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SHIFT AWAL : A

SHIFT AKHIR : C

Tugas Pertemuan 8

1. Modifikasi Blink: Ubah kecepatan kedip LED (misalnya, nyala 0.5 detik, mati 2 detik).

2. Multiple LEDs: Tambahkan 2 LED lagi dengan warna berbeda. Buat program untuk menyalakan ketiga LED secara bergantian (seperti lampu lalu lintas sederhana).

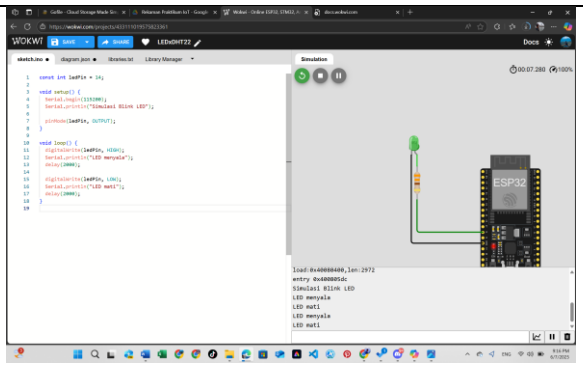
3. Tombol Input: Tambahkan komponen "Pushbutton" (Tombol Tekan). Buat program di mana LED akan menyala ketika tombol ditekan, dan mati ketika tombol dilepas. (Hint: gunakan digitalRead() dan resistor pull-up/pull-down).

4. Kombinasi Sensor dan Aktuator: Baca data dari sensor DHT22. Jika suhu melebihi batas tertentu (misalnya 30°C), nyalakan LED merah. Jika suhu di bawah batas itu, nyalakan LED hijau.

Jawab :

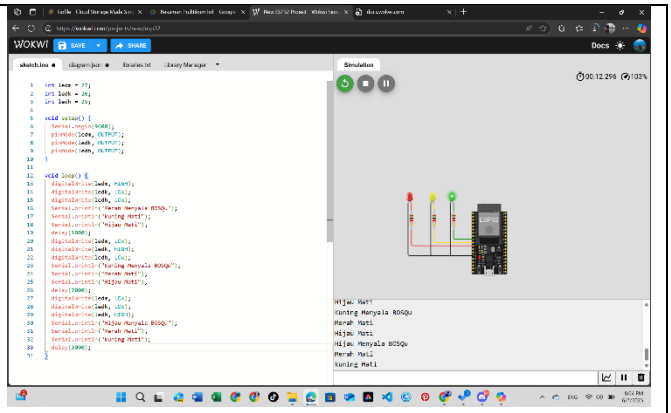
1. Modifikasi Blink

```
const int ledPin = 14;

void setup() {
  Serial.begin(115200);
  Serial.println("Simulasi Blink LED");

  pinMode(ledPin, OUTPUT);
}

void loop() {
  digitalWrite(ledPin, HIGH);
  Serial.println("LED menyala");
  delay(2000);

  digitalWrite(ledPin, LOW);
  Serial.println("LED mati");
  delay(2000);
}
```



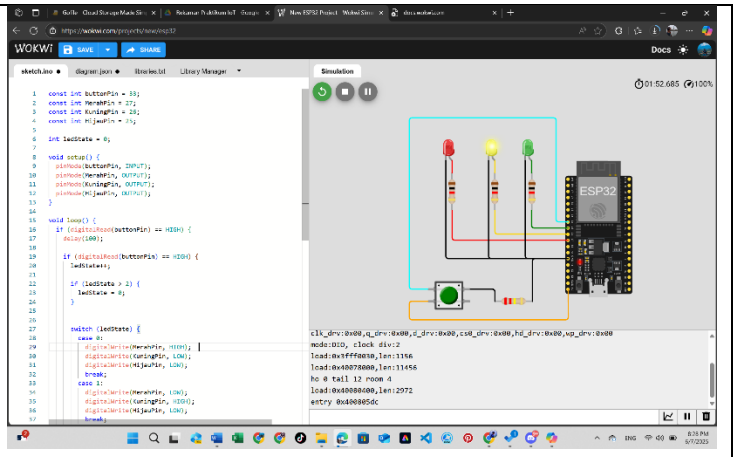
2. Lampu Lalu Lintas

```
int ledm = 27;
int ledk = 26;
int ledh = 25;

void setup() {
  Serial.begin(9600);
  pinMode(ledm, OUTPUT);
  pinMode(ledk, OUTPUT);
  pinMode(ledh, OUTPUT);
}

void loop() {
  digitalWrite(ledm, HIGH);
  digitalWrite(ledk, LOW);
  digitalWrite(ledh, LOW);
  Serial.println("Merah Menyala
BOSQu");
  Serial.println("kuning Mati");
  Serial.println("Hijau Mati");
  delay(1000);
  digitalWrite(ledm, LOW);
  digitalWrite(ledk, HIGH);
  digitalWrite(ledh, LOW);
  Serial.println("Kuning Menyala
BOSQu");
  Serial.println("Merah Mati");
  Serial.println("Hijau Mati");
  delay(2000);
  digitalWrite(ledm, LOW);
  digitalWrite(ledk, LOW);
  digitalWrite(ledh, HIGH);
  Serial.println("Hijau Menyala
BOSQu");
  Serial.println("Merah Mati");
  Serial.println("kuning Mati");
  delay(3000);
}
```



3. Push Button

```
const int buttonPin = 33;
const int MerahPin = 27;
const int KuningPin = 26;
const int HijauPin = 25;

int ledState = 0;

void setup() {
  pinMode(buttonPin, INPUT);
  pinMode(MerahPin, OUTPUT);
  pinMode(KuningPin, OUTPUT);
  pinMode(HijauPin, OUTPUT);
}

void loop() {
  if (digitalRead(buttonPin) ==
HIGH) {
    delay(100);

    if (digitalRead(buttonPin) ==
HIGH) {
      ledState++;

      if (ledState > 2) {
        ledState = 0;
      }


      switch (ledState) {
        case 0:
          digitalWrite(MerahPin,
HIGH);
          digitalWrite(KuningPin,
LOW);
          digitalWrite(HijauPin,
LOW);
          break;
        case 1:
          digitalWrite(MerahPin,
LOW);
          digitalWrite(KuningPin,
HIGH);
          digitalWrite(HijauPin,
LOW);
          break;
```



```
        case 2:
          digitalWrite(MerahPin,
LOW);
          digitalWrite(KuningPin,
LOW);
          digitalWrite(HijauPin,
HIGH);
          break;
      }
    }
  }
}
```

4. DHT22 kombinasi dengan LED

```
#include <DHT.h>
DHT dht(13, DHT22);

void setup(){
 pinMode(14, OUTPUT);
 pinMode(12, OUTPUT);
 Serial.begin(9600);
 dht.begin();
}

void loop(){
 float kel = dht.readHumidity();
 float temp = dht.readTemperature();

if(temp < 30 ){
  digitalWrite(14, HIGH);
  digitalWrite(12, LOW);
}
if(temp >= 30 ){
  digitalWrite(14, LOW);
  digitalWrite(12, HIGH);
}
 Serial.print("Kelembapan: ");
 Serial.println(kel);
 Serial.print("Suhu: ");
 Serial.println(temp);
 delay(2000);
}
```