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MCALE232 Internet of Things Lab

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### Practical 3

**Aim: -** To interface Push button with Arduino and write a program to turn ON LED when push button is pressed

#### Components Required :

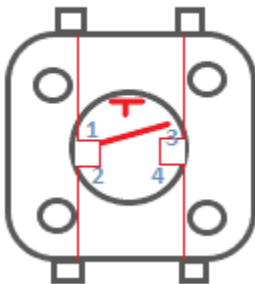
Arduino Board, Bread Board, LED, Push Button, Resistors, Connecting wires.

#### Theory:

Push button is a button which is widely used in projects and circuits.

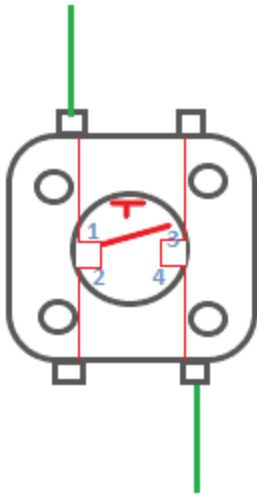
#### Structure of pushbutton

The pushbutton is a square shape button with four terminals, as shown below:



The two pins are next to each other on one side and another two pins on the other side. The pins across to each other are connected. The pins next to each other can only be connected, when we press the button.

We can also connect two opposite terminals of the pushbutton, as shown below:



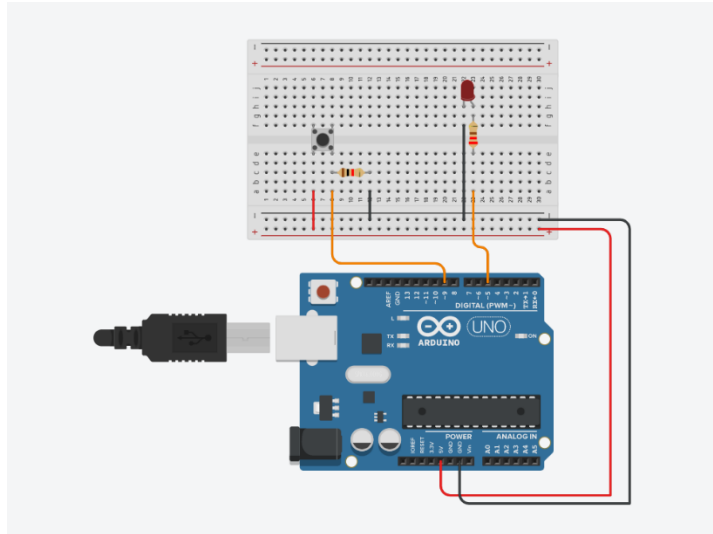
Here, we will light an LED by pressing the pushbutton. When we press the push button, it turns ON the LED connected to the PIN on the **Arduino UNO board**.

The steps for such an example are listed below:

1. Attach the red LED on the breadboard board.
2. Connect a resistor in series with the LED and connect it to desired input output pin of the breadboard.
3. Connect the negative terminal of the LED to the GND pin.
4. Attach the pushbutton on the breadboard.
5. Connect a 10 kohm resistor in series with the lower right corner of the pushbutton and connect it to the GND pin.
6. Connect the upper right corner of the pushbutton to desired input output pin.
7. Connect lower left corner of the pushbutton to 5V.

## Implementation :

### Circuit Diagram:



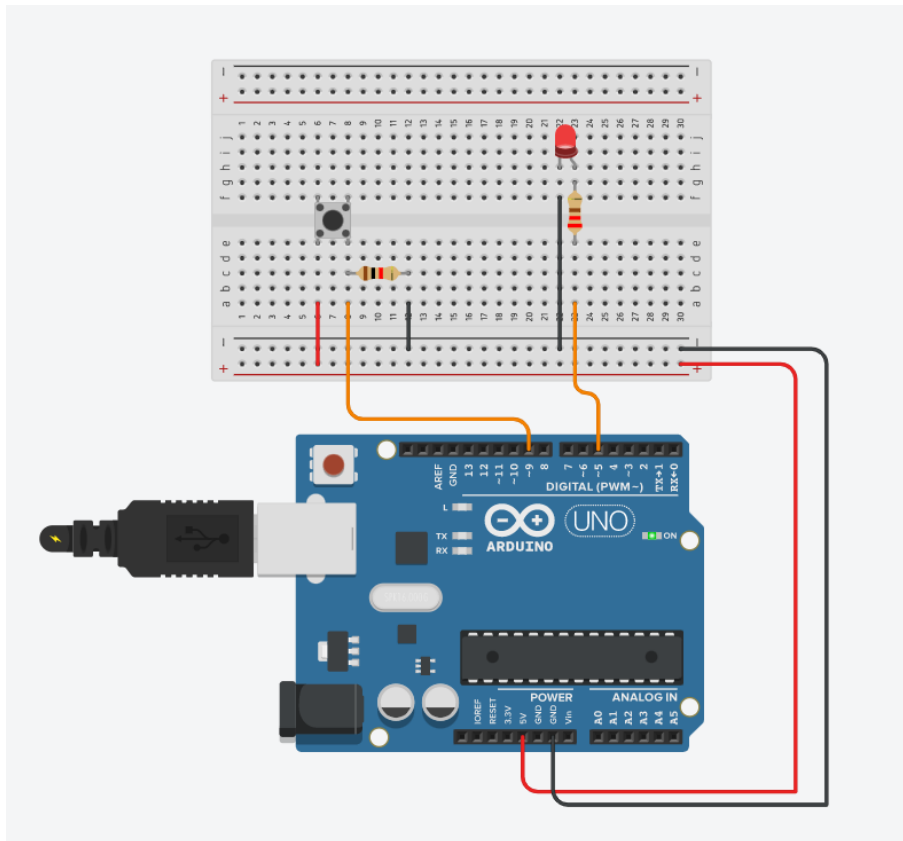
### Program:

```
// C++ code
//
int button = 0;

void setup()
{
  pinMode(9, INPUT);
  pinMode(5, OUTPUT);
}

void loop()
{
  button = digitalRead(9);
  if (button == HIGH) {
    digitalWrite(5, HIGH);
  } else {
    digitalWrite(5, LOW);
  }
  delay(10); // Delay a little bit to improve simulation performance
}
```

**Output:**



**Conclusion:** Thus we studied the interfacing of push button and blink LED when button is pressed.