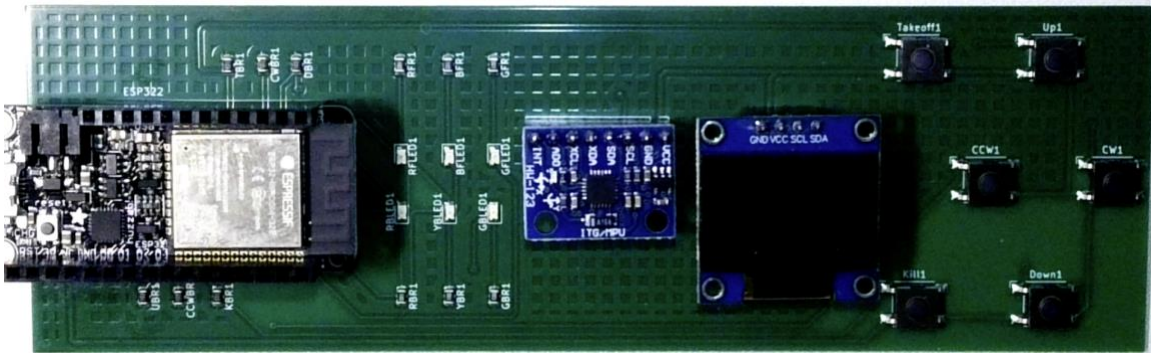# CSC 5930 9030 Spring 2025 Week 2 Assignment

Assembly Tests completed: LEDs, Serial Echo, Button Test, Gesture Tester. Submit at least 10 screenshots showing:

EEK Finished Assembly photo

LEDs IDE

LEDs Serial Monitor

Adafruit ESP32 Feather

Blink_EEK_ifdefs.ino

```
23   */
24   // #define Clone
25   // #define HiLetgo
26   #define Huzzah
27   // #define DevKit
28   // #define FeatherS3
29   // #define PCB
30
```

Output   Serial Monitor ✕

Message (Enter to send message to 'Adafruit ESP32 Feather' on '/dev/cu.usbserial-022AF008')

```
10:36:46.897 -> load:0x40080400,len:3028
10:36:46.897 -> entry 0x400805e4
10:36:47.058 ->
10:36:47.058 -> Serial Connected
10:36:47.058 -> TOP RED ON!
10:36:49.041 -> TOP RED OFF!
10:36:51.058 -> BLUE ON!
10:36:53.045 -> BLUE OFF!
10:36:55.035 -> TOP GREEN ON!
10:36:57.048 -> TOP GREEN OFF!
10:36:59.059 -> BOTTOM RED ON!
10:37:01.044 -> BOTTOM RED OFF!
10:37:03.057 -> YELLOW ON!
10:37:05.043 -> YELLOW OFF!
10:37:07.059 -> BOTTOM GREEN ON!
10:37:09.043 -> BOTTOM GREEN OFF!
```

Serial Echo IDE

✓ → ⟳   ⟱ **Adafruit ESP32 Feather** ▾

Serial-Echo.ino

```
13      — blue anode: digital pin 6 through 220 ohm resistor
14      — cathode: GND
15
16      created 13 Apr 2012
17      by Tom Igoe
18      modified 14 Mar 2016
19      by Arturo Guadalupi
20
21      This example code is in the public domain.
22
23      https://www.arduino.cc/en/Tutorial/BuiltInExamples/ReadASCIIString
24    */
25    #include <Wire.h>
26    #include <Adafruit_SSD1306.h>
27
28    #define SCREEN_WIDTH 128  // OLED display width, in pixels
29    #define SCREEN_HEIGHT 32  // OLED display height, in pixels
30
31    Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire);
32
33    void setup() {
34        Serial.begin(115200);
```

Output   Serial Monitor ✕

Message (Enter to send message to 'Adafruit ESP32 Feather' on '/dev/cu.usbserial-02650333')

```
19:03:18.071 -> ets Jul 29 2019 12:21:46
19:03:18.071 ->
19:03:18.071 -> rst:0x1 (POWERON_RESET),boot:0x13 (SPI_FAST_FLASH_BOOT)
19:03:18.071 -> configsip: 0, SPIWP:0xee
19:03:18.071 -> clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00
19:03:18.071 -> mode:DIO, clock div:1
19:03:18.071 -> load:0x3fff0030,len:4688
19:03:18.071 -> load:0x40078000,len:15460
19:03:18.071 -> ho 0 tail 12 room 4
19:03:18.071 -> load:0x40080400,len:4
19:03:18.071 -> load:0x40080404,len:3196
19:03:18.071 -> entry 0x400805a4
```

Serial Echo Serial Monitor


```
Serial-Echo.ino
13    — blue anode: digital pin 6 through 220 ohm resistor
14    — cathode: GND
15
16    created 13 Apr 2012
17    by Tom Igoe
18    modified 14 Mar 2016
19    by Arturo Guadalupi
20
21    This example code is in the public domain.
22
23    https://www.arduino.cc/en/Tutorial/BuiltInExamples/ReadASCIIString
24  */
25  #include <Wire.h>
26  #include <Adafruit_SSD1306.h>
27
28  #define SCREEN_WIDTH 128   // OLED display width, in pixels
29  #define SCREEN_HEIGHT 32   // OLED display height, in pixels
30
31  Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire);
32
33  void setup() {
34    Serial.begin(115200);
```
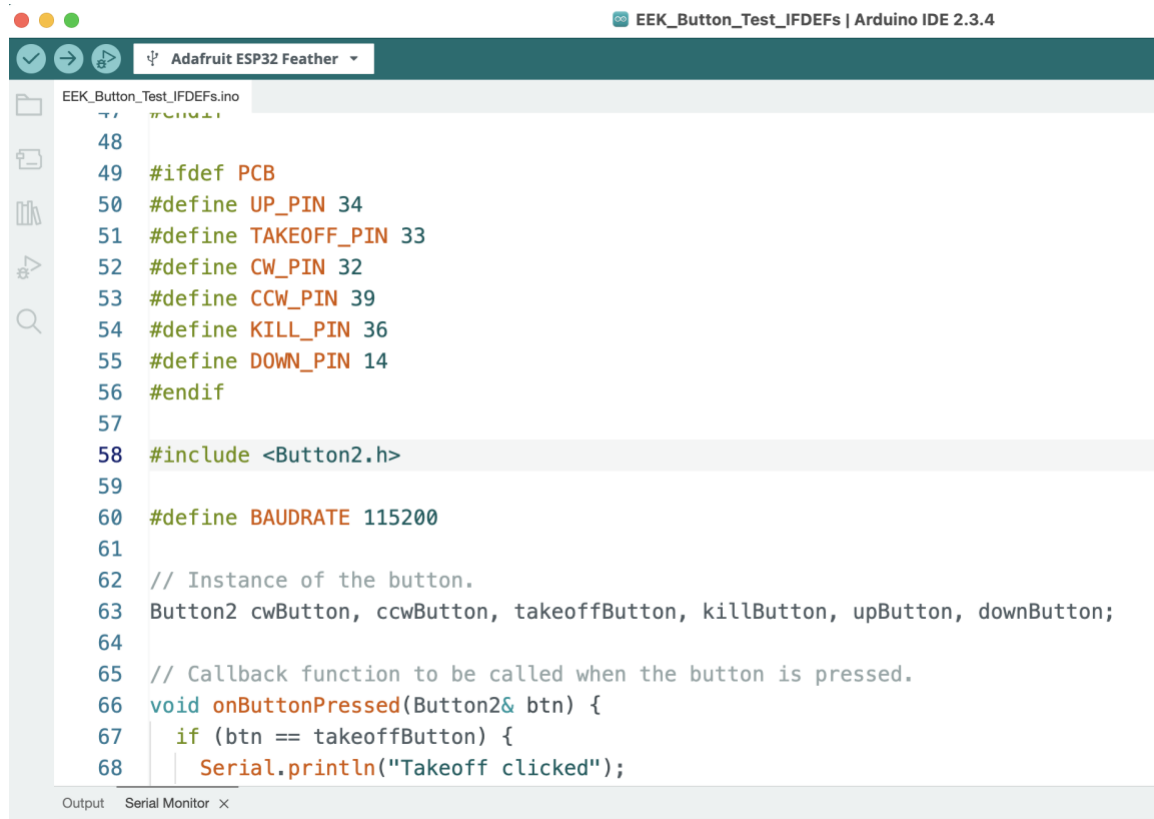
Output   Serial Monitor ✕

Hello World

Serial Monitor OLED photo
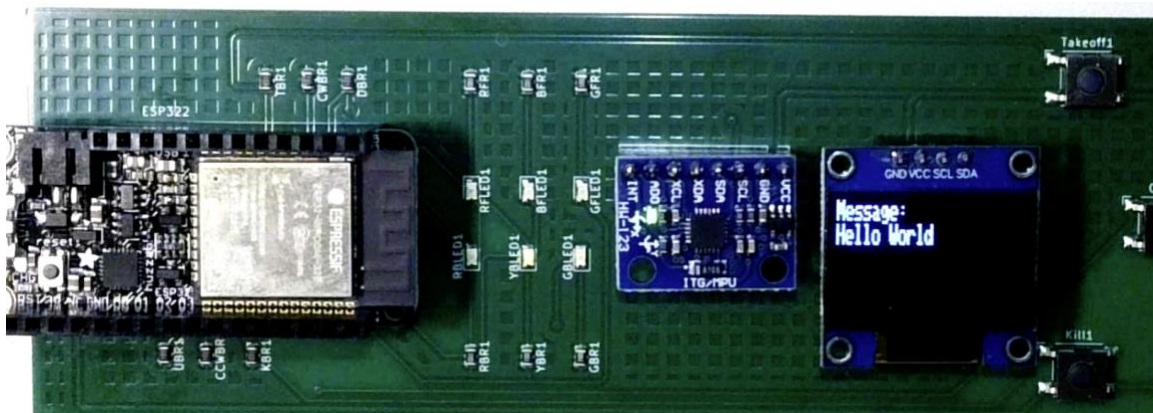
Button Test IDE

Adafruit ESP32 Feather ▾

EEK_Button_Test_IFDEFs.ino

```
47    #endif
48
49    #ifdef PCB
50    #define UP_PIN 34
51    #define TAKEOFF_PIN 33
52    #define CW_PIN 32
53    #define CCW_PIN 39
54    #define KILL_PIN 36
55    #define DOWN_PIN 14
56    #endif
57
58    #include <Button2.h>
59
60    #define BAUDRATE 115200
61
62    // Instance of the button.
63    Button2 cwButton, ccwButton, takeoffButton, killButton, upButton, downButton;
64
65    // Callback function to be called when the button is pressed.
66    void onButtonPressed(Button2& btn) {
67      if (btn == takeoffButton) {
68        Serial.println("Takeoff clicked");
```

Output   Serial Monitor ✕

Button Test Serial Monitor

Adafruit ESP32 Feather

EEK_Button_Test_IFDEFs.ino

```
47   #endif
48
49   #ifdef P
50   #define        macro  CCW_PIN
51   #define
52   #define        #define CCW_PIN 39
53   #define CCW_PIN 39
54   #define KILL_PIN 36
55   #define DOWN_PIN 14
56   #endif
57
58   #include <Button2.h>
59
60   #define BAUDRATE 115200
61
62   // Instance of the button.
63   Button2 cwButton, ccwButton, takeoffButton, killButton, upButton, downButton;
64
65   // Callback function to be called when the button is pressed.
66   void onButtonPressed(Button2& btn) {
67     if (btn == takeoffButton) {
68       Serial.println("Takeoff clicked");
```

Output   Serial Monitor ✕

Message (Enter to send message to 'Adafruit ESP32 Feather' on '/dev/cu.usbserial-02650333')

```
19:08:16.190 -> load:0x40080404,len:3196
19:08:16.190 -> entry 0x400805a4
19:08:16.384 ->
19:08:16.384 -> Serial Connected
19:08:16.384 ->
19:08:16.384 -> >>> EEK buttons pressed example <<<
19:08:21.065 -> Up clicked
19:08:22.466 -> CW clicked
19:08:24.641 -> Down clicked
19:08:26.791 -> CCW clicked
19:08:28.579 -> Takeoff clicked
19:08:34.223 -> Kill clicked
```

Gesture Tester IDE

Adafruit ESP32 Feather

gesture_tester_ifdefs.ino

```
41
42   #ifdef PCB
43   // LED configs
44   #define LED_FORWARD 25
45   #define LED_BACK 15
46   #define LED_RIGHT 21
47   #define LED_LEFT 26
48   #endif
49
50   #ifdef Nano
51   // LED configs
52   #define LED_FORWARD D6
53   #define LED_BACK A1
54   #define LED_RIGHT D5
55   #define LED_LEFT D7
56   #endif
57
58   MPU6050 mpu(Wire);
59   Adafruit_SSD1306 display = Adafruit_SSD1306(128, 32, &Wire);
60   unsigned long displayTimer = 0;
61   unsigned long serialTimer = 0;
62
63   int Roll;
64   int Pitch;
```

Gesture Tester Serial Monitor

Gesture Tester EEK photo