**ASSIGNMENT-1 SMART HOME USING TINKERCAD**

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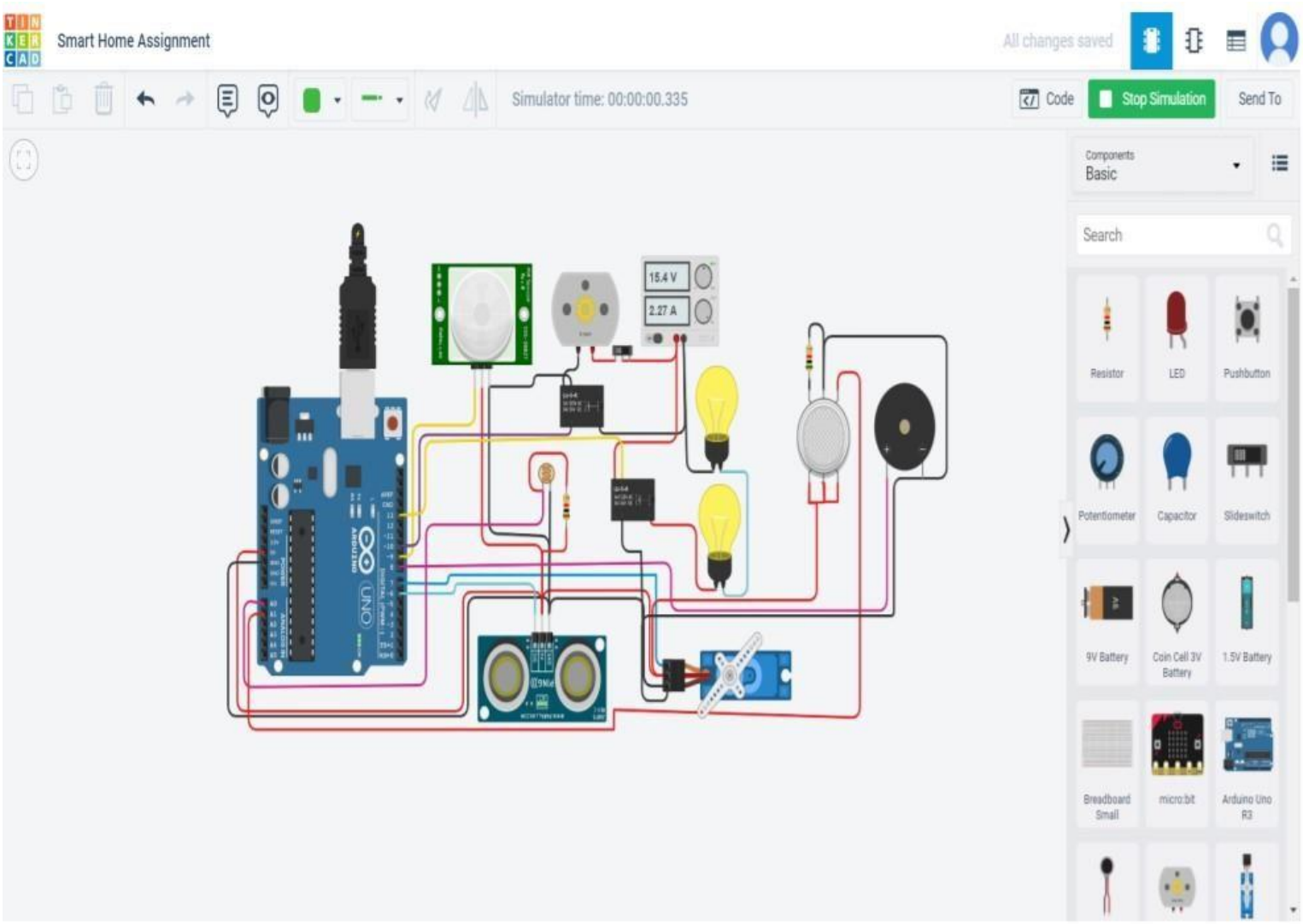
| Assignment Date | 15 September 2022 |
| Student Name | Deepika S |
| Student Roll Number | 201925 |
| Maximum Marks | 2 Marks |

## QUESTION:

Make a smart home using Tinkercad using 2+ sensors, LED and buzzer in a single code and circuit.

## SOLUTION:

### Circuit:




**Code:**

```
#include <Servo.h>

int output1Value = 0; int
sen1Value = 0; int
sen2Value = 0; int
const gas_sensor = A1;
int const LDR = A0; int
limit = 400;

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);
}

Servo servo_7;

void setup()
{
   Serial.begin(9600);
  pinMode(A0,             INPUT);
  pinMode(A1,INPUT);
  pinMode(13,         OUTPUT);
  servo_7.attach(7, 500, 2500);

  pinMode(8,OUTPUT);
  pinMode(9, INPUT); pinMode(10,
  OUTPUT); pinMode(4,
  OUTPUT); pinMode(3,
  OUTPUT);

}
```

```
void loop()
{

    //------light intensity control------//

   int val1 = analogRead(LDR);
 if (val1 > 500)
 {
   digitalWrite(13, LOW);
   Serial.print("Bulb ON = ");
   Serial.print(val1);
 }
 else
 {
   digitalWrite(13, HIGH);
    Serial.print("Bulb OFF = ");
   Serial.print(val1);
 }


       //------ light & fan control --------//

 sen2Value = digitalRead(9); if
 (sen2Value == 0)
 {
   digitalWrite(10, LOW);
   digitalWrite(4, HIGH);
   digitalWrite(3, LOW);
```

```
  Serial.print("     || NO Motion Detected    " );
 }

 if (sen2Value == 1)
 {
   digitalWrite(10, HIGH); //npn as switch ON delay(5000); digitalWrite(4,
   LOW); // RED LED OFF digitalWrite(3, HIGH);
   //GREEN LED ON , indicating motion detected
   Serial.print("         || Motion Detected!      " );
 }
      // ------- Gas Sensor --------//

int val = analogRead(gas_sensor);      //read sensor value
Serial.print("|| Gas Sensor Value = ");
Serial.print(val);                              //Printing in serial monitor

 if (val > limit)
 {
   tone(8, 650);
 }
 delay(300); noTone(8);


     //-------  servo motor  ---------//

 sen1Value = 0.01723 * readUltrasonicDistance(6, 6);
```

```
  if (sen1Value < 100)
  {
    servo_7.write(90);
    Serial.print("        || Door Open!  ; Distance = ");
    Serial.print(sen1Value);
  Serial.print("\n");
  }
  else
  {
    servo_7.write(0);
    Serial.print("        || Door Closed! ; Distance =  ");
    Serial.print(sen1Value);
    Serial.print("\n");
  }
  delay(10);
}
```