Assignment -1

Assignment Date	03 October 2022
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Question-1 :

Build a smart home in Thinkercad with 2 sensors, an Led, buzzer and submit it.

Solution :

Code:

```
#include<Servo.h>

        const int takePin = 7;

        int servePin = 8;


        Servo servo;


        void setup() {

          // serial communication initializing:

          Serial.begin(9600);

          servo.attach(servePin);

          pinMode(2,INPUT);

          pinMode(4,OUTPUT);

          pinMode(11,OUTPUT);

          pinMode(12,OUTPUT);

          pinMode(13,OUTPUT);

          pinMode(A0,INPUT);
```

```
      digitalWrite(2,LOW);

      digitalWrite(11,HIGH);


}


void loop() {


   long duration, inches, cm;


   pinMode(takePin, OUTPUT);

   digitalWrite(takePin, LOW);

   delayMicroseconds(2);

   digitalWrite(takePin, HIGH);

   delayMicroseconds(5);

   digitalWrite(takePin, LOW);


   pinMode(takePin, INPUT);

   duration = pulseIn(takePin, HIGH);


   // convertion of the time into a distance

   inches = microsecondsToInches(duration);

   cm = microsecondsToCentimeters(duration);


   //Serial.print(inches);
```

```arduino
//Serial.print("in, ");

//Serial.print(cm);

//Serial.print("cm");

//Serial.println();

//delay(100);


servo.write(0);


if(cm < 40)

{

  servo.write(90);

  delay(2000);

}

else

{

  servo.write(0);

}


int pir = digitalRead(2);


if(pir == HIGH)

{

  digitalWrite(4,HIGH);
```

```
      delay(1000);

    }

  else if(pir == LOW)

    {

      digitalWrite(4,LOW);

    }


  float reading=analogRead(A0);

  float tempdeg=value*0.48;


  Serial.println("temperature");

  Serial.println(temperature);


  if(tempdeg > 20)

    {

      digitalWrite(12,HIGH);

      digitalWrite(13,LOW);

    }

  else

    {

      digitalWrite(12,LOW);

      digitalWrite(13,LOW);

    }

}
```

```
long microsecondsToInches(long microseconds) {

  return microseconds / 74 / 2;

}


long microsecondsToCentimeters(long microseconds) {

  return microseconds / 29 / 2;

}
```

Output: