**ASSIGNMENT 1**

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DESIGN PART



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CODING PART

#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 1

toggleState\_1 = 1;

}

else{

digitalWrite(relay\_1, LOW); // turn off relay 1

toggleState\_1 = 0;

}

delay(100);

break;

case 2:

if(toggleState\_2 == 0){

digitalWrite(relay\_2, HIGH); // turn on relay 2

toggleState\_2 = 1;

}

else{

digitalWrite(relay\_2, LOW); // turn off relay 2

toggleState\_2 = 0;

}

delay(100);

break;

case 3:

if(toggleState\_3 == 0){

digitalWrite(relay\_3, HIGH); // turn on relay 3

toggleState\_3 = 1;

}else{

digitalWrite(relay\_3, LOW); // turn off relay 3

toggleState\_3 = 0;

}

delay(100);

break;

case 4:

if(toggleState\_4 == 0){

digitalWrite(relay\_4, HIGH); // turn on relay 4

toggleState\_4 = 1;

}

else{

digitalWrite(relay\_4, LOW); // turn off relay 4

toggleState\_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();

}

}