

# **SMART WATER LEVEL INDICATOR**

**Project Title:** SMART WATER LEVEL INDICATOR

**Project Lead:** Rutuja Shinde

**Learning Objective:**

- Simulate LDR and Thermistor workings.
- Use Tinkercad for electronics and Arduino projects.

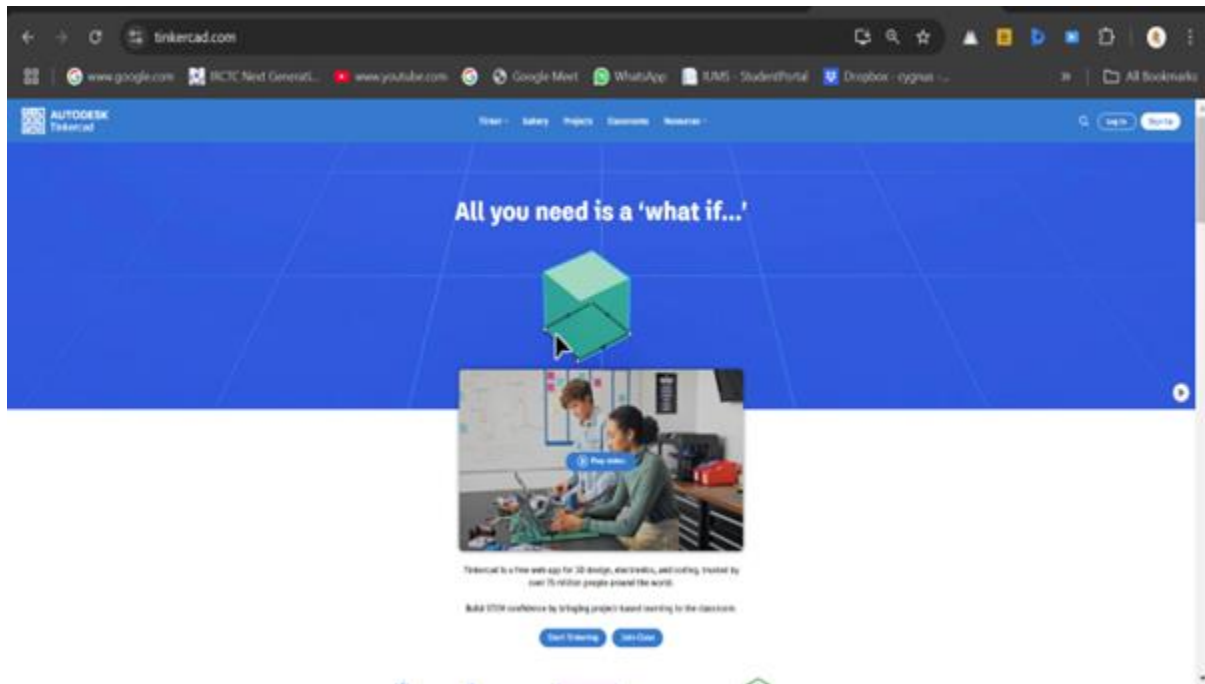
**Components Required:**

1. Arduino board
2. Ultrasonic sensor (HC-SR04)
3. LEDs
4. Buzzer
5. 16x2 LCD
6. Breadboard and jumper wires

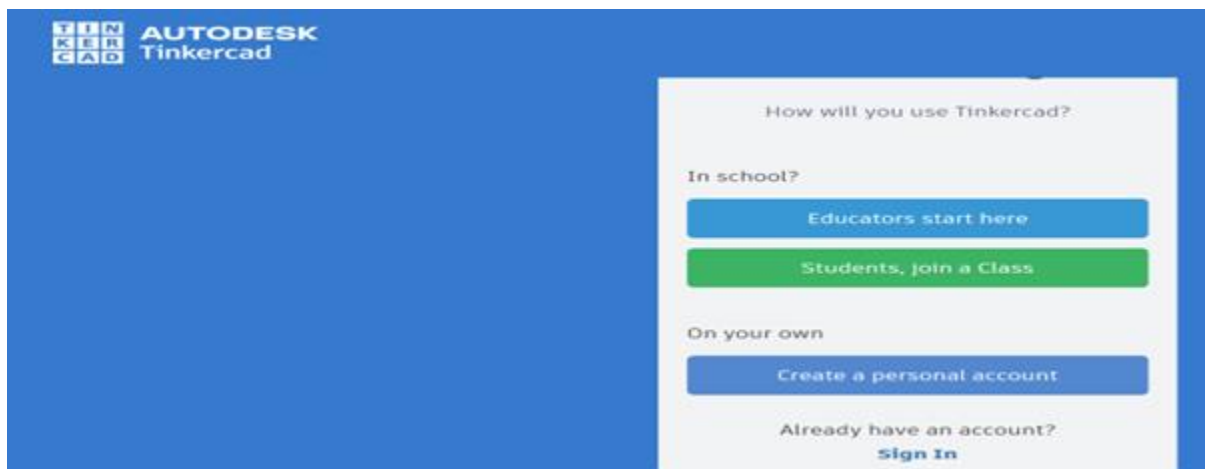
# Step-by-Step Guide

## Step 1: Set up Your Tinkercad Project

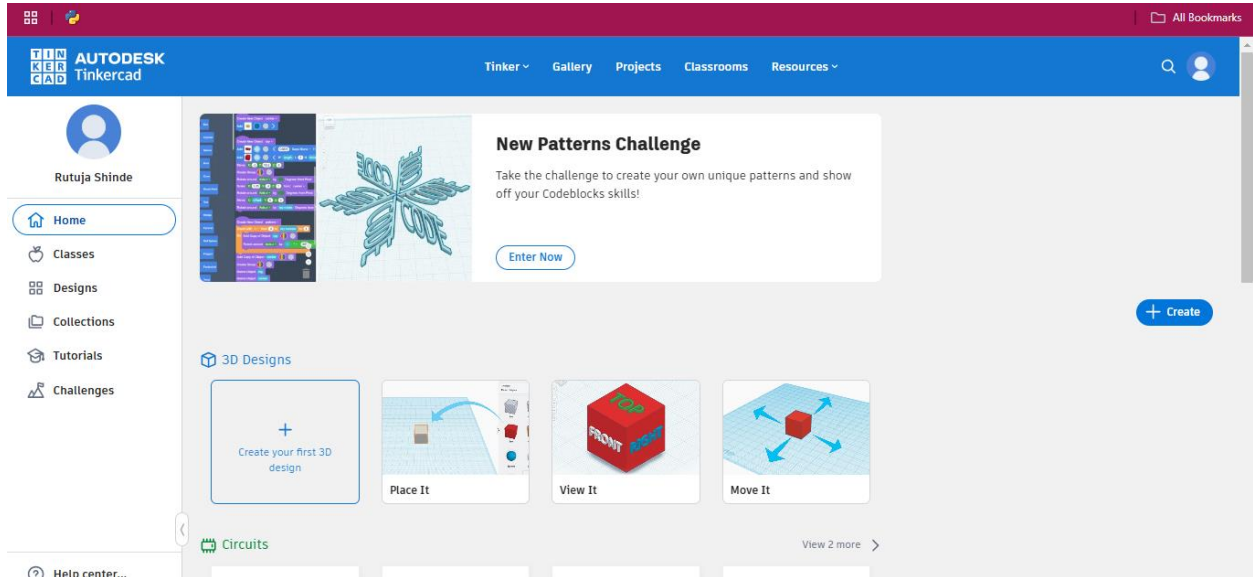
1. Open [Tinkercad](https://www.tinkercad.com) in your web browser. ( [www.tinkercad.com](https://www.tinkercad.com) )



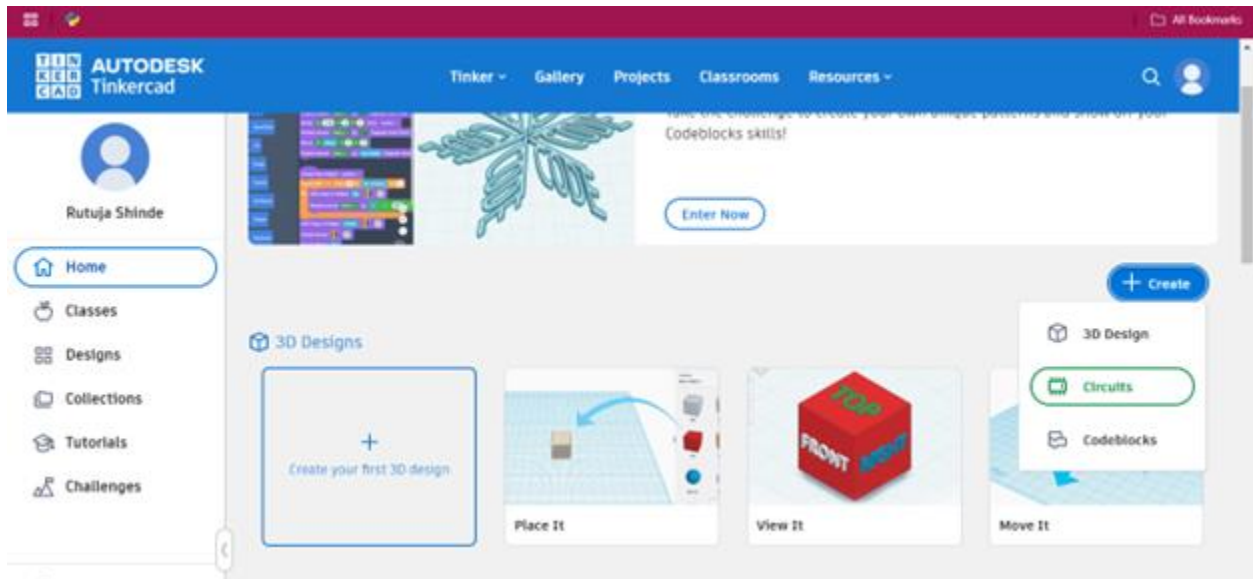
2. Create a free account or log in if you already have one.

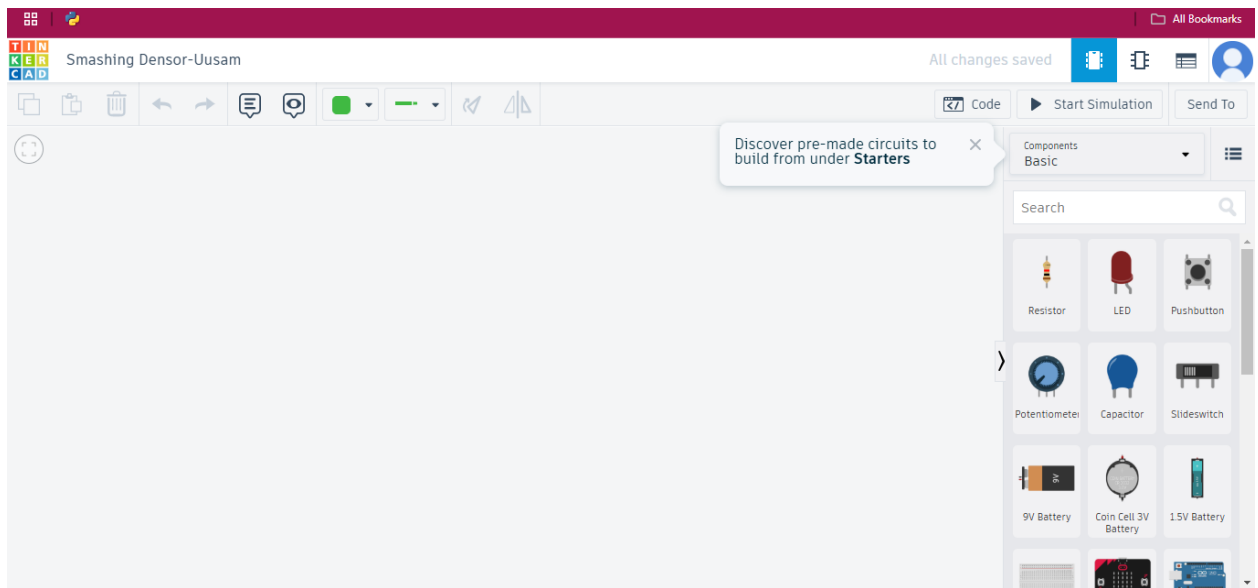


3. Select **"Circuits"** from the Tinkercad dashboard.

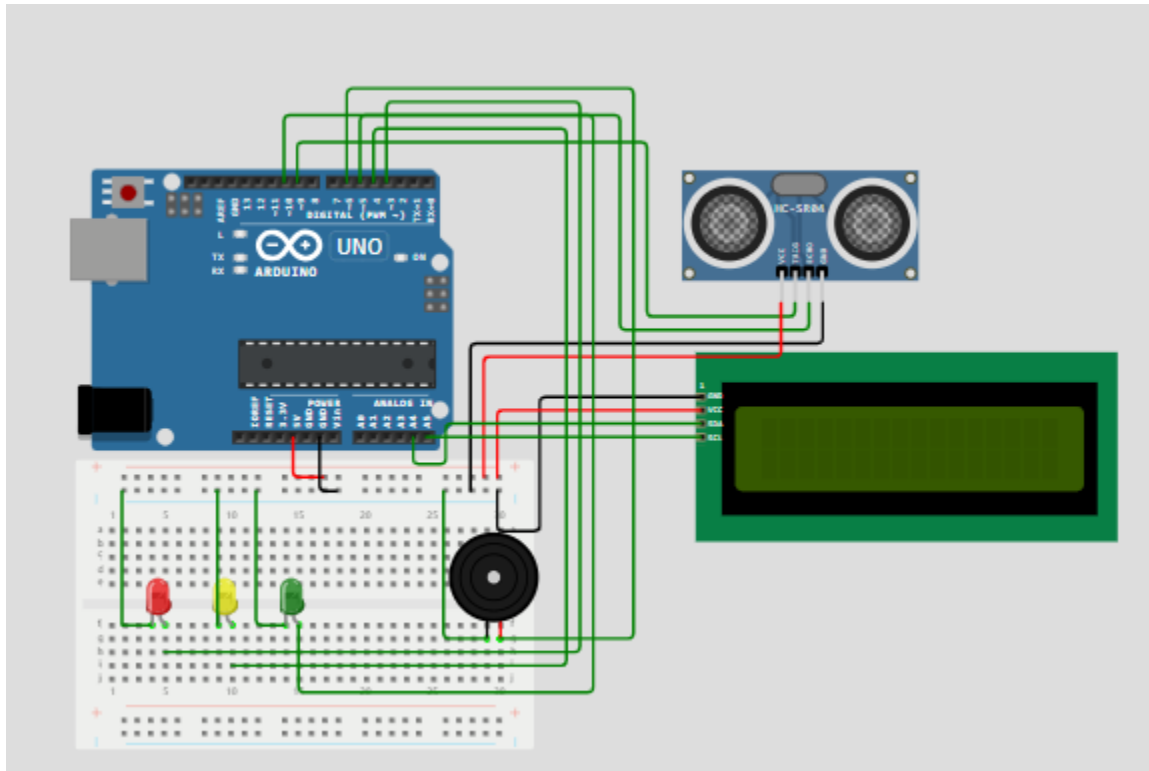


4. Click **"Create New Circuit"** to start a new project.





## Circuit Diagram:



## CODE:

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);
const int trigPin = 9;
const int echoPin = 10;
const int greenLED = 3;
const int yellowLED = 4;
```

```
const int redLED = 5;
const int buzzer = 6;
const int tankHeight = 100;
void setup()
{
  Serial.begin(9600);
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(greenLED, OUTPUT);
  pinMode(yellowLED, OUTPUT);
  pinMode(redLED, OUTPUT);
  pinMode(buzzer, OUTPUT);
  lcd.init();
  lcd.backlight();
  lcd.setCursor(0, 0);
  lcd.print("Water Level:");
}
void loop()
{
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
```

```
digitalWrite(trigPin, LOW);
long duration = pulseIn(echoPin, HIGH);
long distance = duration * 0.034 / 2;
long waterLevel = tankHeight - distance;
lcd.setCursor(0, 1);
if (waterLevel > 0 && waterLevel <= tankHeight) {
    lcd.print("Level: ");
    lcd.print(waterLevel);
    lcd.print(" cm ");
} else if (waterLevel <= 0) {
    lcd.print("Level: Empty ");
} else {
    lcd.print("Out of Range ");
}
if (waterLevel < 30)
{
    digitalWrite(greenLED, LOW);
    digitalWrite(yellowLED, LOW);
    digitalWrite(redLED, HIGH);
    tone(buzzer, 1000);
}
else if (waterLevel >= 30 && waterLevel <= 70)
{
```

```
digitalWrite(greenLED, LOW);  
digitalWrite(yellowLED, HIGH);  
digitalWrite(redLED, LOW);  
noTone(buzzer);  
} else if (waterLevel > 70)  
{  
    digitalWrite(greenLED, HIGH);  
    digitalWrite(yellowLED, LOW);  
    digitalWrite(redLED, LOW);  
    tone(buzzer, 500);  
}  
Serial.print("Water Level: ");  
Serial.print(waterLevel);  
Serial.println(" cm");  
delay(500);  
}
```



## OUTPUT:

