

Assignment -1

Assignment Date	19 September 2022
Student Name	Mr. B.Mathavan
Student Roll Number	621319106054
Maximum Marks	2 Marks

Question-1:

Write python code for home automation using Arduino.

Solution:

```
#include<Servo.h>
Servo s;
int t;
int n;
int c;
int p;
int a;
int b;
int distance;
void setup()
{
  Serial.begin(9600);
  pinMode(2,OUTPUT);
  pinMode(3,INPUT);
  pinMode(4,OUTPUT);
  pinMode(7,OUTPUT);
  pinMode(A0,INPUT);
  pinMode(8,INPUT);
  pinMode(13,OUTPUT);
  pinMode(12,OUTPUT);
  s.attach(4);
}
void loop()
{
  // for door(ultrasonic)
  digitalWrite(2,HIGH);
  delayMicroseconds(10);
  digitalWrite(2,LOW);
  t=pulseIn(3,HIGH);
  distance=((t*0.034)/2)+2;

  if(distance<=60)
  {
    s.write(90);
```

```

}
else
{
    s.write(0);
}

// for fan(temp)
n=analogRead(A0);
c=map(((n-20)*3.04),0,1023,-40,125);
Serial.print("Celsius :");
Serial.println(c);

if(c>=20)
{
    digitalWrite(7,HIGH);
}
else
{
    digitalWrite(7,LOW);
}

//for motion detection(PIR)
p=digitalRead(8);
Serial.print("Object: ");
Serial.println(p);
digitalWrite(13,LOW);
if(p){
    Serial.println("***Motion Detected***");
    digitalWrite(13,HIGH);
}
delay(1000);
// Gas
a=analogRead(A1);
b=map(a,0,1023,0,255);
Serial.print("Gas: ");
Serial.println(b);
if(b>=85)
{
    Serial.println("***Smoke Detected!!***");
    digitalWrite(12,HIGH);
}
else
{
    digitalWrite(12,LOW);
}
}

```

