

DOOR BELL SENSOR

Project Title: Door Bell Sensor

Project Lead: Bhakti Harale

Learning Objective:

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

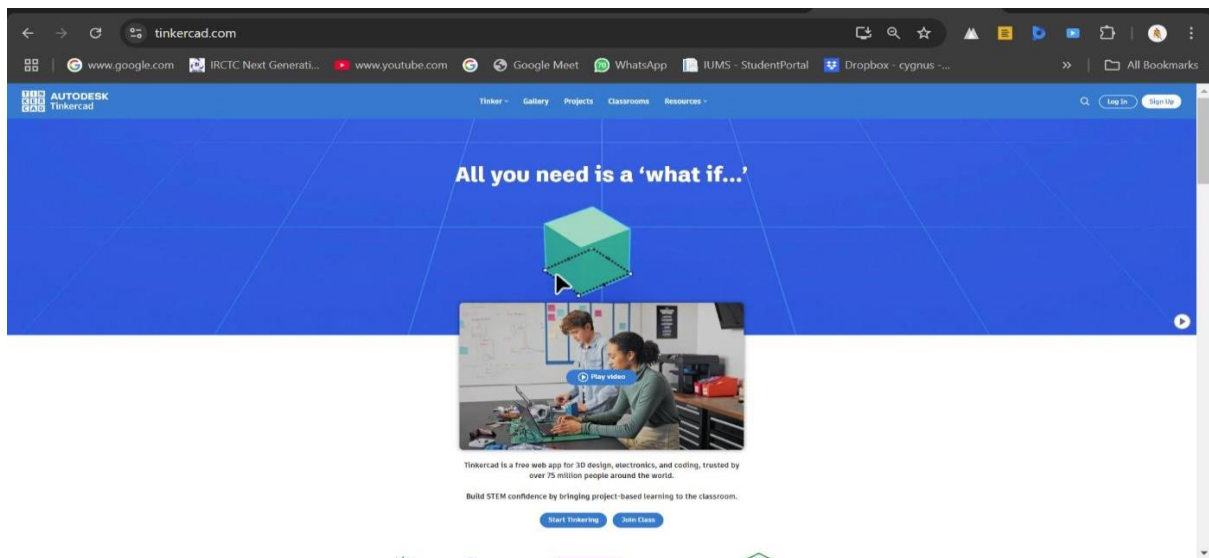
Required Components:

- 1.Arduino Uno (virtual, in Tinkercad)
- 2.Breadboard (virtual)
- 3.Connecting Wires
- 4.Buzzer
- 5.Ultrasonic sensor
- 6.Led

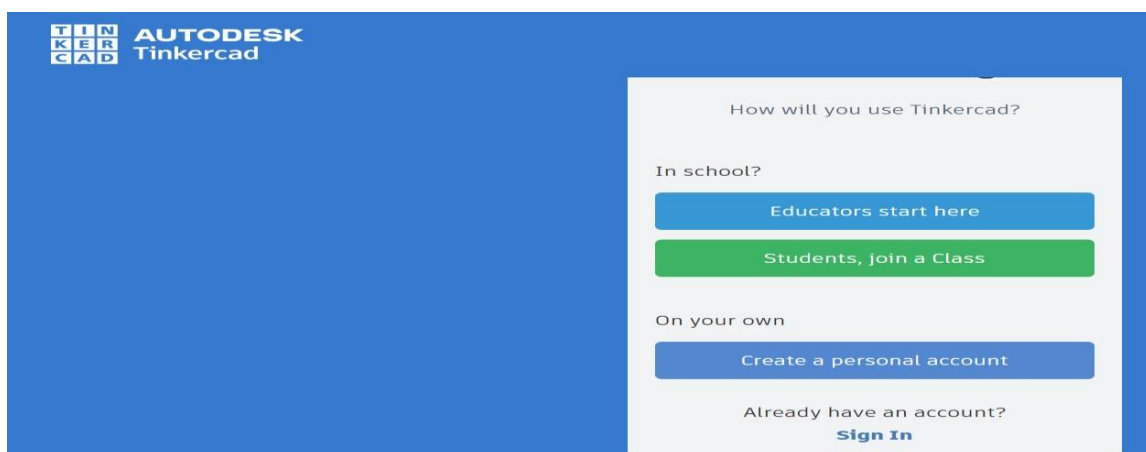
Step-by-Step Guide

Step 1: Set up Your Tinkercad Project

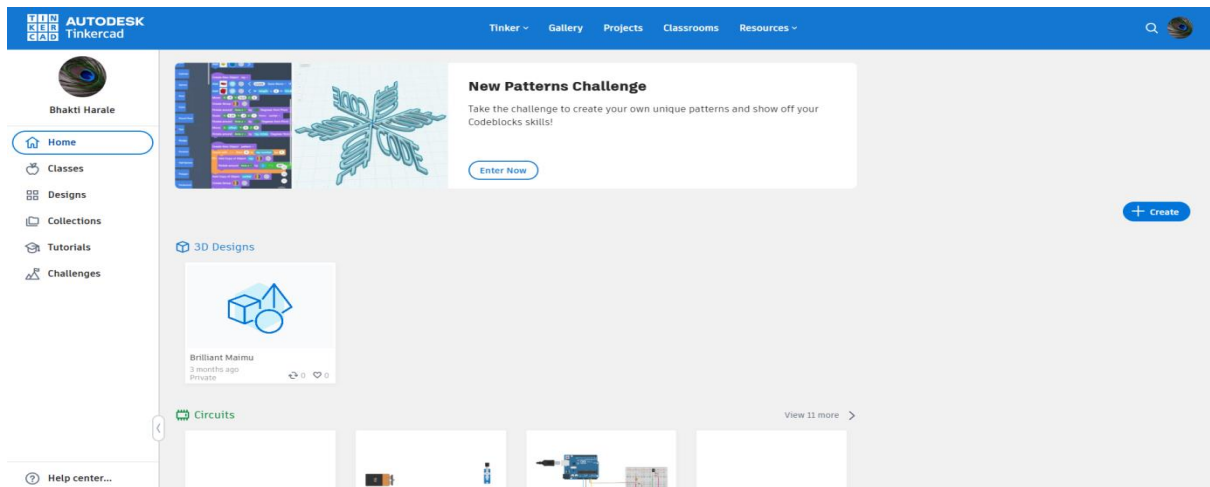
1. Open [Tinkercad](https://www.tinkercad.com) in your webbrowser. www.tinkercad.com)



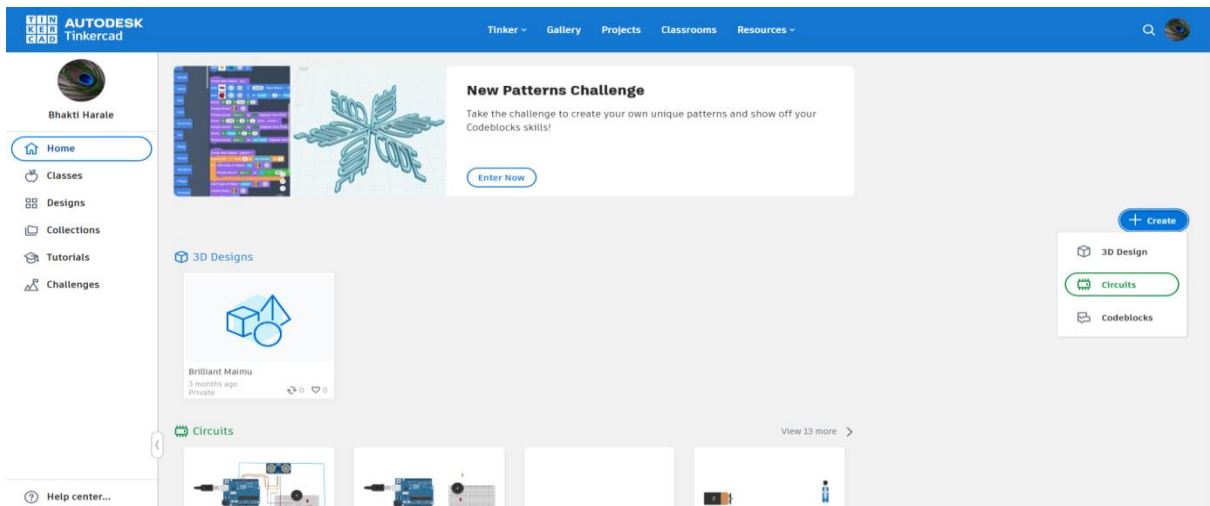
2. Create a free account or log in if you already have one.

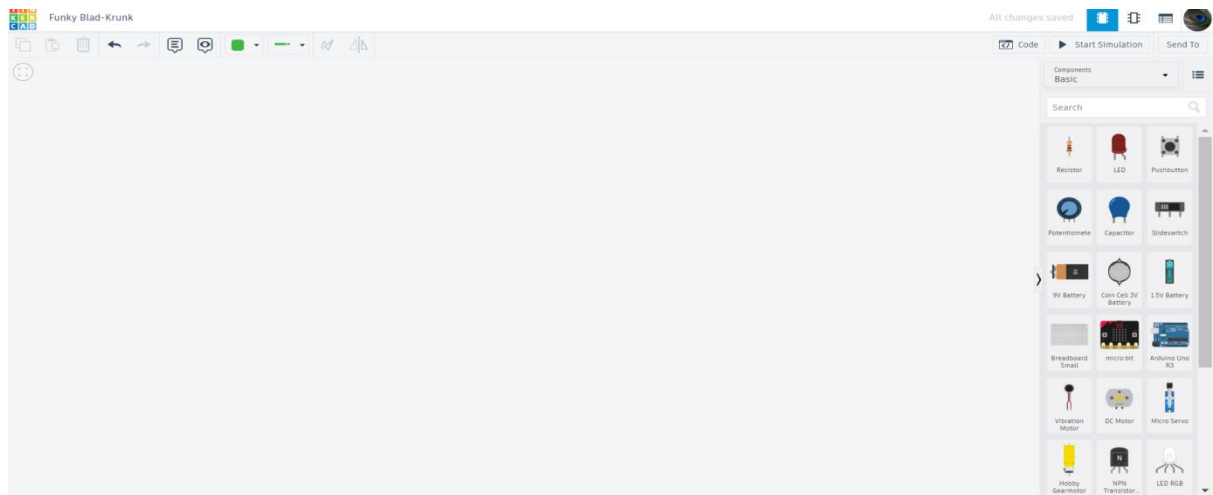


3. Select **"Circuits"** from the Tinkercad dashboard.

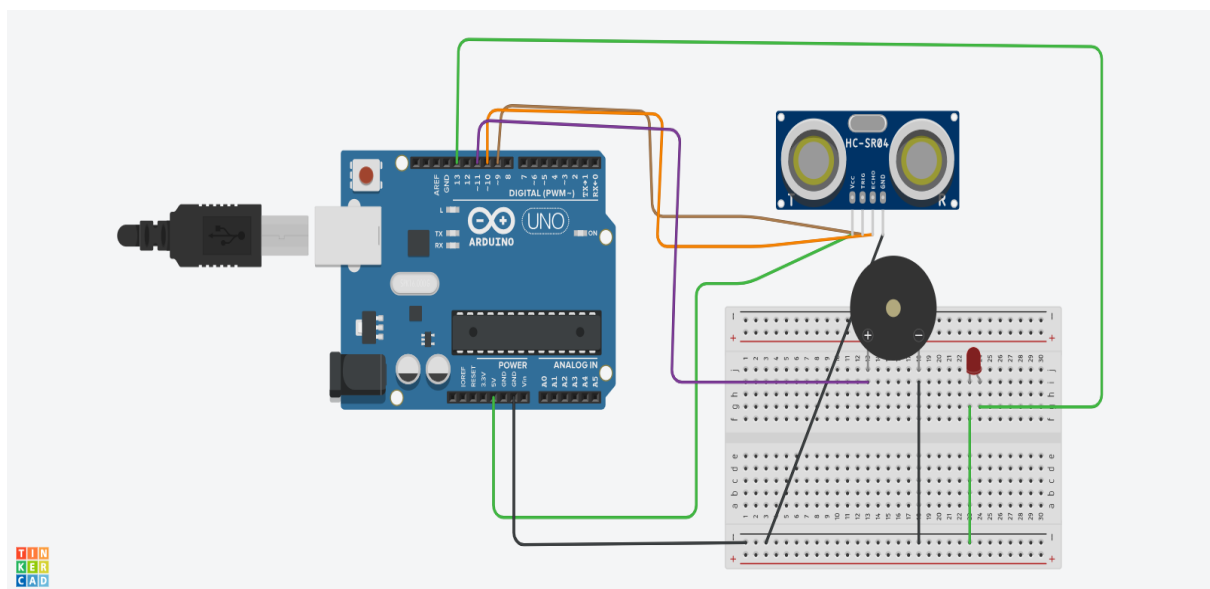


4. Create New Circuit" to start a new project.





Circuit Diagram:



Code:

```
const int trigPin = 9;
const int echoPin = 10;
const int buzzer = 11;
const int ledPin = 13;
long duration;
int distance;
int safetyDistance;

void setup() {
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(buzzer, OUTPUT);
  pinMode(ledPin, OUTPUT);
  Serial.begin(9600);
}

void loop() {
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);

  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
```

```
digitalWrite(trigPin, LOW);
```

```
duration = pulseIn(echoPin, HIGH);
```

```
distance= duration*0.034/2;
```

```
safetyDistance = distance;
```

```
if (safetyDistance <= 40){
```

```
    digitalWrite(buzzer, HIGH);
```

```
    digitalWrite(ledPin, HIGH);
```

```
}
```

```
else{
```

```
    digitalWrite(buzzer, LOW);
```

```
    digitalWrite(ledPin, LOW);
```

```
}
```

```
Serial.print("Distance:50 ");
```

```
Serial.println(distance);
```

```
}
```

```
}
```

```
void loop() {
```

```
    digitalWrite(trigPin, LOW);
```

```
    delayMicroseconds(2);
```

```
digitalWrite(trigPin, HIGH);  
delayMicroseconds(10);  
digitalWrite(trigPin, LOW);  
  
duration = pulseIn(echoPin, HIGH);  
distance= duration*0.034/2;  
  
safetyDistance = distance;  
if (safetyDistance <= 40){  
    digitalWrite(buzzer, HIGH);  
    digitalWrite(ledPin, HIGH);  
}  
else{  
    digitalWrite(buzzer, LOW);  
    digitalWrite(ledPin, LOW);  
}  
  
Serial.print("Distance:50 ");  
Serial.println(distance);  
}
```

Output:

Automatic Door Bell Sensor

Simulator time: 00:00:06.482

Code Stop Simulation Send To

1 (Arduino Uno R3)

```
19 }
20
21 void loop() {
22   // Clears the trigPin
23   digitalWrite(trigPin, LOW);
24   delayMicroseconds(2);
25
26   // Sets the trigPin on HIGH state for 10 micro seconds
27   digitalWrite(trigPin, HIGH);
28   delayMicroseconds(10);
29   digitalWrite(trigPin, LOW);
30
31   // Reads the echoPin, returns the sound wave travel time in micro seconds
32   duration = pulseIn(echoPin, HIGH);
33
34   // Calculating the distance
35   distance= duration*0.034/2;
36
37   safetyDistance = distance;
38   if (safetyDistance <= 40){
39     digitalWrite(buzzer, HIGH);
40     digitalWrite(ledPin, HIGH);
41   }
42 }
43
```

Serial Monitor

Distance:58 71
Distance:58 71
Distance:58 71
Distance:58 71
Dist

