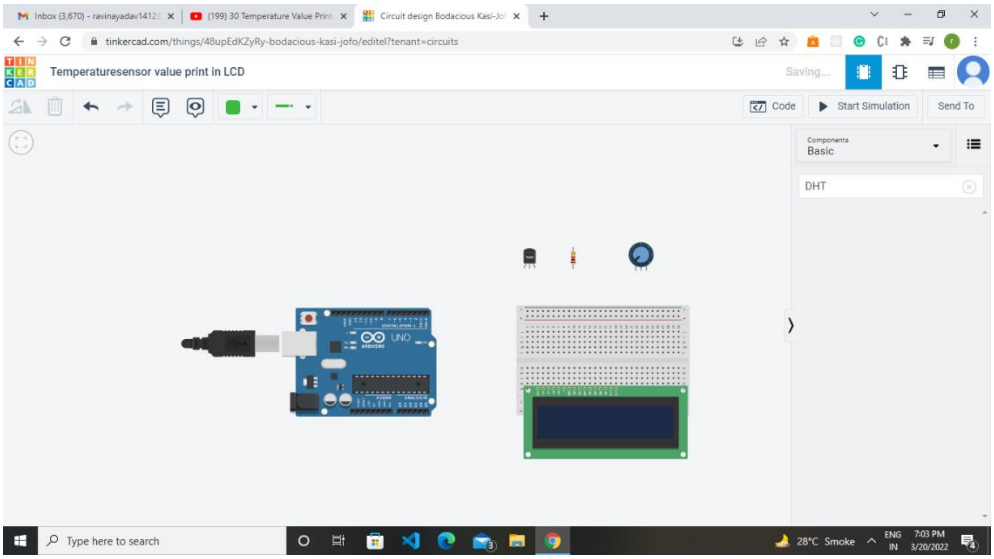
Step1: Open tinkercad and click on circuits and add new circuit.



Step2: Now click on search box and type name of the components needed, and drag the component on the screen.

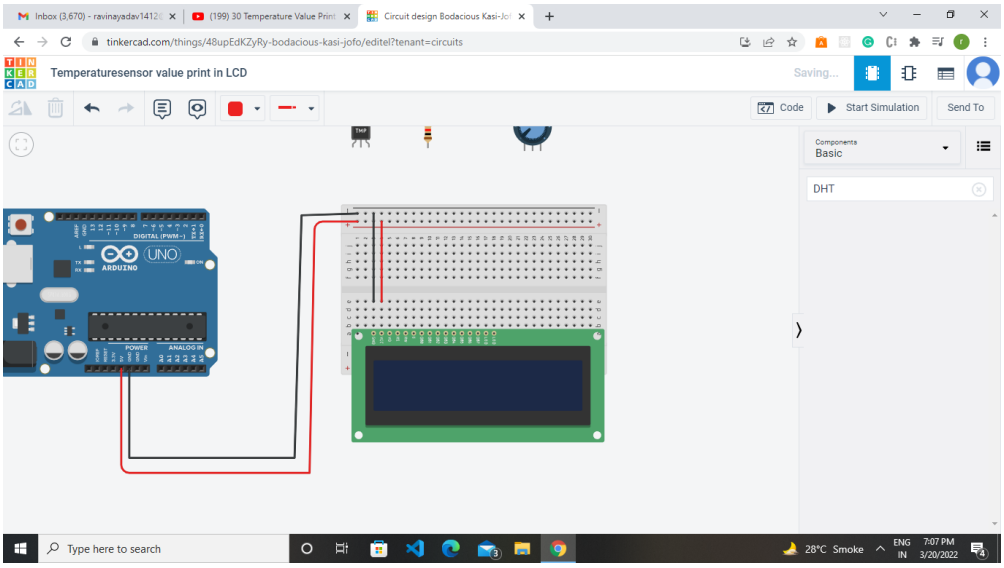


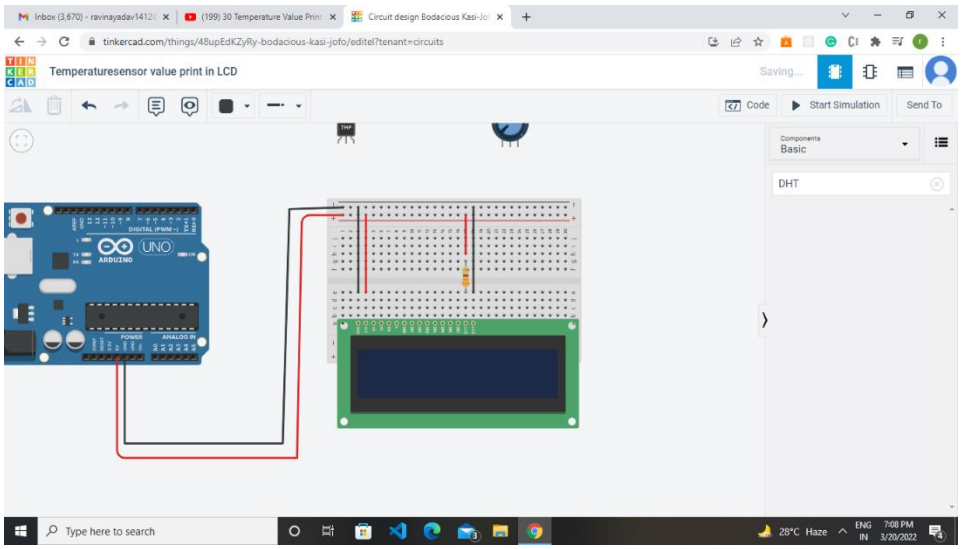
Step 3: Simillarly drag all the needed components on the screen like breadboard,LCD,potentiometer,resistor and temperature sensor like tmp36(DHT is not available tinkercad so we will use tmp36.)

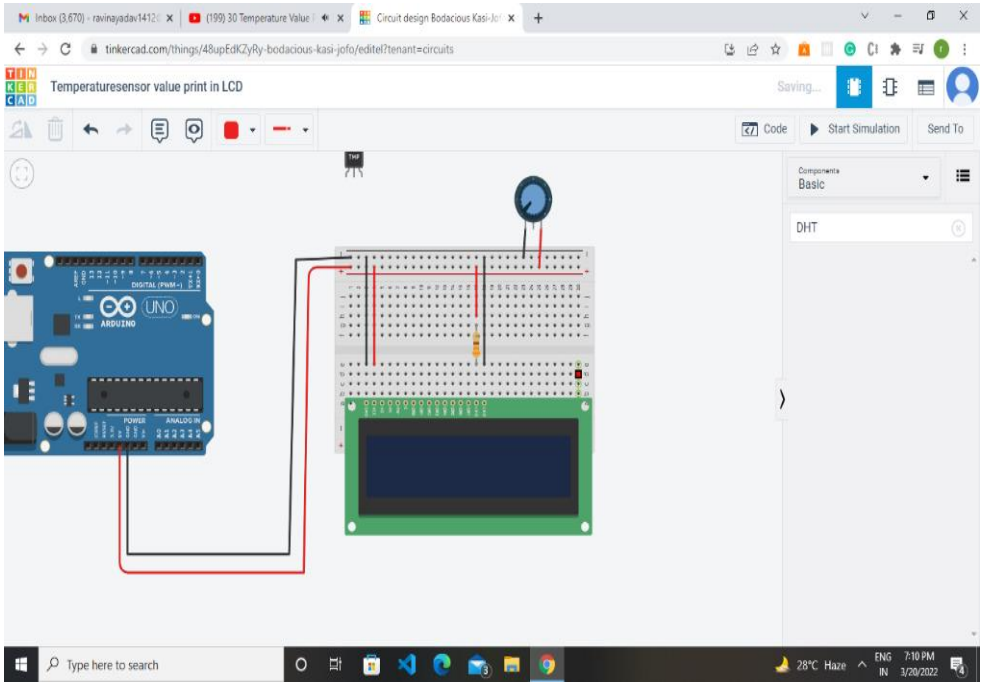


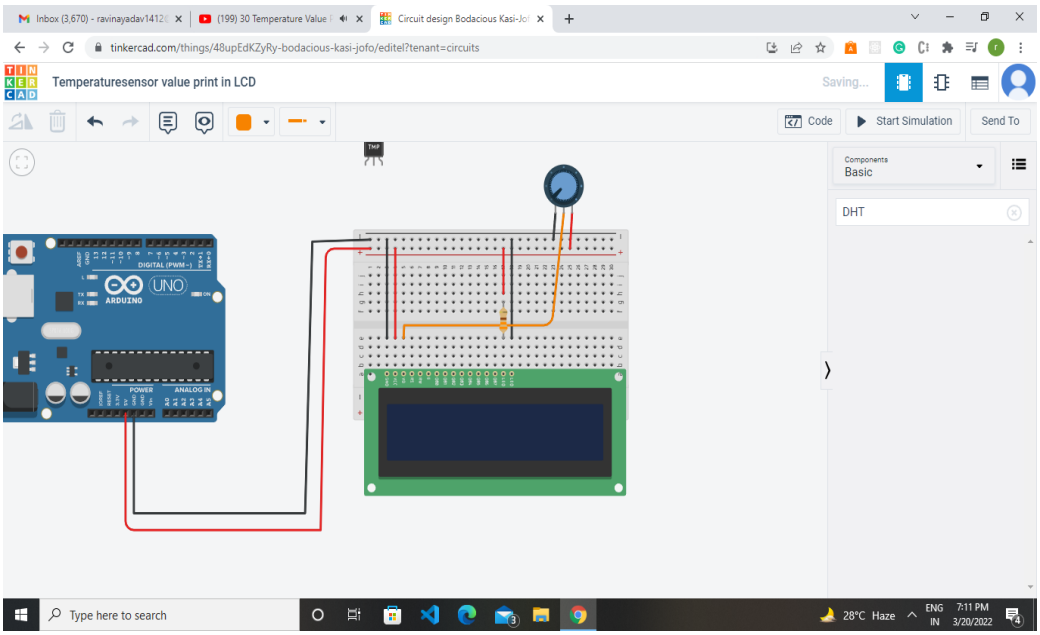
Step4:Now we need to make all the connections, ardunio LCD connection and tmp36 with ardunio.

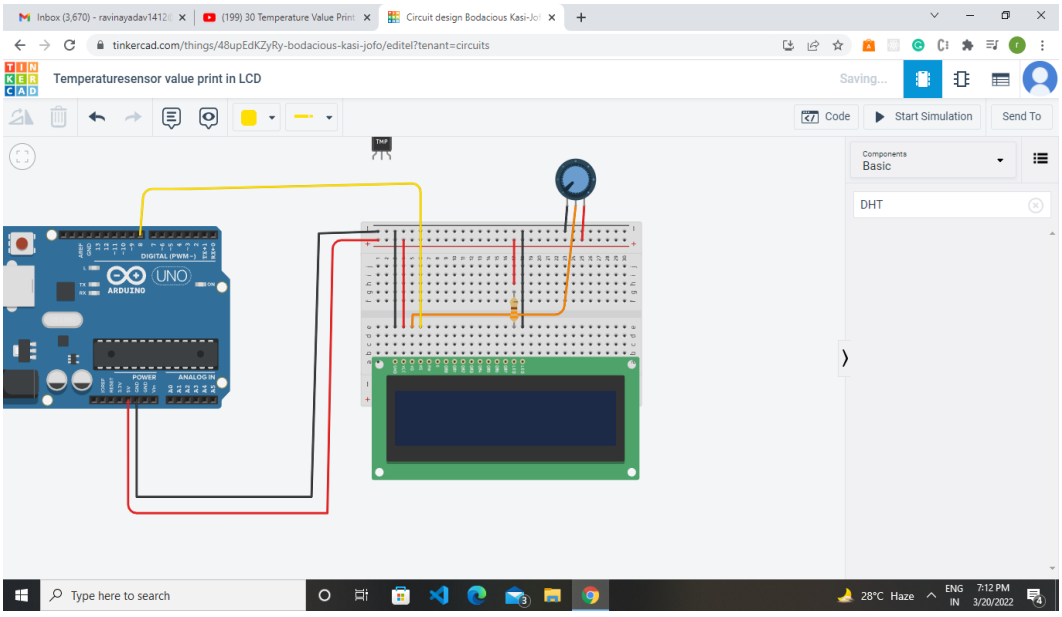
a. Connect **5v** of ardunio with **5v** of the LCD
b. Now we will connect negative pin (GND) with **Gnd**
c. Connect potentiometer positive,negative terminal with gnd and **5v** of the LCD and connect middle of the potentiometer with the Vo pin of the LCD.
d. Connect LCD anode with the **5v** pin of the Arduino and cathode pin with resitor and the resistor with the **GND** of the Arduino.
e. **Rs** pin of the LCD with the 8 of Arduino
f. **Rw** pin with GND
g. **E** pin with **7**
h. **D4** pin the **6**
i. **D5** pin **5**
j. **D6** pin **4**
k. **D7** pin **3**
l. Now we need to connect temperature sensor, power pin of tmp36 will be connected to **vcc** of ardunio and negative pin will be connected to the **GND** of arduino.
m. And output pin will be connected to **A0** of arduino.

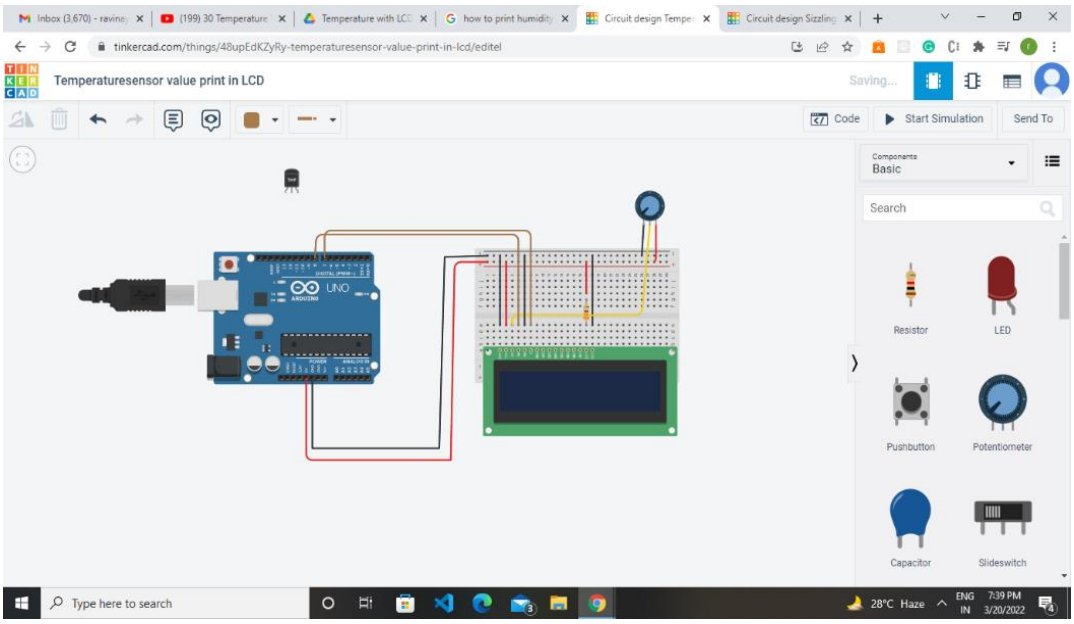


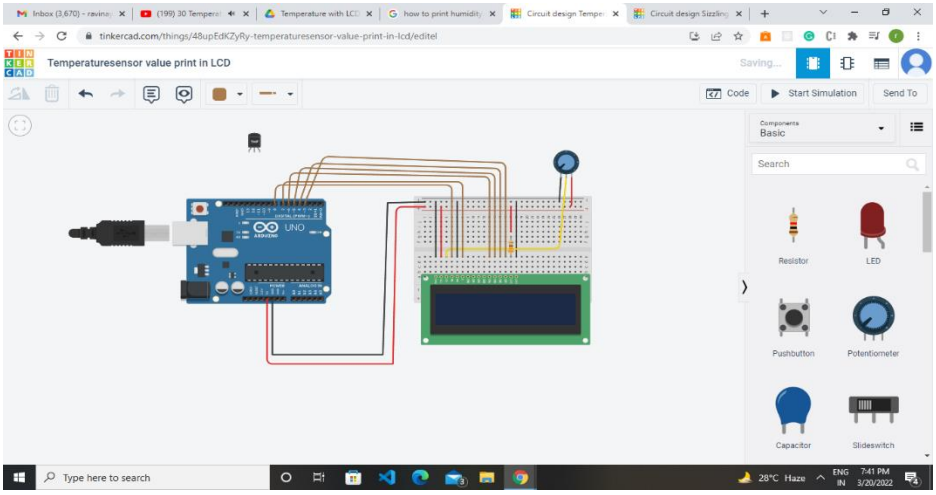

Temperaturesensor value print in LCD
Saving...
Code
Start Simulation
Send To
Components
Basic
DHT
Type here to search
28°C Haze
ENG
IN
7:08 PM
3/20/2022

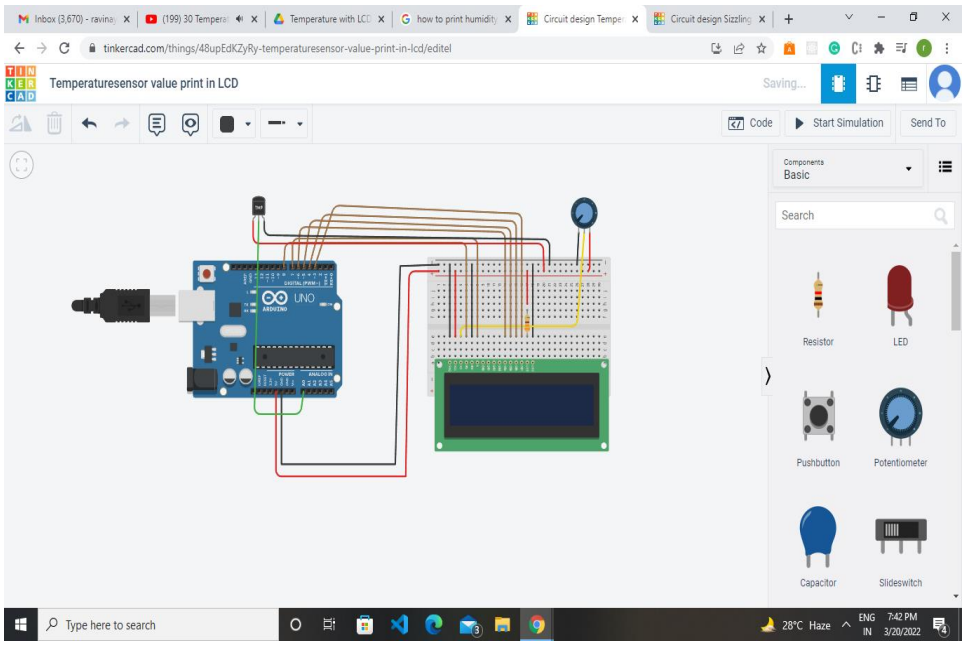

tinkercad.com/things/48upEdKZyRy-bodacious-kasi-jofo/editel?tenant=circuits
Temperaturesensor value print in LCD
Saving...
Code
Start Simulation
Send To
Components
Basic
DHT
Type here to search
28°C Haze
ENG
IN
7:10 PM
3/20/2022


Temperaturesensor value print in LCD
Saving...
Code
Start Simulation
Send To
Components
Basic
DHT
Type here to search
28°C Haze
ENG
IN
7:11 PM
3/20/2022

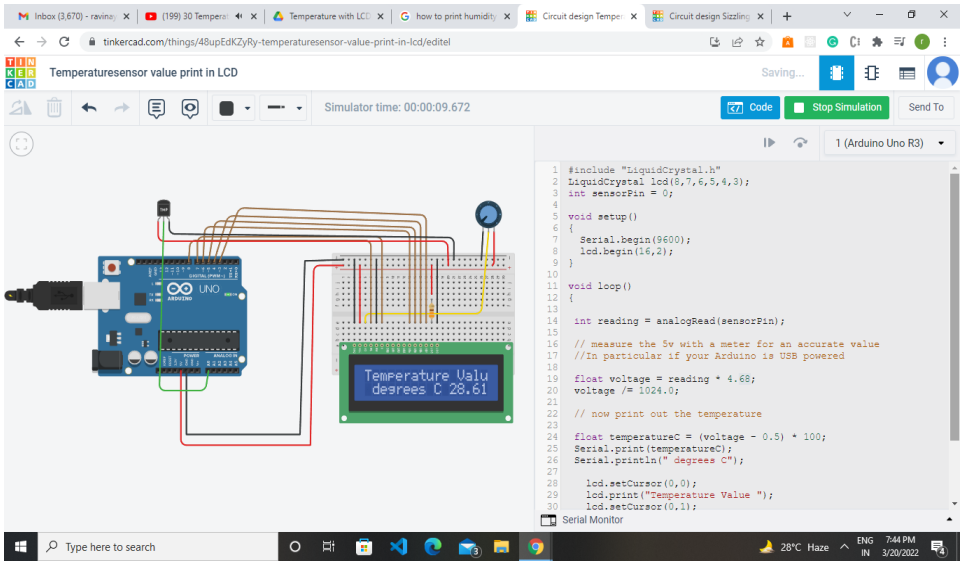

Temperaturesensor value print in LCD
Saving...
Code
Start Simulation
Send To
Components
Basic
DHT
Type here to search
28°C Haze
ENG
IN
7:12 PM
3/20/2022


Temperaturesensor value print in LCD
Saving...
Code
Start Simulation
Send To
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
Type here to search
28°C Haze
ENG
IN
7:39 PM
3/20/2022


Temperaturesensor value print in LCD
Saving...
Code
Start Simulation
Send To
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
Type here to search
28°C Haze
ENG
IN
7:41 PM
3/20/2022



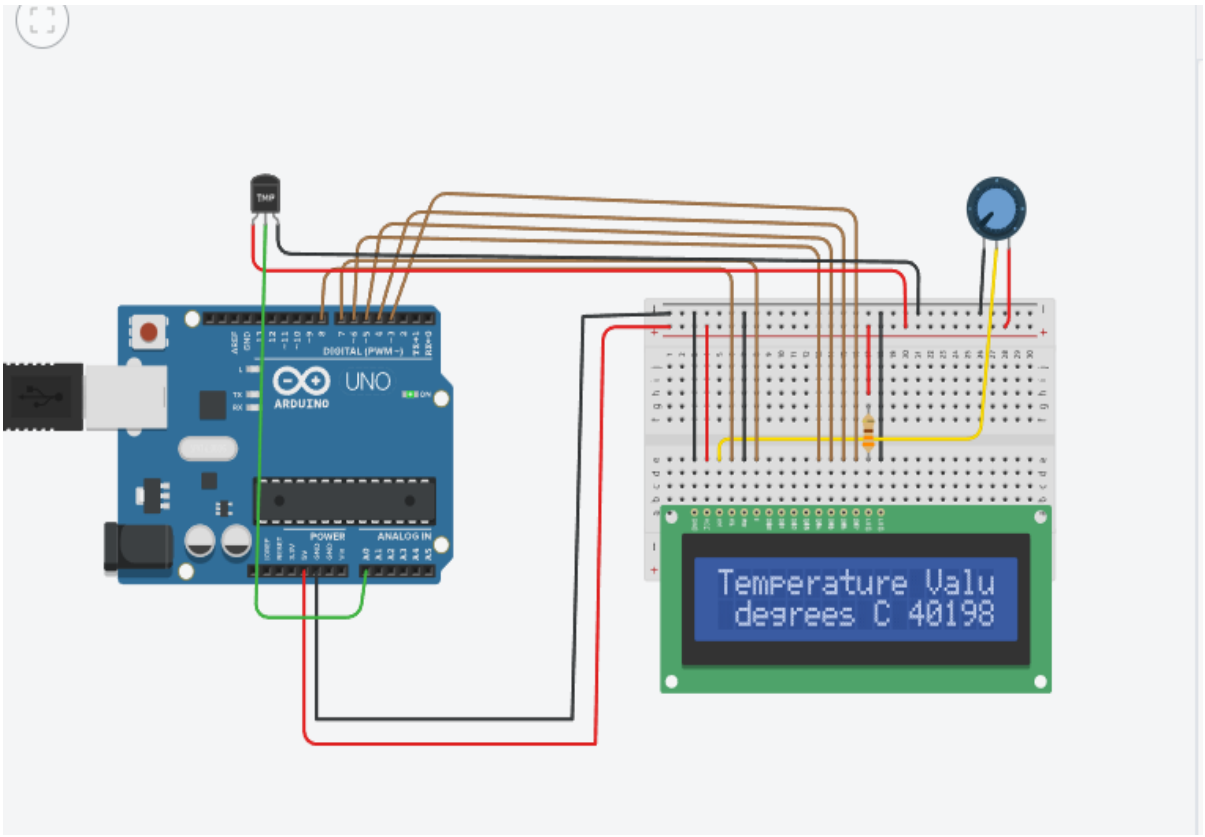
Step4.After making all the connections we need to write the code and start simulation in tinkercad.



Code:

```
#include "LiquidCrystal.h"
LiquidCrystal lcd(8,7,6,5,4,3);
int sensorPin = 0;

void setup()
{
  Serial.begin(9600);
  lcd.begin(16,2);
}

void loop()
{

 int reading = analogRead(sensorPin);

 // measure the 5v with a meter for an accurate value
 //In particular if your Arduino is USB powered

 float voltage = reading * 4.68;
 voltage /= 1024.0;

 // now print out the temperature

 float temperatureC = (voltage - 0.5) * 100;
 Serial.print(temperatureC);
 Serial.println(" degrees C");

   lcd.setCursor(0,0);
   lcd.print("Temperature Value ");
   lcd.setCursor(0,1);
   lcd.print(" degrees C");
   lcd.setCursor(11,1);
   lcd.print(temperatureC);

 delay(100);
}
```

Output:


TMP
UNO
ARDUINO
DIGITAL (PWM~)
POWER
ANALOG IN
Temperature Valu
degrees C 40198