

# EXPERIMENT NO: 1

Roll No:

Class: BE

Division: A

Date: / / 2024

**TITLE:** Interfacing of LED with Arduino and program for blinking LED

**AIM:** Understand the connection and configuration of GPIO and its use in programming.

Write an application of the use of push switch and LEDs.

## Task 1: Single LED blinking

### Source Code:

```
int LED1 = 2;
void setup() {
  pinMode(LED1, OUTPUT);
}
void loop() {
  digitalWrite(LED1, HIGH);
  delay(1000);
  digitalWrite(LED1, LOW);
  delay(1000);
}
```

### Output:



Fig 1 LED OFF

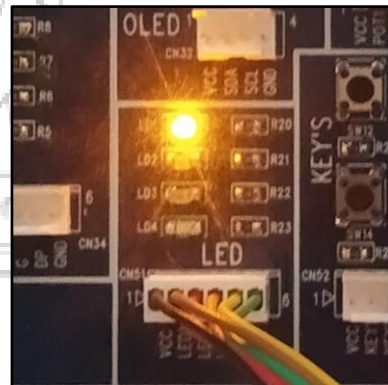


Fig 2 LED ON

### Observations:

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# EXPERIMENT NO: 1

## Task 2: Four LED blinking

### Source Code:

```
int LED1 = 2;
int LED2 = 3;
int LED3 = 4;
int LED4 = 5;
void setup() {
  pinMode(LED1, OUTPUT);
  pinMode(LED2, OUTPUT);
  pinMode(LED3, OUTPUT);
  pinMode(LED4, OUTPUT);
}
void loop() {
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, HIGH);
  digitalWrite(LED4, HIGH);
  delay(3000);
  digitalWrite(LED1, LOW);
  digitalWrite(LED2, LOW);
  digitalWrite(LED3, LOW);
  digitalWrite(LED4, LOW);
  delay(3000);
}
```

### Output:



Fig 1 All LED OFF



Fig 2 All LED ON

### Observations:

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# EXPERIMENT NO: 1

## Task 3: LED chasing (Downwards)

### Source Code:

```
int LED1 = 2;  
int LED2 = 3;  
int LED3 = 4;  
int LED4 = 5;  
void setup() {  
  pinMode(LED1, OUTPUT);  
  pinMode(LED2, OUTPUT);  
  pinMode(LED3, OUTPUT);  
  pinMode(LED4, OUTPUT);  
}  
void loop() {  
  int i;  
  for (i=2; i<=5; i++){  
    digitalWrite(i, LOW);  
    delay(200);  
    digitalWrite(i, HIGH);  
    delay(200);  
  }  
}
```

### Output:



Fig 1 Initially All LED OFF



Fig 2 LED 1 ON



Fig 3 LED 2 ON

## EXPERIMENT NO: 1

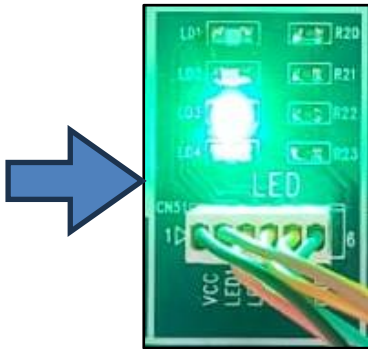


Fig 4 LED 3 ON



Fig 5 LED 4 ON



Fig 6 Again All LED OFF

### Observations:

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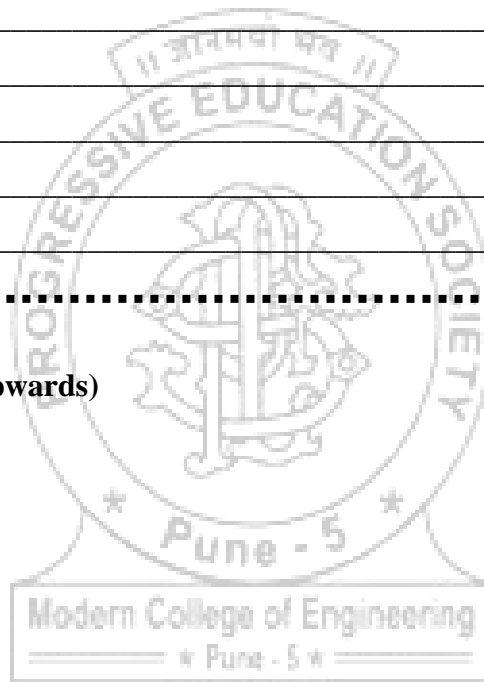
### Task 4: LED chasing (Upwards)

#### Source Code:

```
int LED1 = 2;
int LED2 = 3;
int LED3 = 4;
int LED4 = 5;

void setup() {
  pinMode(LED1, OUTPUT);
  pinMode(LED2, OUTPUT);
  pinMode(LED3, OUTPUT);
  pinMode(LED4, OUTPUT);
}

void loop() {
  int i;
  for (i=5; i>=2; i--){
    digitalWrite(i, LOW);
    delay(1000);
    digitalWrite(i, HIGH);
    delay(1000);
  }
}
```



# EXPERIMENT NO: 1

}

**Output:**



Fig 1 Initially All LED OFF



Fig 2 LED 4 ON

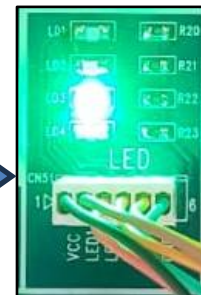


Fig 3 LED 3 ON

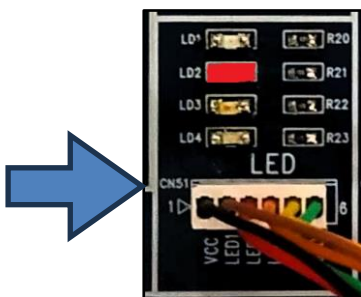


Fig 4 LED 2 ON



Fig 5 LED 1 ON



Fig 6 Again All LED OFF

**Observations:**

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