ASSIGNMENT – 1

Tinkercad Programming

Assignment Date	19 September 2022
Student Name	Mr. L. Kesavan
Student Roll Number	610819106024
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;

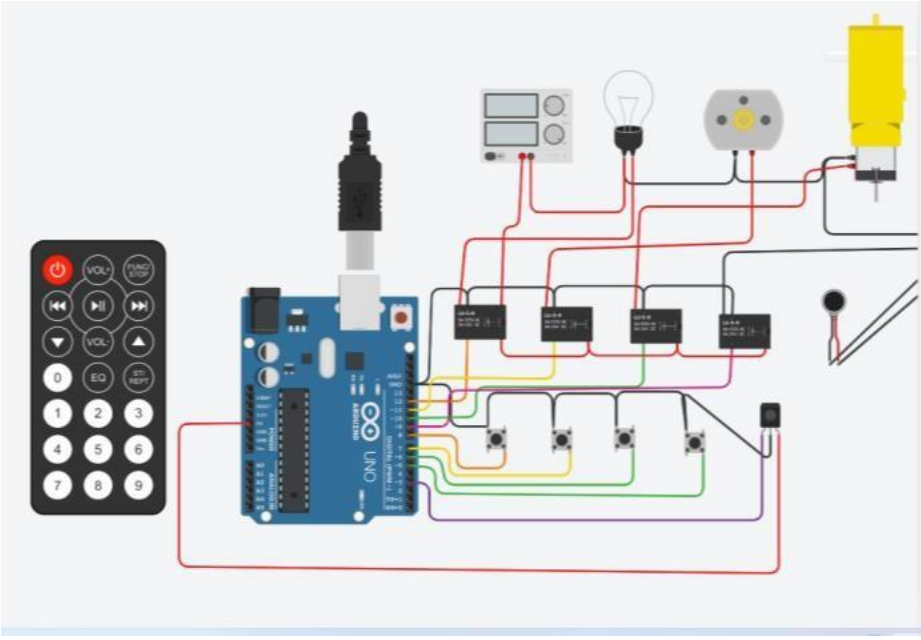
 case 2:
 if(toggleState_2 == 0)
 {
    digitalWrite(relay_2, HIGH); // turn on relay 2toggleState_2  =1;
 }
 else
 {
           digitalWrite(relay_2, LOW); // turn off relay 2toggleState_2 = 0;
 }

 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();
 }
}
```



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void setup() {

  Serial.begin(9600);
  irrecv.enableIRIn();

  pinMode(relay_1, OUTPUT);
```

Serial Monitor