Simple Simon

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RBT173 – Introduction to Microcontrollers

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I have duplicated the code from the Professors example exactly. The pins are slightly different than the professor but that shouldn’t matter. I even rewrote the code from scratch in the Arduino IDE to make sure all of the brackets were good. The code compiles but doesn’t work as it should. I did it in both Tinkercad and on a bread board with the Arduino and neither worked right. I would sit and play with it but I have no idea what is wrong. I can’t get it to play a good sequence. I have included the code with this document. I have also included the video link to a project that doesn’t work. Please let me know what I did wrong because I can’t figure it out.

<https://youtu.be/jtDMhho-JY0> - Simple Simon video

int LEDPins[4] = {2,3,4,5};

int buttonPins[4] = {8,9,10,11};

int LEDSequence[32];

void setup(){

Serial.begin(9600);

//set our input and output pins

for(int i = 0; i < 4; i++){

pinMode(LEDPins[i], OUTPUT);

pinMode(buttonPins[i], INPUT\_PULLUP);

}

randomSeed(analogRead(A0));

}

void loop(){

//create bool for failure

bool lose = false;

//create random sequence for lights

Serial.println("The sequence is: ");

for(int i = 0; i < 4; i++){

LEDSequence[i] = random(4);

Serial.println(LEDSequence[i]);

delay(250);

}

//Game starts here

//Level Loop

for(int level = 0; level < 32; level++){

//delay(500); //added this to slow down

//show the loop

for(int i = 0; i < level; i++){

digitalWrite(LEDPins[LEDSequence[i]], HIGH);

delay(750);

}

delay(1000);

//wait for a response loop

for(int i = 0; i < level; i++){

int button = -1;

while(button < 0){

button = buttonPressed();

}

//telling user which button is pressed

digitalWrite(LEDPins[button], HIGH);

delay(250);

digitalWrite(LEDPins[button], LOW);

delay(250);

//check against sequence

if(LEDSequence[i] != button){

lose = true;

break;

//win or lose loop

if(lose == true){

loseSeq();

break;

}else if(lose == false && level == 31){

winSeq();

}

}//end of loop

}

}

}

//list of methods

//sequence for win

void winSeq(){

for(int i = 0; i < 4; i++){

for(int j = 0; j < 4; j++){

digitalWrite(LEDPins[j], HIGH);

}

//delay(500);

for(int j = 0; j < 4; j++){

digitalWrite(LEDPins[j], LOW);

}

delay(500);

}

}

//sequence for lose

void loseSeq(){

for(int j = 0; j < 4; j++){

digitalWrite(LEDPins[j], HIGH);

}

for(int j = 0; j < 4; j++){

digitalWrite(LEDPins[j], LOW);

}

}

//check for debounce

bool isPressed(int buttonChk){

bool pressed = false;

if(digitalRead(buttonPins[buttonChk]) == LOW){

delay(10);

while(digitalRead(buttonPins[buttonChk]) == LOW){}

delay(10);

pressed = true;

}

return pressed;

}

//detect which button is pressed

int buttonPressed(){

int buttonNum = -1;

for(int j = 0; j < 4; j++){

if(isPressed(j) == true){

buttonNum = j;

}

}

}