**Assignment -1**

Python Programming

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| Assignment Date | 25 September 2022 |
| Student Name | Mr. A.G.Abishek |
| Student Roll Number | 910619104003 |
| Maximum Marks | 4 Marks |

**Question-1:**

**Design the home automation model for opening and closing of doors,temperature checking and automatic switching the lights on.**

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| **Solution:** |
| #include<Servo.h>  const int pingPin = 6;  int servoPin = 8;  Servo servo1;  void setup() {    Serial.begin(9600);  servo1.attach(servoPin);  pinMode(2,INPUT);  pinMode(4,OUTPUT);  pinMode(9,OUTPUT);  pinMode(10,OUTPUT);  pinMode(11,OUTPUT);  pinMode(A1,INPUT);  digitalWrite(2,LOW);  digitalWrite(9,HIGH);    }  void loop() {    long duration, inches, cm;  pinMode(pingPin, OUTPUT);  digitalWrite(pingPin, LOW);  delayMicroseconds(2);  digitalWrite(pingPin, HIGH);  delayMicroseconds(5);  digitalWrite(pingPin, LOW);  pinMode(pingPin, INPUT);  duration = pulseIn(pingPin, HIGH);  inches = microsecondsToInches(duration);  cm = microsecondsToCentimeters(duration);    servo1.write(0);    if(cm < 40)  {  servo1.write(90);  delay(3000);  }  else  {  servo1.write(0);  }    int pir = digitalRead(2);    if(pir == HIGH)  {  digitalWrite(4,HIGH);  delay(2000);  }  else if(pir == LOW)  {  digitalWrite(4,LOW);  }    float value=analogRead(A0);  float temperature=value\*0.48;    Serial.println("temperature");  Serial.println(temperature);    if(temperature > 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;  } |
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