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Experiment No. : 06

Statement : Design a 4-bit counter.

Date of Exp. : xx/xx/xxxx

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const int ledPins[] = {2, 3, 4, 5}; // Change these pins as per your setup

const int switchPin = 6; // Change this pin as per your setup

// Variables

int counter = 0;

int switchState = 0;

int lastSwitchState = 0;

void setup() {

// Initialize LEDs as outputs

for (int i = 0; i < 4; i++) {

pinMode(ledPins[i], OUTPUT);

}

// Initialize switch as input

pinMode(switchPin, INPUT\_PULLUP);

// Set initial state of LEDs

updateLEDs();

}

void loop() {

// Read the state of the switch

switchState = digitalRead(switchPin);

// Check if the switch state has changed

if (switchState != lastSwitchState) {

if (switchState == HIGH) {

// Increment the counter when the switch is pressed

counter = (counter + 1) % 16;

updateLEDs();

}

delay(50); // Debounce delay

}

// Save the current switch state for comparison

lastSwitchState = switchState;

}

// Function to update LEDs based on the current counter value

void updateLEDs() {

for (int i = 0; i < 4; i++) {

digitalWrite(ledPins[i], bitRead(counter, i));

}

}



