ASSIGNMENT-1 SMART HOME USING TINKERCAD

Assignment Date	15 September 2022
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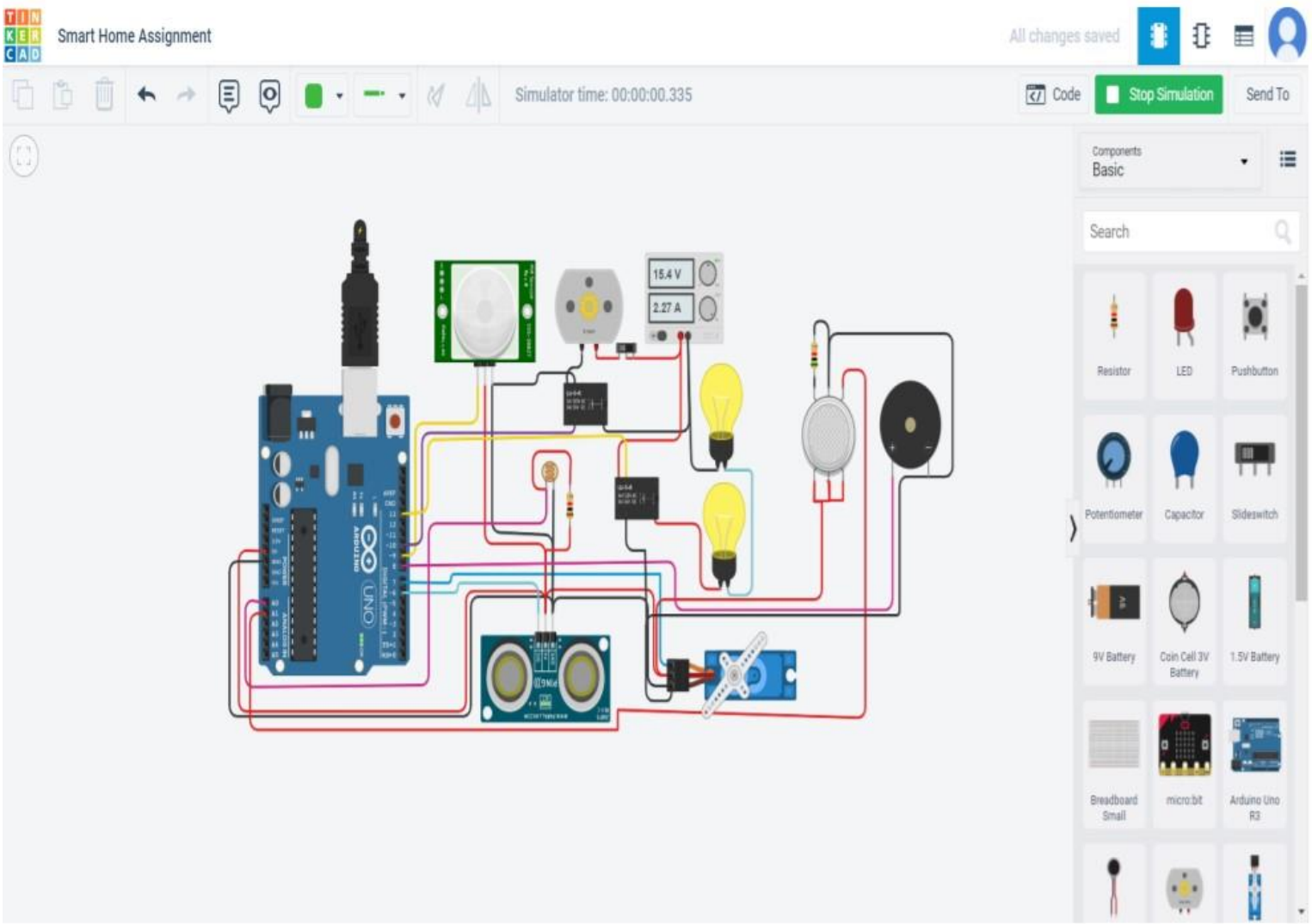
Maximum Marks	2 Marks

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);
}
```