ASSIGNMENT-1:

SMART HOME AUTOMATION(smart door and water level monitoring)

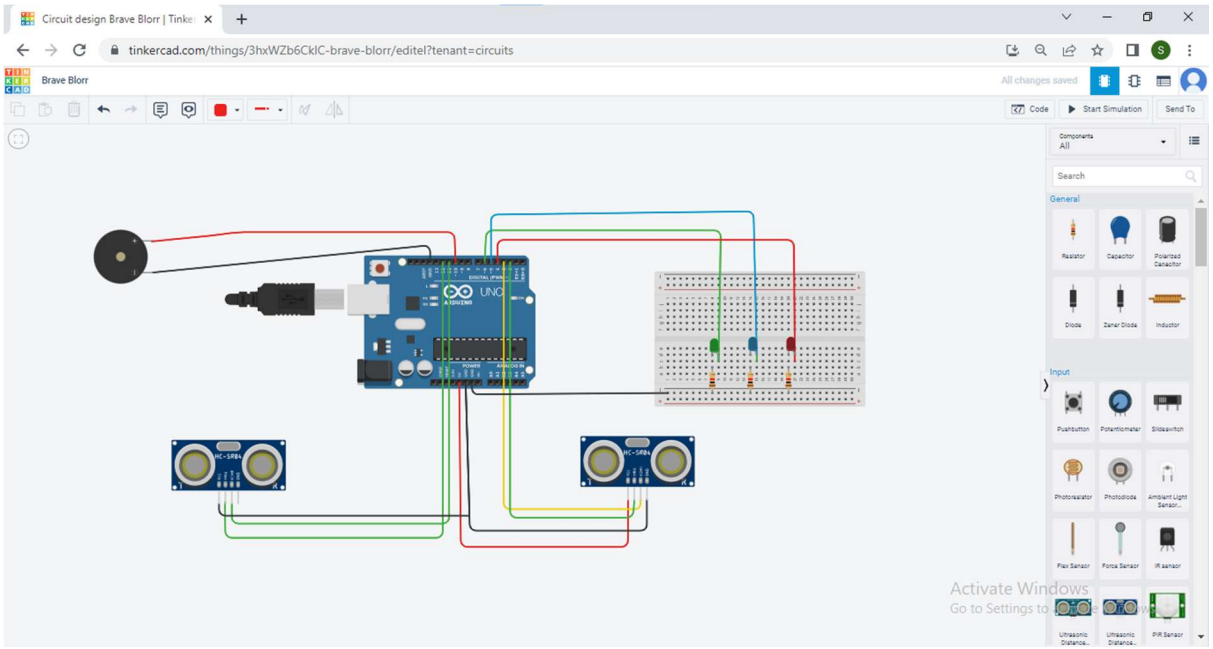
```
int trigger_pin = 2;
int echo_pin = 3;
int buzzer_pin = 10;
int time;
int distance;

int distance1 = 0;
int red =4;
int blue =5;
int green = 6;

long readUltrasonicDistance (int triggerPin, int echoPin)
{
pinMode (triggerPin, OUTPUT);
digitalWrite(triggerPin, LOW);
delayMicroseconds(2);
digitalWrite(triggerPin, HIGH);
delayMicroseconds (10);
digitalWrite(triggerPin, LOW);
pinMode (echoPin, INPUT);
return pulseIn(echoPin, HIGH);
}

void waterlevel(int dist1)
{
if (dist1> 200)
```

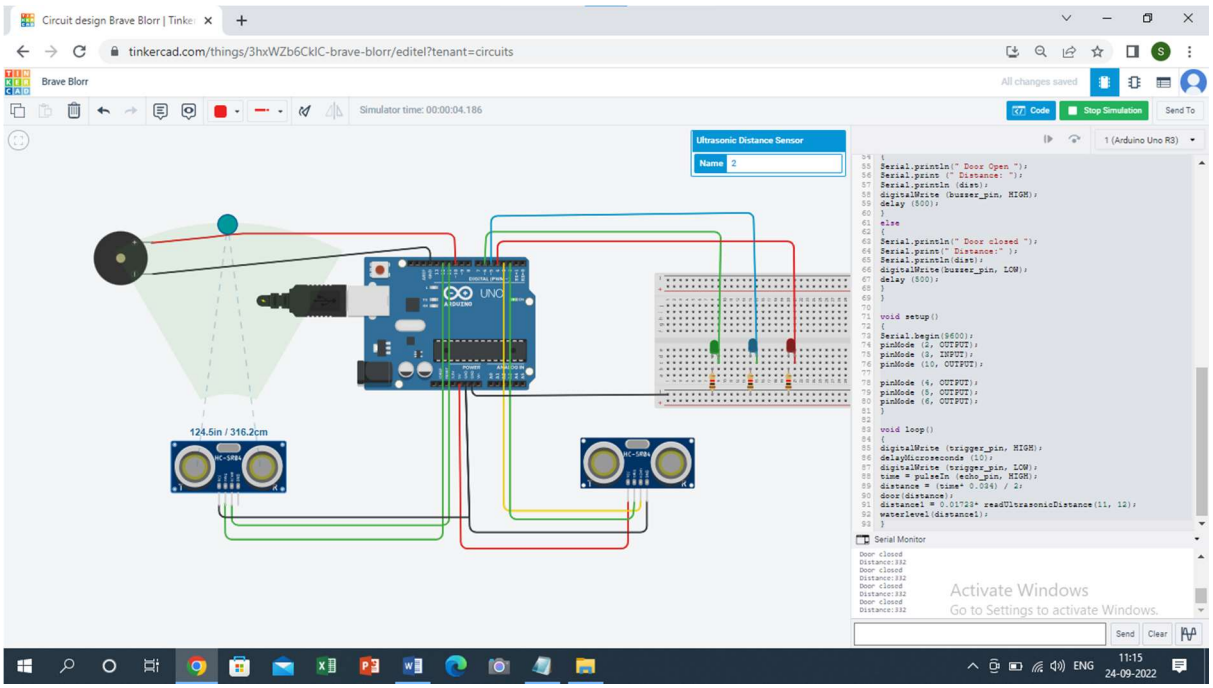
```
{
digitalWrite(red, HIGH);
digitalWrite(blue, LOW);
digitalWrite(green, LOW);
delay(2000);
}
if (dist1> 100 && dist1 <200)
{
digitalWrite(red, LOW);
digitalWrite(blue, HIGH);
digitalWrite(green, LOW);
delay(2000);
}
if (dist1 <= 100)
{
digitalWrite(red, LOW);
digitalWrite(blue, LOW);
digitalWrite(green, HIGH);
delay(2000);
}
}

void door(int dist)
{
if (dist <= 10)
{
Serial.println(" Door Open ");
Serial.print (" Distance: ");
Serial.println (dist);
digitalWrite (buzzer_pin, HIGH);
```

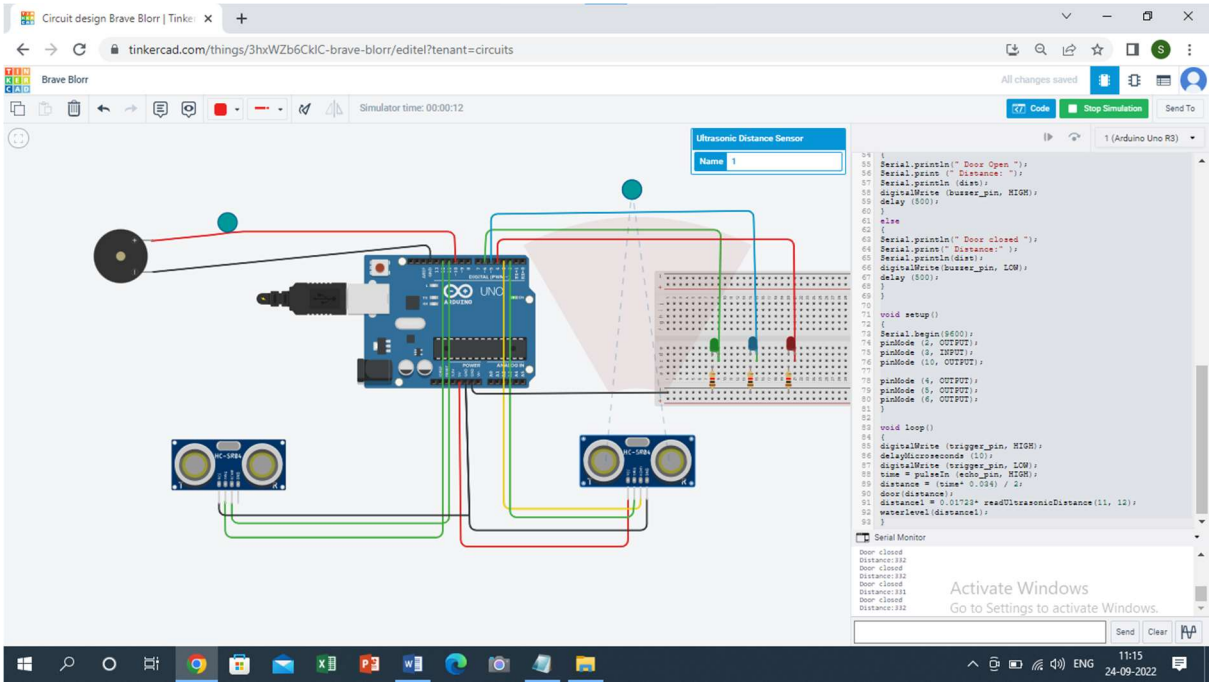
```
delay (500);
}
else
{
Serial.println(" Door closed ");
Serial.print(" Distance:" );
Serial.println(dist);
digitalWrite(buzzer_pin, LOW);
delay (500);
}
}

void setup()
{
Serial.begin(9600);
pinMode (2, OUTPUT);
pinMode (3, INPUT);
pinMode (10, OUTPUT);

pinMode (4, OUTPUT);
pinMode (5, OUTPUT);
pinMode (6, OUTPUT);
}

void loop()
{
digitalWrite (trigger_pin, HIGH);
delayMicroseconds (10);
digitalWrite (trigger_pin, LOW);
time = pulseIn (echo_pin, HIGH);
```

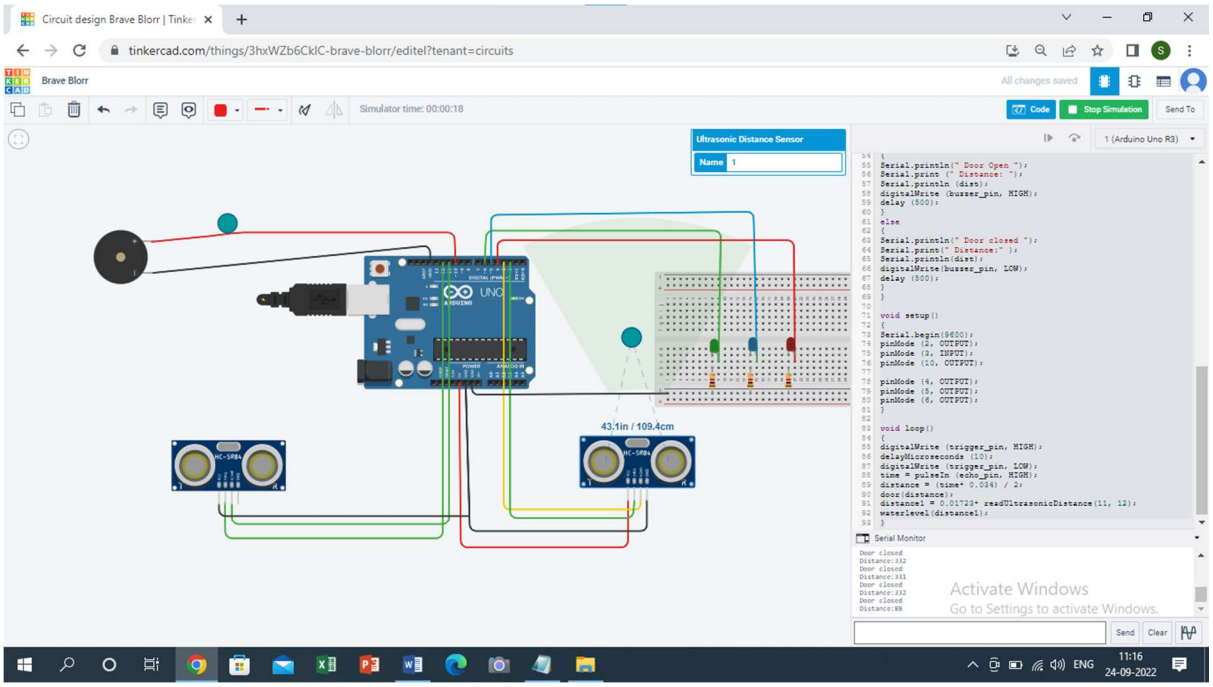
```
distance = (time* 0.034) / 2;
door(distance);
distance1 = 0.01723* readUltrasonicDistance(11, 12);
waterlevel(distance1);
}
```

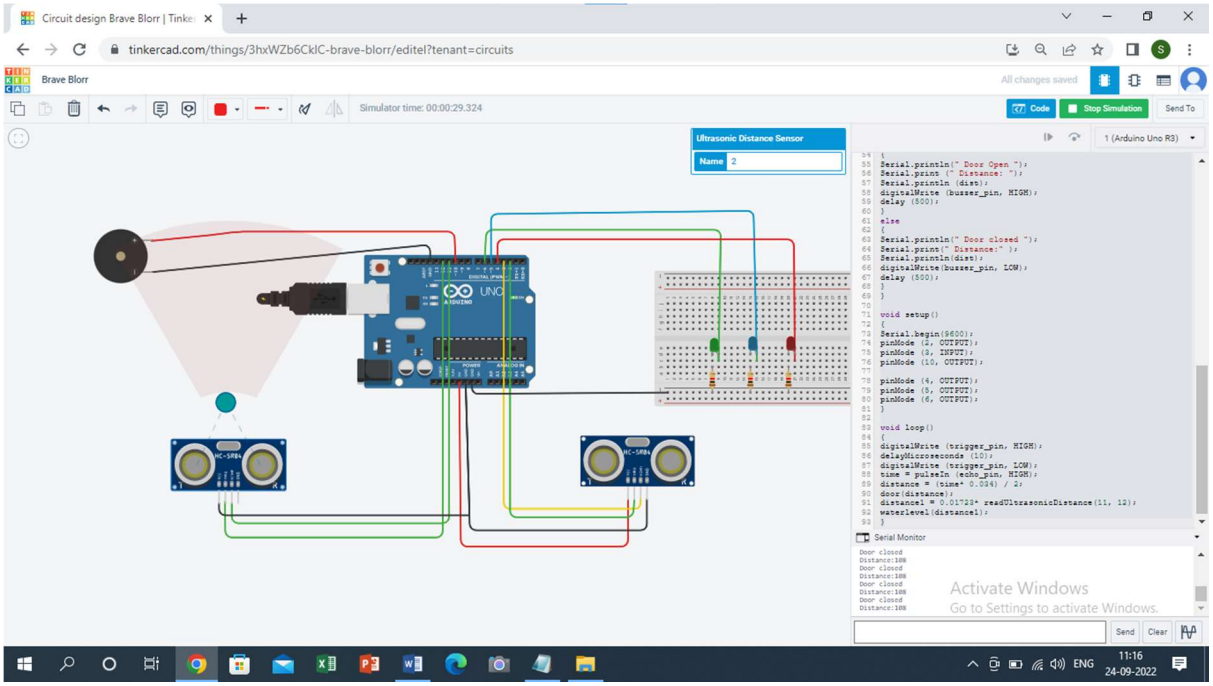
OUTPUT:






Circuit design Brave Blorr | Tinke
tinkercad.com/things/3hxWZb6CkIC-brave-blorr/editel?tenant=circuits
Brave Blorr
Simulator time: 00:00:12
Code
Stop Simulation
Send To
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
Serial Monitor
Door closed
Distance:332
Door closed
Distance:332
Door closed
Distance:331
Door closed
Distance:332
Activate Windows
Go to Settings to activate Windows.
Send
Clear
ENG
11:15
24-09-2022


Circuit design Brave Blorr | Tinke
tinkercad.com/things/3hxWZb6CkIC-brave-blorr/editel?tenant=circuits
Brave Blorr
Simulator time: 00:00:18
Code
Stop Simulation
Send To
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
43.1in / 109.4cm
Serial Monitor
Door closed
Distance:332
Door closed
Distance:331
Door closed
Distance:332
Door closed
Distance:88
Activate Windows
Go to Settings to activate Windows.
Send
Clear
ENG
11:16
24-09-2022


Circuit design Brave Blorr | Tinke
tinkercad.com/things/3hxWZb6CkIC-brave-blorr/editel?tenant=circuits
Brave Blorr
All changes saved
Simulator time: 00:00:29.324
Code
Stop Simulation
Send To
Ultrasonic Distance Sensor
Name 2
1 (Arduino Uno R3)
Serial Monitor
Door closed
Distance:10%
Door closed
Distance:10%
Door closed
Distance:10%
Door closed
Distance:10%
Activate Windows
Go to Settings to activate Windows.
Send
Clear
ENG
11:16
24-09-2022