

## Assignment -1

### Home automation using sensors

Assignment Date	19 September 2022
Student Name	Kavitha.D
Student Roll Number	410819106003
Maximum Marks	2 Marks

The image displays two screenshots of the Tinkercad web interface. The top screenshot shows a circuit diagram with an Arduino Uno R3 connected to a breadboard. The breadboard contains a servo motor, a potentiometer, and a pushbutton. Wires connect the Arduino pins to the components. The bottom screenshot shows the same circuit diagram with the code editor open, displaying the following code:

```
1 #include<Servo.h>
2 const int pingPin = 7;
3 int servoPin = 8;
4
5 Servo servol;
6
7 void setup() {
8   // initialize serial communication:
9   Serial.begin(9600);
10  servol.attach(servoPin);
11  pinMode(2,INPUT);
12  pinMode(4,OUTPUT);
13  pinMode(11,OUTPUT);
14  pinMode(12,OUTPUT);
15  pinMode(13,OUTPUT);
16  pinMode(A0,INPUT);
17  digitalWrite(2,LOW);
18  digitalWrite(11,HIGH);
19
20 }
21
22 void loop() {
23
24 }
```

The code editor also shows the 'Serial Monitor' tab selected. The bottom status bar indicates the temperature is 28°C and it is raining, with the date 19-09-2022 and time 15:28.

Circuit design Spe x | Circuit design Cop x | (1) WhatsApp x | Dashboard | Tinker x | Circuit design Cop x +

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Copy of Home automation system

1 (Arduino Uno R3)

```
23
24 long duration, inches, cm;
25
26 pinMode(pingPin, OUTPUT);
27 digitalWrite(pingPin, LOW);
28 delayMicroseconds(2);
29 digitalWrite(pingPin, HIGH);
30 delayMicroseconds(5);
31 digitalWrite(pingPin, LOW);
32
33 // The same pin is used to read the signal from the PING))) : a
34 // whose duration is the time (in microseconds) from the sendi
35 // to the reception of its echo off of an object.
36 pinMode(pingPin, INPUT);
37 duration = pulseIn(pingPin, HIGH);
38
39 // convert the time into a distance
40 inches = microsecondsToInches(duration);
41 cm = microsecondsToCentimeters(duration);
42
43 //Serial.print(inches);
44 //Serial.print("in, ");
45
46
```

Serial Monitor

Home Automation....zip

Circuit design Spe x | Circuit design Cop x | (1) WhatsApp x | Dashboard | Tinker x | Circuit design Cop x +

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Copy of Home automation system

1 (Arduino Uno R3)

```
45 //Serial.print(inches);
46 //Serial.print(cm);
47 //Serial.print("cm");
48 //Serial.println();
49 //delay(100);
50
51 servol.write(0);
52
53 if(cm < 40)
54 {
55   servol.write(90);
56   delay(2000);
57 }
58 else
59 {
60   servol.write(0);
61 }
62
63 // PIR with LED starts
64 int pir = digitalRead(2);
65
66 if(pir == HIGH)
67 {
68
```

Serial Monitor

Home Automation....zip

28°C Rain 15:29 19-09-2022

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Copy of Home automation system

Saved

Code Start Simulation Send To

Text 1 (Arduino Uno R3)

```
67 digitalWrite(4,HIGH);
68 delay(1000);
69 }
70 else if(pir == LOW)
71 {
72   digitalWrite(4,LOW);
73 }
74
75 //temp with fan
76 float value=analogRead(A0);
77 float temperature=value*0.48;
78
79 Serial.println("temperature");
80 Serial.println(temperature);
81
82 if(temperature > 20)
83 {
84   digitalWrite(12,HIGH);
85   digitalWrite(13,LOW);
86 }
87 else
88 {
89 }
```

Serial Monitor

Home Automation....zip

Show all

Circuit design Spe x | Circuit design Cop x | (1) WhatsApp x | Dashboard | Tinker x | Circuit design Cop x +

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Copy of Home automation system

Saved

Code Start Simulation Send To

Text 1 (Arduino Uno R3)

```
79 Serial.println("temperature");
80 Serial.println(temperature);
81
82 if(temperature > 20)
83 {
84   digitalWrite(12,HIGH);
85   digitalWrite(13,LOW);
86 }
87 else
88 {
89   digitalWrite(12,LOW);
90   digitalWrite(13,LOW);
91 }
92
93 long microsecondsToInches(long microseconds) {
94   return microseconds / 74 / 2;
95 }
96
97 long microsecondsToCentimeters(long microseconds) {
98   return microseconds / 29 / 2;
99 }
100 }
```

Serial Monitor

Home Automation....zip

Show all

28°C Rain 15:30 19-09-2022

