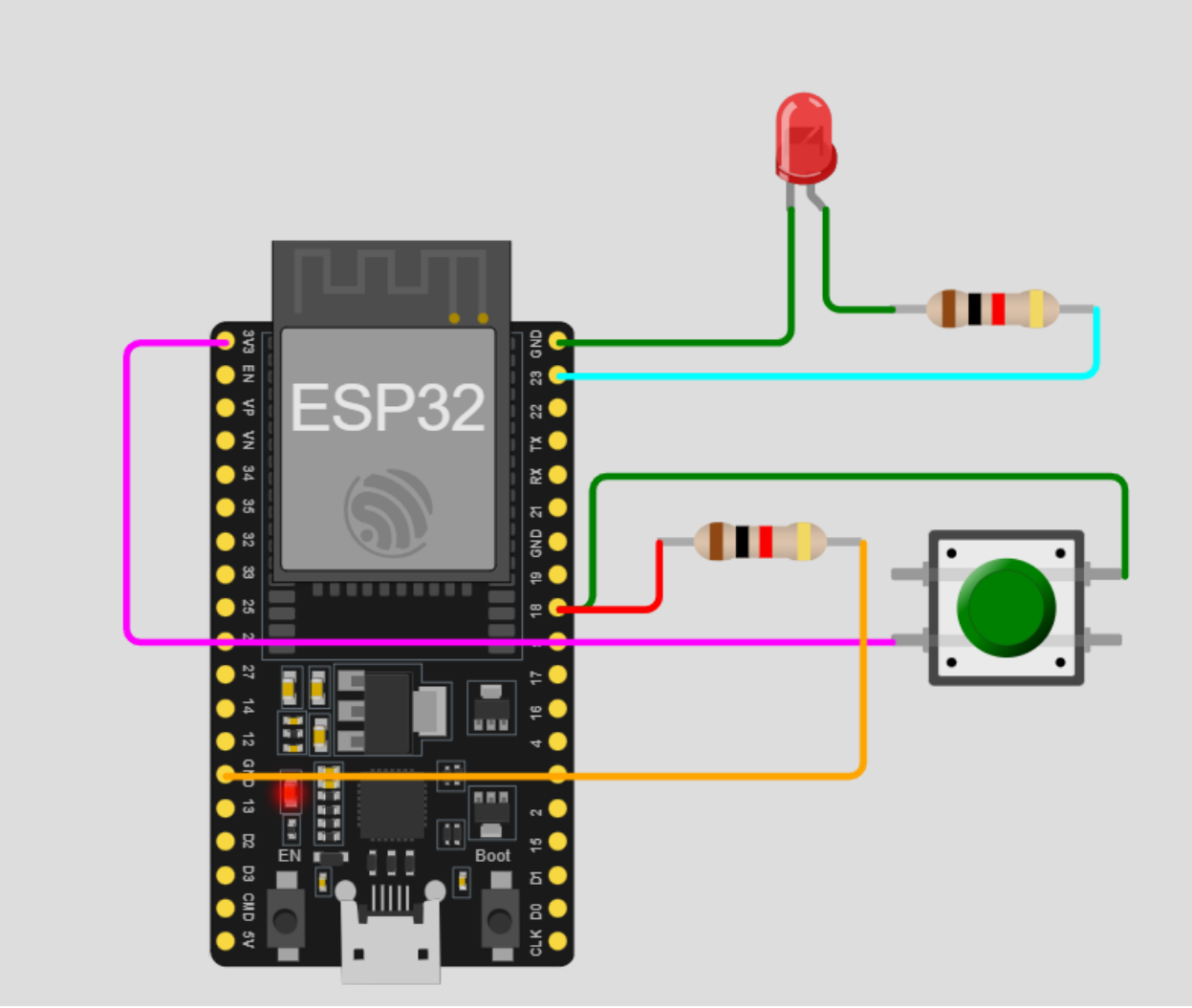
Here is a **step-by-step guide to control an LED with a push button using an ESP32 DevKit V1**.

Go to https://wokwi.com/



□ Components Needed

- ESP32 DevKit V1
- LED
- Push Button
- 220Ω resistor (for LED)
- 10kΩ resistor (for button pull-down)
- Breadboard
- Jumper wires

□ LED Connection (Step-by-Step)

Pin Flow

```
GPIO 23 → 220Ω Resistor → LED Anode (long leg) → LED Cathode (short leg) → GND
```

Steps

1□ **GPIO 23 (ESP32) → 220Ω resistor**

2□ **Other side of resistor → LED Anode (long leg)**

3□ **LED Cathode (short leg) → GND**

□ Push Button Connection (Step-by-Step)

Pin Flow

```
3.3V → Push Button → GPIO 18 → 10kΩ Resistor → GND
```

Steps

1. **3.3V (ESP32) → One side of Push Button**
2. **Other side of Push Button → GPIO 18**
3. **GPIO 18 → 10kΩ resistor**
4. **Other side of resistor → GND**

Complete Circuit Flow

Button

```
3.3V → Button → GPIO18 → 10kΩ → GND
```

LED

```
GPIO23 → 220Ω → LED → GND
```

ESP32 Arduino Code

```
int buttonPin = 18;
int ledPin = 23;
int buttonState = 0;

void setup() {
  pinMode(buttonPin, INPUT);
  pinMode(ledPin, OUTPUT);
}

void loop() {
  buttonState = digitalRead(buttonPin);

  if (buttonState == HIGH) {
    digitalWrite(ledPin, HIGH); // LED ON
  } else {
    digitalWrite(ledPin, LOW);  // LED OFF
```

```
  }
}
```

□ How It Works

1□ ESP32 reads **GPIO18** (button).
2□ If button pressed → **HIGH (3.3V)**.
3□ ESP32 sets **GPIO23 HIGH**.
4□ Current flows → **LED turns ON**.
5□ When button released → resistor pulls signal **LOW** → LED OFF.

□ Important ESP32 Tip

Unlike **Arduino Uno**, the ESP32 uses **3.3V logic**, not 5V.

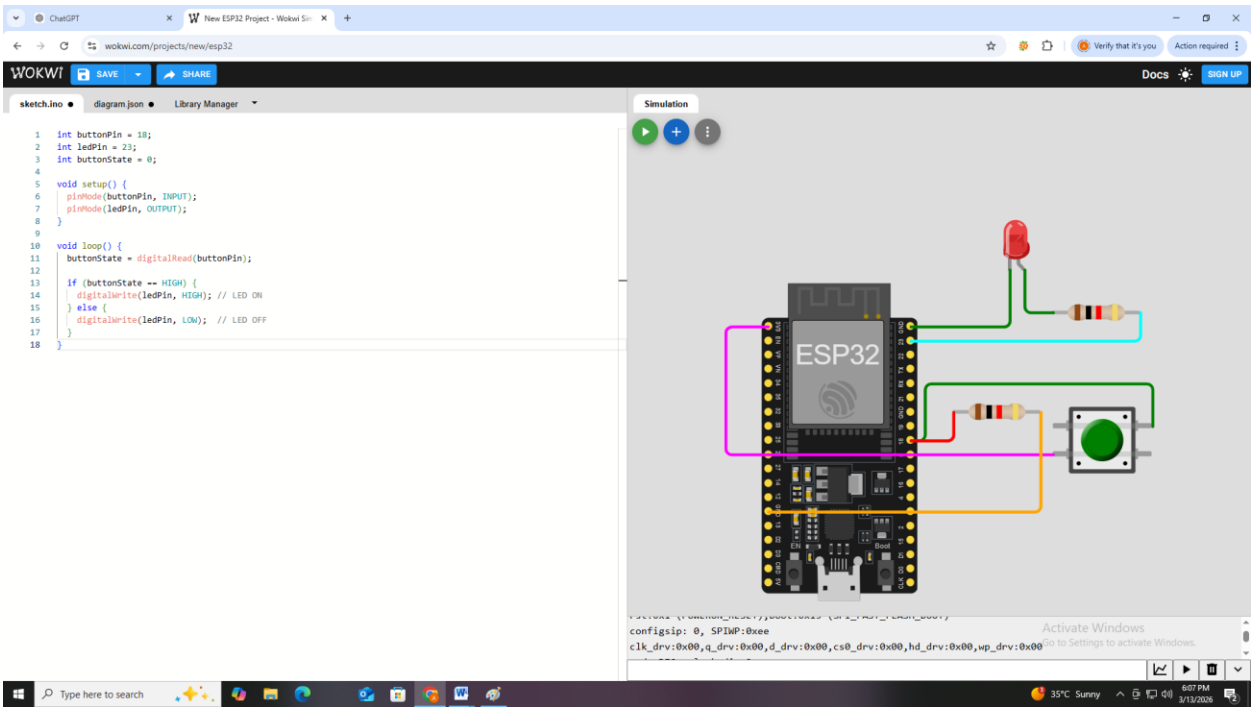
So always use:

```
3.3V → Button → GPIO
```

NOT

```
5V → GPIO
```

Run and test simulator


ChatGPT
New ESP32 Project - Wokwi
wokwi.com/projects/new/esp32
Verify that it's you
Action required
WOKWI
SAVE
SHARE
Docs
SIGN UP
sketch.ino
diagram.json
Library Manager
1 int buttonPin = 18;
2 int ledPin = 23;
3 int buttonState = 0;
4
5 void setup() {
6 pinMode(buttonPin, INPUT);
7 pinMode(ledPin, OUTPUT);
8 }
9
10 void loop() {
11 buttonState = digitalRead(buttonPin);
12
13 if (buttonState == HIGH) {
14 digitalWrite(ledPin, HIGH); // LED ON
15 } else {
16 digitalWrite(ledPin, LOW); // LED OFF
17 }
18 }
Simulation
ESP32
configsip: 0, SPIWP:0xee
clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00
Activate Windows
Go to Settings to activate Windows.
Type here to search
35°C Sunny
6:07 PM
3/13/2026