

Date: 1/12/20

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```
#include <Arduino.h>
#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
```

```
#define SCREEN_WIDTH 128
#define SCREEN_HEIGHT 64
Adafruit_SSD1306
display(SCREEN_WIDTH)
```

```
#define LED1 19
#define LED2 18
#define LED3 5
```

```
#define BTN_MODE 35
#define BTN_RESET 34
```

```
Volatile int mode = 0;
```

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// For Interrupt

volatile bool modeChanged = false;

volatile bool resetPressed = false;

// Debounce Via Millis ()

unsigned long lastModePress = 0;

unsigned long lastResetPress = 0;

Const unsigned long debounceDelay

= 200; // 200 ms debounce

unsigned long previousMillis = 0;

bool ledState = LOW;

int #define PWM-CHO

#define FREQ 5000

#define RES 8

int brightness = 0;

int fadeAmount = 15;

unsigned long lastFade = 0;

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Void IRAM - ATTR

BTN_Pressed_Mode () {

 unsigned long current Time =
 millis ();

 if (current Time - last Mode Press >
 debounce Delay) {

 mode changed = true;

 last Mode Press = Current Time;

 }

}

void IRAM . ATTR

BTN_Pressed_Reset () {

 void Show Mode (const char * text) {

 display Clear Display();

 display Set Text Size(2);

 display Set Cursor ((SCREEN)-WIDTH -

 Strlen (text)*12) / 2;

 (SCREEN - HEIGHT - 16) / 2);

 display Print (text);

 display display (); }

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```
Void Setup () {  
    if (1  
        display.begin (SSD1306_SWITCHCA_PVCC,  
        0x3C)) {  
        for (;;) // Don't Proceed if OLED  
        not found  
    }  
  
    display.clearDisplay.  
    set color  
    (SSD1306_WHITE);  
  
    display.set textSize (2); // Bigger  
    text  
  
    display.setCursor (10, 25)  
    display.println ("Mode 0: OFF");  
    display.display();
```

PinMode (LED1, OUTPUT);

PinMode (LED2, OUTPUT);

PinMode (BTN_MODE),

INPUT_PULLUP

PinMode (BTN_Reset,

INPUT_PULLUP

// Default OFF

digital Write (LED1, LOW);

digital Write (LED2, LOW);

digital Write (LED3, LOW);

// Using Interrupt

attachInterrupt (Digital Pin To Interrupt (

BTN_MODE), BTN_Pressed_Mode,
FALLING);

attachInterrupt (Digital Pin To
Interrupt (BTN_MODE), BTN_Pressed
Mode, RESET, FALLING);

ledc Setup (PWM_CH, FREQ, RES);

ledc Attach Pin (LED3, PWM_CH);

}

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```
void loop () {
    // Reset logic
    if (resetPressed = false);
        ShowMode ("Default");

    }

    // Mode change logic
    if (modeChanged) { mode++;
        if (mode > 4 mode = 0;
            modeChanged = false;
    }

    // LED behavior
    switch (Mode) {
        Case 0; // OFF (Default / reset)
            ShowMode ("Default");
            digitalWrite (LED1, LOW);
            digitalWrite (LED2, LOW);
            ledcWrite (PWM-CH, 0);
            break;

        Case 1 // OFF
            ShowMode ("OFF");
            digitalWrite (LED1, LOW);
            digitalWrite (LED2, LOW);
            ledcWrite (PWM-CH, 0);
    }
}
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break;

if (millis() - Previous Millis \geq 500)

{

Previous Millis = millis();

Led state = ! Led State

if (led state)

digital write (LED1 HIGH);

digital Write (LED2 LOW);

break;

Case 3; // ON

Show Model ("NO")

digital Write (LED1, HIGH);

digital Write (LED2, HIGH);

led cWrite (PWM-CH,0);

break;

Case 4;

Show Mode ("PWM");

digital Write (LED1, LOW);

digitalWrite (LED2, LOW);

if (millis() - last fade \geq 2511)

every 20 ms fade \geq 2

last fade = millis()

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LedcWrite (PMW) CH-, Brightness);

brightness + = fade Amount

if (brightness <= 0 || brightness

>= 255. fade Amount = -

fade Amount;

}

break