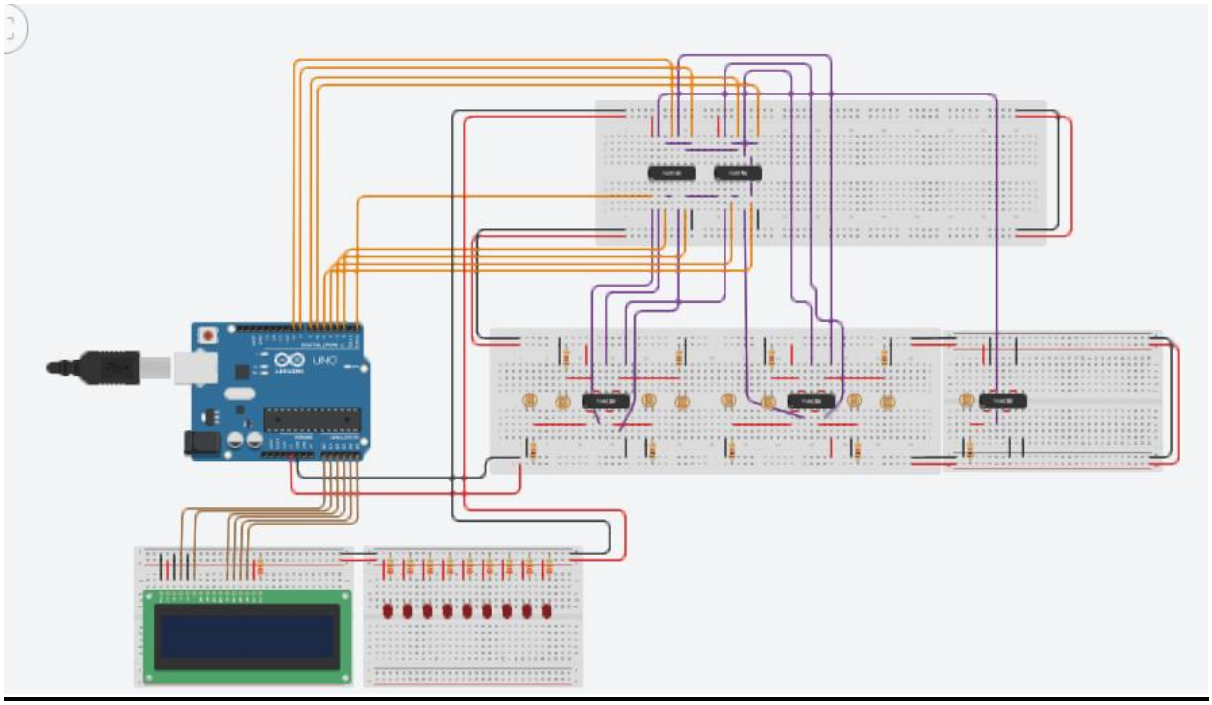
SENSOR CIRCUIT DESIGN



ARDUINO CORD

```
//Sensor project

float angle;
// import libraary for LCD
#include<LiquidCrystal.h>

LiquidCrystal lcd(A0,A1,A2,A3,A4,A5);

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

void loop()
{
  // Read input values from LDRs
  int bval0 = digitalRead(0);
  int bval1 = digitalRead(2);
  int bval2 = digitalRead(3);
  int bval3 = digitalRead(4);
  int bval4 = digitalRead(5);
  int bval5 = digitalRead(6);
  int bval6 = digitalRead(7);
  int bval7 = digitalRead(8);
  int bval8 = digitalRead(9);

  // get decimal value

  angle = (bval0*(256)) + (bval1*(128)) + (bval2*(64)) + (bval3*(32)) + (bval4*(16)) + (bval5*(8)) + (bval6*(4)) + (bval7*(2)) + (bval8);

  Serial.print("  Angle = ");
  Serial.println(angle);

  lcd.setCursor(0,0);
  lcd.print(angle);
}
```

LINK FOR THE SIMULATION

https://www.tinkercad.com/things/9P4oZr00kKL-sensor-simulation/editel?sharecode=842kIp_IAwP7pGYfIFnkGL-St5KQUXjKitzSvnRkbb8

Sensor circuit degign

- LDR circuit

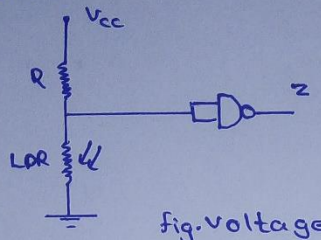


fig. voltage divider circuit

NAND gate truth table for above circuit.

input	Z
0	1
1	0

- If LDR's resistance lower than R value, the logic value (z value) will be one.
- There we will have to calculate the R resistance value, when doing this practically.
- There we used three 74HC00 IC's to get grey code value.
- Two 74HC86 IC's are used to convert the grey code value to binary value.
- The Arduino UNO board is used to convert binary value to decimal value.
- Also 16x2 LCD display is used to display the angle.