**TASK-2**

#include <Wire.h>

#include <Adafruit\_GFX.h>

#include <Adafruit\_SSD1306.h>

#define SCREEN\_WIDTH 128

#define SCREEN\_HEIGHT 64

Adafruit\_SSD1306 display(SCREEN\_WIDTH, SCREEN\_HEIGHT, &**Wire**, -1);

#define BUTTON\_PIN 14

#define LED\_PIN 27

#define LONG\_PRESS\_TIME 1000 // 1 second

bool buttonState = HIGH;

bool lastButtonState = HIGH;

unsigned long pressedTime = 0;

unsigned long releasedTime = 0;

bool isPressing = false;

bool isLongDetected = false;

void showMessage(const char\* msg) {

  display.clearDisplay();

  display.setTextSize(2);

  display.setTextColor(SSD1306\_WHITE);

  display.setCursor(10, 25);

  display.print(msg);

  display.display();

}

void setup() {

  pinMode(BUTTON\_PIN, INPUT\_PULLUP);

  pinMode(LED\_PIN, OUTPUT);

**Wire**.begin();

  if (!display.begin(SSD1306\_SWITCHCAPVCC, 0x3C)) {

    for (;;); // stop if OLED not found

  }

  display.clearDisplay();

  display.setTextSize(1);

  display.setTextColor(SSD1306\_WHITE);

  display.setCursor(10, 10);

  display.print("System Ready!");

  display.display();

  delay(1000);

  showMessage("Waiting...");

}

void loop() {

  buttonState = digitalRead(BUTTON\_PIN);

  // Button pressed

  if (buttonState == LOW && lastButtonState == HIGH) {

    pressedTime = millis();

    isPressing = true;

    isLongDetected = false;

  }

  // Button released

  else if (buttonState == HIGH && lastButtonState == LOW) {

    releasedTime = millis();

    isPressing = false;

    unsigned long pressDuration = releasedTime - pressedTime;

    if (pressDuration < LONG\_PRESS\_TIME) {

      showMessage("Short!");

      digitalWrite(LED\_PIN, HIGH);

      delay(300);

      digitalWrite(LED\_PIN, LOW);

      showMessage("Waiting...");

    }

  }

  // Long press detection

  if (isPressing && !isLongDetected) {

    if (millis() - pressedTime > LONG\_PRESS\_TIME) {

      showMessage("Long!");

      isLongDetected = true;

      // Blink LED 3 times

      for (int i = 0; i < 3; i++) {

        digitalWrite(LED\_PIN, HIGH);

        delay(150);

        digitalWrite(LED\_PIN, LOW);

        delay(150);

      }

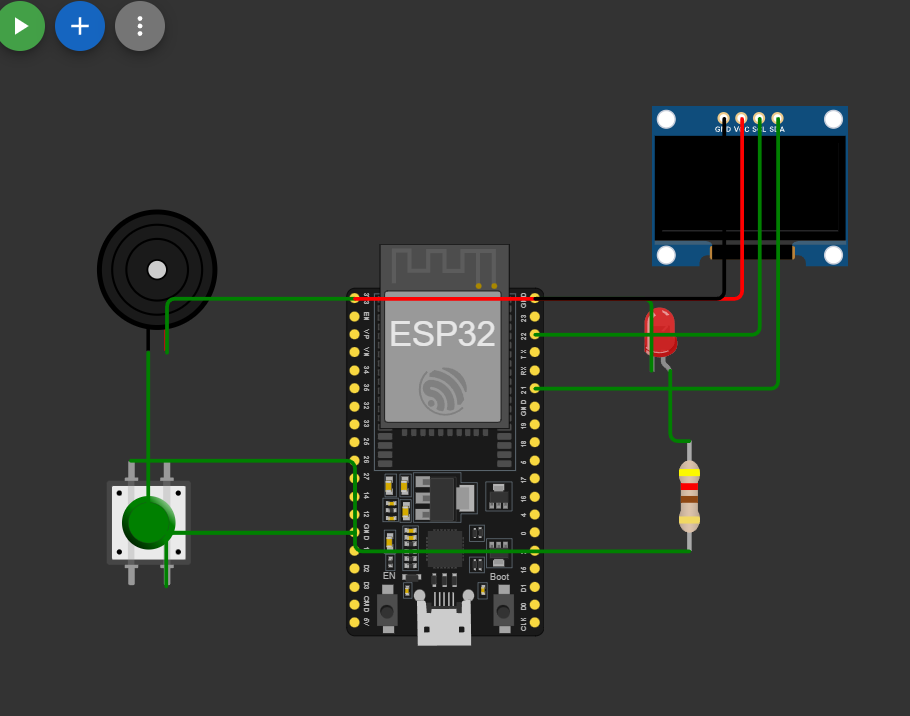
      showMessage("Waiting...");

    }

  }

  lastButtonState = buttonState;

}

****