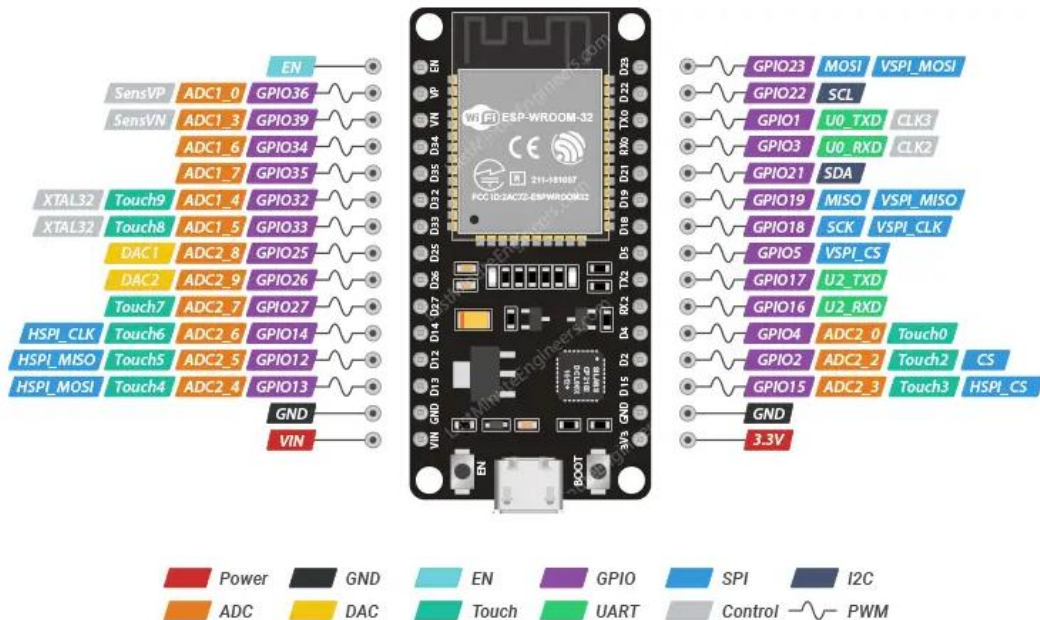BASIC LAB 1

ESP 32:

ESP32 Pinout

The ESP32 DevKit V1 development board has 30 pins in total. For convenience, pins with similar functionality are grouped together. The pinout is as follows:

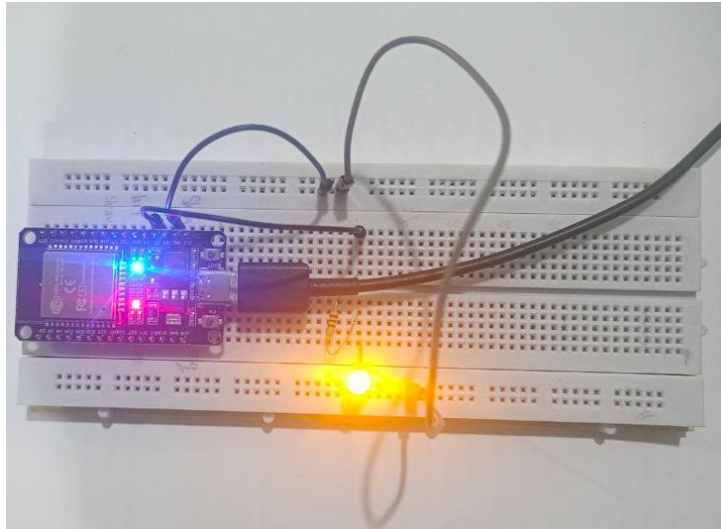| Jenis Pin	Contoh GPIO	Kegunaan
Analog Input	32, 33, 34, 35, 36, 39	Sensor (LDR, suhu)
Digital Input/Output	2, 4, 5, 12-27	LED, suis, buzzer
Input Sahaja	34, 35, 36, 39	Sensor sahaja
Elak Digunakan	0, 1, 3, 6–11	Digunakan sistem

PRAKTIKAL & KOD

PRAKTIKAL 1 : NYALAKAN LED 1

```
DOIT ESP32 DEVKIT V1

sketch_aug14a.ino
1    int ledPin = 2; // GPIO2 (built-in LED pada kebanyakan ESP32)
2
3    void setup() {
4      // Tetapkan pin LED sebagai OUTPUT
5      pinMode(ledPin, OUTPUT);
6    }
7
8    void loop() {
9      // LED ON
10     digitalWrite(ledPin, HIGH);
11
12   }
```

SAMBUNGAN LITAR

PRAKTIKAL 2 : BLINK LED1


```
1    // Tetapkan pin LED
2    int ledPin = 2; // GPIO2 (built-in LED pada kebanyakan ESP32)
3
4    void setup() {
5      // Tetapkan pin LED sebagai OUTPUT
6      pinMode(ledPin, OUTPUT);
7    }
8
9    void loop() {
10     // LED ON
11     digitalWrite(ledPin, HIGH);
12     delay(1000); // tunggu 1 saat
13
14     // LED OFF
15     digitalWrite(ledPin, LOW);
16     delay(1000); // tunggu 1 saat
17   }
18
```

PRACTICAL LAB 1A:

Berdasarkan sambungan litar yang di beri, buat tambahan menggunakan 2 LED. Screen shot jawapan anda seperti maklumat berikut :

    i.   Sambungan litar 2 LED
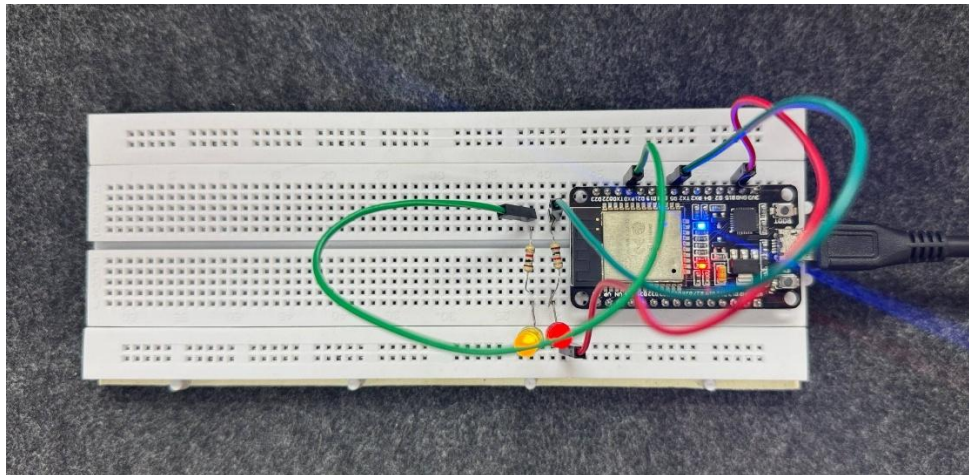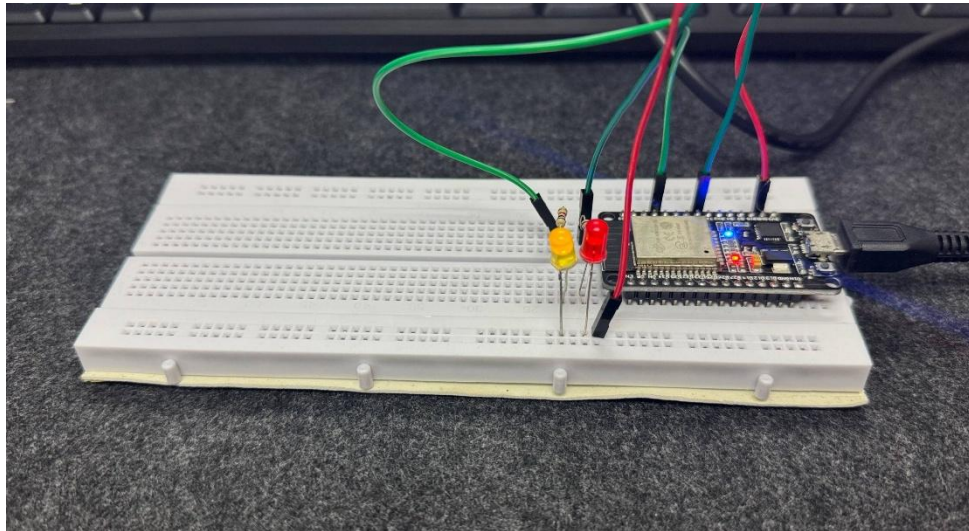
ii.   Koding Arduino untuk menyalakan 2 LED

sketch_aug18b.ino

```
1   int ledPin = 2;
2
3   int ledPin1 = 4;
4
5
6   void setup() {
7     // put your setup code here, to run once:
8   pinMode(ledPin, OUTPUT);
9
10  pinMode(ledPin1, OUTPUT);
11
12  }
13
14  void loop() {
15    digitalWrite(ledPin, HIGH);
16
17    digitalWrite(ledPin1, HIGH);
18
19  }
20
```

iii.   Koding Arduino untuk Blink 2 LED.
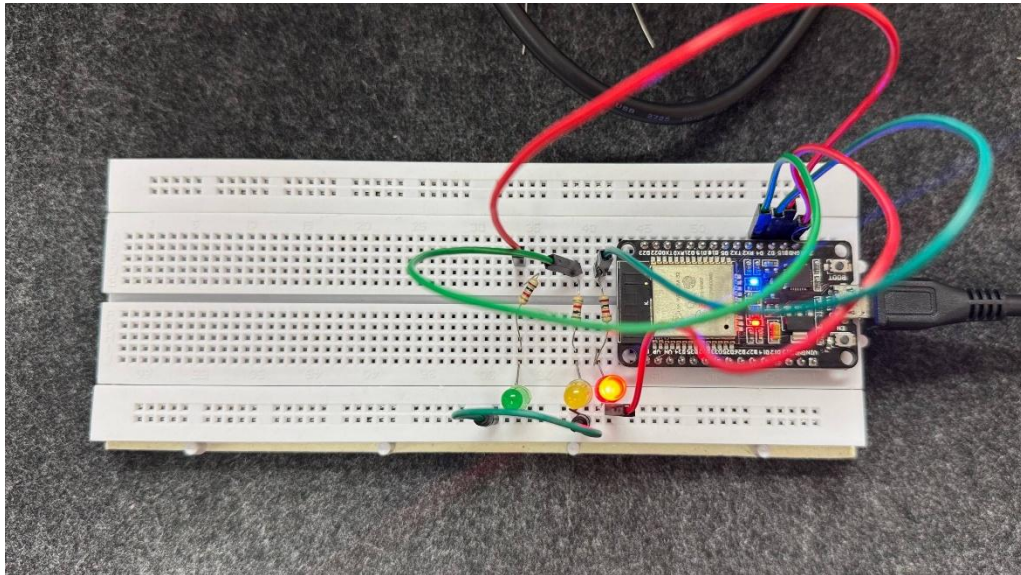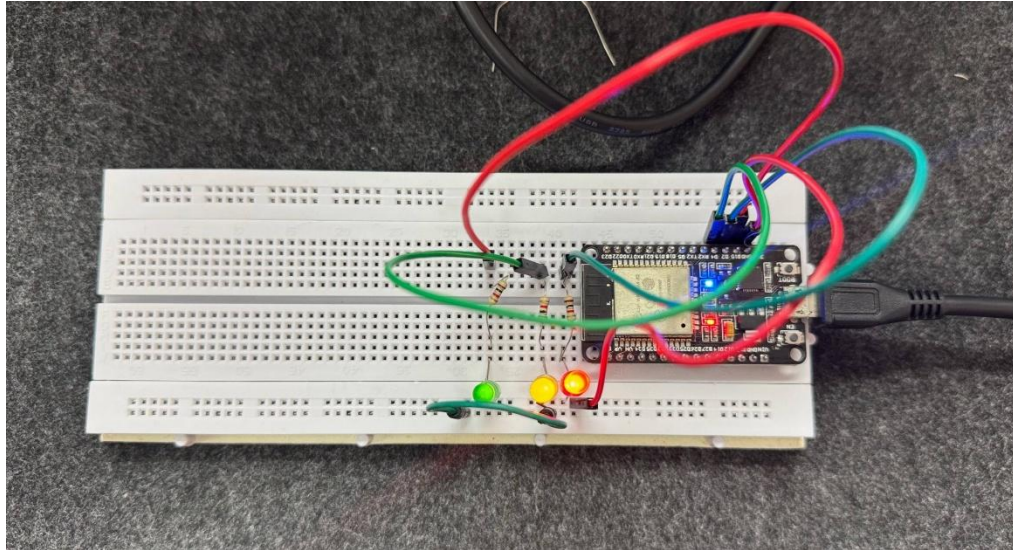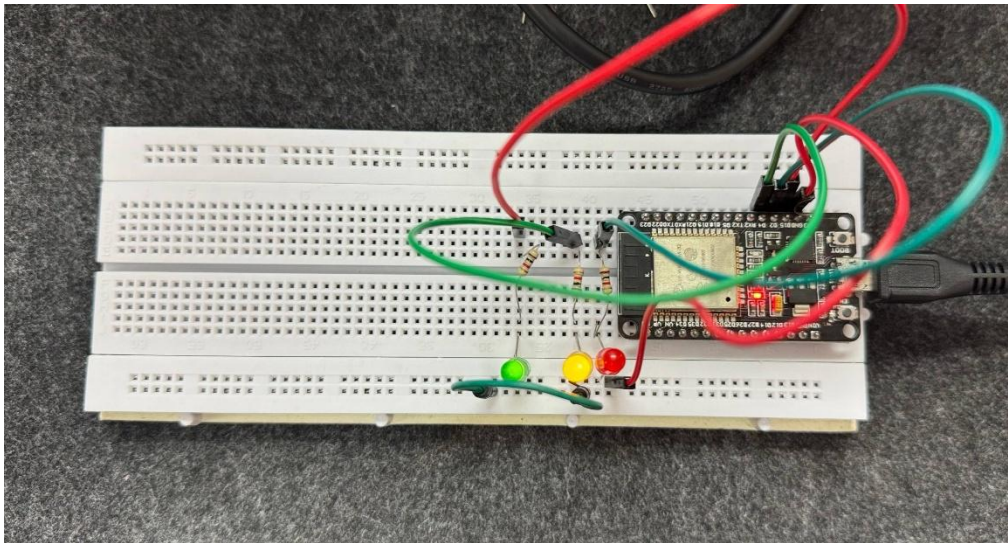
sketch_aug18b.ino

```
1   int ledPin = 2;
2
3   int ledPin1 = 4;
4
5
6   void setup() {
7     // put your setup code here, to run once:
8   pinMode(ledPin, OUTPUT);
9
10  pinMode(ledPin1, OUTPUT);
11
12  }
13
14  void loop() {
15    digitalWrite(ledPin, HIGH);
16    delay(1000);
17    digitalWrite(ledPin1, HIGH);
18    delay(1000);
19
20    digitalWrite(ledPin, LOW);
21    delay(1000);
22    digitalWrite(ledPin1, LOW);
23    delay(1000);
24
25  }
26
```

PRACTICAL LAB 1B:

Berdasarkan sambungan litar yang di beri, buat tambahan menggunakan 3 LED. Screen shot jawapan anda seperti maklumat berikut :

    i.   Sambungan litar 3 LED

ii.   Koding Arduino untuk menyalakan 3 LED

```
sketch_aug18b.ino
 1   int ledPin = 2;
 2
 3   int ledPin1 = 4;
 4
 5   int ledPin2 = 15;
 6
 7   void setup() {
 8     // put your setup code here, to run once:
 9   pinMode(ledPin, OUTPUT);
10
11   pinMode(ledPin1, OUTPUT);
12
13   pinMode(ledPin2, OUTPUT);
14   }
15
16   void loop() {
17     digitalWrite(ledPin, HIGH);
18
19     digitalWrite(ledPin1, HIGH);
20
21     digitalWrite(ledPin2, HIGH);
22
23   }
24
```

iii.   Koding Arduino untuk Blink 3 LED.

```
sketch_aug18b.ino
 1   int ledPin = 2;
 2
 3   int ledPin1 = 4;
 4
 5   int ledPin2 = 15;
 6
 7   void setup() {
 8     // put your setup code here, to run once:
 9   pinMode(ledPin, OUTPUT);
10
11   pinMode(ledPin1, OUTPUT);
12
13   pinMode(ledPin2, OUTPUT);
14   }
15
16   void loop() {
17     digitalWrite(ledPin, HIGH);
18     delay(1000);
19     digitalWrite(ledPin1, HIGH);
20     delay(1000);
21     digitalWrite(ledPin2, HIGH);
22     delay(1000);
23
24     digitalWrite(ledPin, LOW);
25     delay(1000);
26     digitalWrite(ledPin1, LOW);
27     delay(1000);
28     digitalWrite(ledPin2, LOW);
29     delay(1000);
30   }
```

Berdasarkan sambungan litar yang di beri, buat tambahan buzzer. Screen shot jawapan anda seperti maklumat berikut :

    i.   Gambar buzzer.
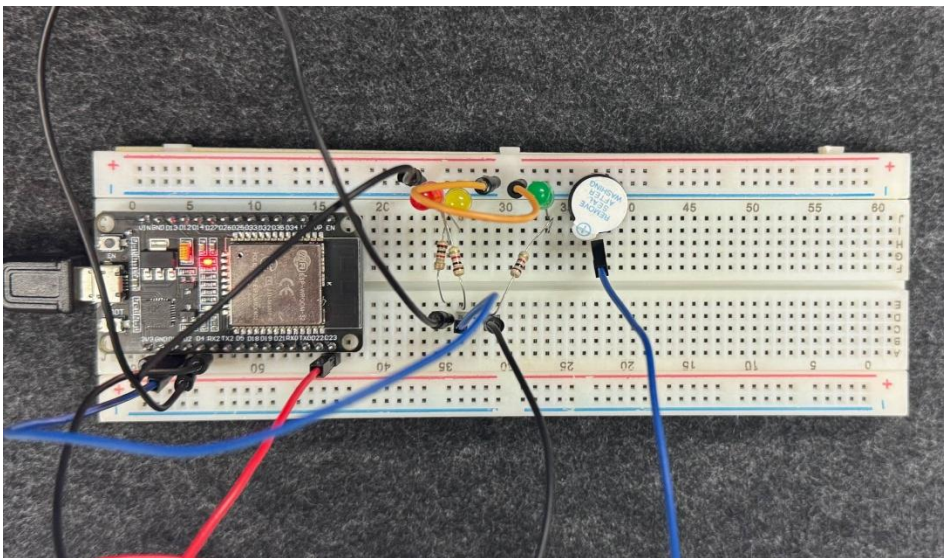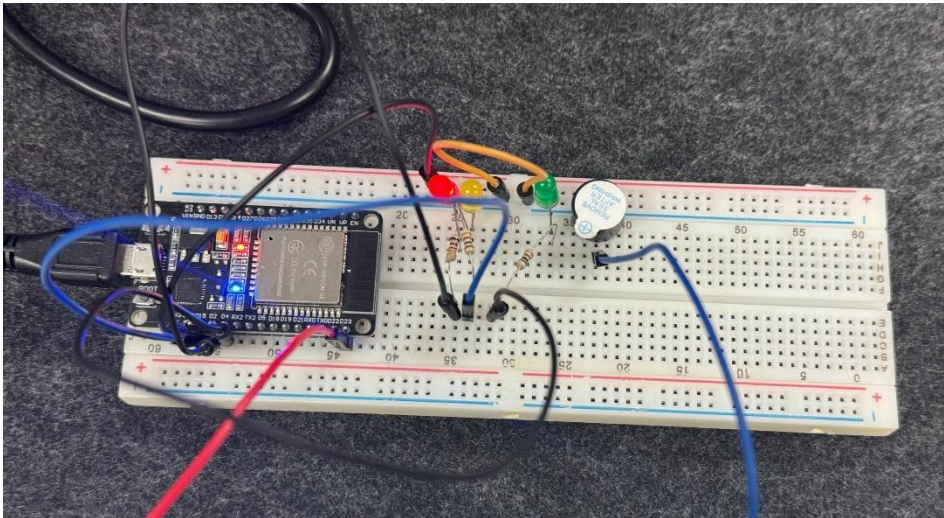
ii.   Koding buzzer

sketch_aug18b.ino

```
1    int ledPin =2;
2    int ledPin1 =4;
3    int ledPin2 = 15;
4    int Buzz = 23;
5    void setup() {
6      // put your setup code here, to run once:
7    pinMode(ledPin,OUTPUT);
8    pinMode(ledPin1,OUTPUT);
9    pinMode(ledPin2,OUTPUT);
10   pinMode(Buzz, OUTPUT);
11   }
12
13   void loop() {
14     digitalWrite(ledPin,HIGH);
15     delay(1000);
16     digitalWrite(ledPin,LOW);
17     delay(1000);
18     digitalWrite(Buzz, LOW);
19
20     digitalWrite(ledPin2,HIGH);
21     delay(1000);
22     digitalWrite(ledPin2,LOW);
23     delay(1000);
24     digitalWrite(Buzz, LOW);
25
26     digitalWrite(ledPin1,HIGH);
27     delay(1000);
28     digitalWrite(ledPin1,LOW);
29     delay(1000);
30     digitalWrite(Buzz, HIGH);
31     // put your main code here, to run repeatedly:
32
33   }
```