ASSIGNMENT – 1

Tinkercad Programming

Assignment Date	19 September 2022
Student Name	Mr. A. Mogamath Jaleell
Student Roll Number	610819106035
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);
}
```

```cpp
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);
     }
```

```cpp
  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();
 }
}
```
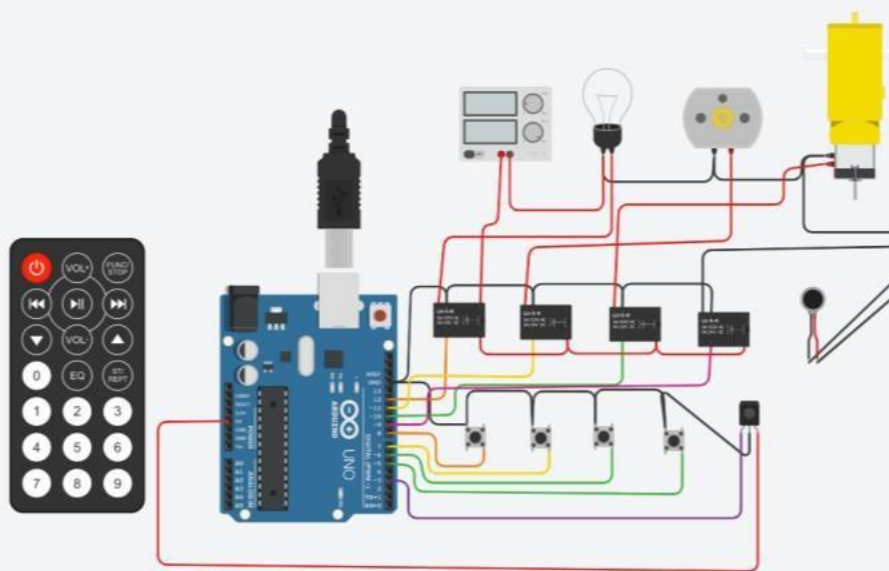
```
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2   #include <Wire.h>
3
4   #include <IRremote.h>
5
6   const int relay_1 = 12;
7   const int relay_2 = 11;
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11
12  const int mswitch_1 = 8;
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15  const int mswitch_4 = 5;
16
17  int RECV_PIN = 3;
18
19  IRrecv irrecv(RECV_PIN);
20  decode_results results;
21
22
23  int toggleState_1 = 0;
24  int toggleState_2 = 0;
25  int toggleState_3 = 0;
26  int toggleState_4 = 0;
27
28  void setup() {
29
30      Serial.begin(9600);
31      irrecv.enableIRIn();
32
33      pinMode(relay_1, OUTPUT);
```

Serial Monitor