

# ASSIGNMENT – 1

## Tinkercad Programming

Assignment Date	19 September 2022
Student Name	Kalyani E
Student Roll Number	610819106021
Maximum Marks	2 Marks

### Question-1:

Make a smart home with 2-3 sensors, LED, Buzzer. in single code and connections. submit it in the platform.

### Solution:

```
#include <SPI.h> #include <Wire.h>
#include <IRremote.h>
const int relay_1 = 12;
const int relay_2 = 11;
const int relay_3 = 10;
const int relay_4 = 9;
const int mswitch_1 = 8;
const int mswitch_2 = 7;
const int mswitch_3 = 6;
const int mswitch_4 = 5;
int RECV_PIN = 3;
IRrecv irrecv(RECV_PIN);
decode_results results;
int toggleState_1 = 0;
int toggleState_2 = 0;
int toggleState_3 = 0;
int toggleState_4 = 0;
void setup() {
  Serial.begin(9600);irrecv.enableIRIn();
  pinMode(relay_1, OUTPUT);

  pinMode(relay_2, OUTPUT);
  pinMode(relay_3, OUTPUT);
  pinMode(relay_4, OUTPUT);
  pinMode(mswitch_1,INPUT_PULLUP);
  pinMode(mswitch_2,INPUT_PULLUP);
  pinMode(mswitch_3,INPUT_PULLUP);
  pinMode(mswitch_4, INPUT_PULLUP);
}
```

```

void relayOnOff(int relay){
switch(relay)

{case 1:
  if(toggleState_1 == 0){
    digitalWrite(relay_1, HIGH); // turn on relay 1toggleState_1 = 1;
  }
  else
  {
    digitalWrite(relay_1, LOW); // turn off relay 1toggleState_1 = 0;
  }
  delay(100);break;

case 2:
  if(toggleState_2 == 0)
  {
    digitalWrite(relay_2, HIGH); // turn on relay 2toggleState_2 =1;
  }
  else
  {
    digitalWrite(relay_2, LOW); // turn off relay 2toggleState_2 = 0;
  }

  delay(100);break;
case 3:
  if(toggleState_3 == 0)
  {
    digitalWrite(relay_3, HIGH); // turn on relay 3toggleState_3 = 1;
  }
  else
  {
    digitalWrite(relay_3, LOW); // turn off relay 3toggleState_3 = 0;
  }
  delay(100);break;
case 4:
  if(toggleState_4 == 0)
  {
    digitalWrite(relay_4, HIGH); // turn on relay 4toggleState_4 = 1;
  }
  else
  {
    digitalWrite(relay_4, LOW); // turn off relay 4toggleState_4 = 0;
  }
  delay(100);break;
  default : break;
  }
}

void loop()
{
  if (digitalRead(mswitch_1) == LOW){delay(200);
    relayOnOff(1);
  }
}

```

```

else if (digitalRead(mswitch_2) == LOW){delay(200);
    relayOnOff(2);
}
else if (digitalRead(mswitch_3) == LOW)
{
    delay(200);
    relayOnOff(3);
}
else if (digitalRead(mswitch_4) == LOW)
{
    delay(200);
    relayOnOff(4);
}

if (irrecv.decode(&results))
{
    switch(results.value)
    {
        case 0xFD08F7:
            relayOnOff(1);
            break;
        case 0xFD8877:
            relayOnOff(2);
            break;
        case 0xFD48B7:
            relayOnOff(3);
            break;
        case 0xFD28D7:
            relayOnOff(4);
            break;
        default : break;
    }
    irrecv.resume();
}
}

```

