EXPERIMENT NO: 1

Roll No: ***Class: BE*** ***Division: A*** ***Date:***

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:

```
#define LED1 2
void setup() {
  Serial.begin(9600);
  pinMode(LED1,OUTPUT);
}
void loop() {
  digitalWrite(LED1, LOW);
  delay(1000);
  Serial.println("LED1 ON!");
  digitalWrite(LED1, HIGH);
  delay(1000);
  Serial.println("LED1 OFF!");
}
```


Output:

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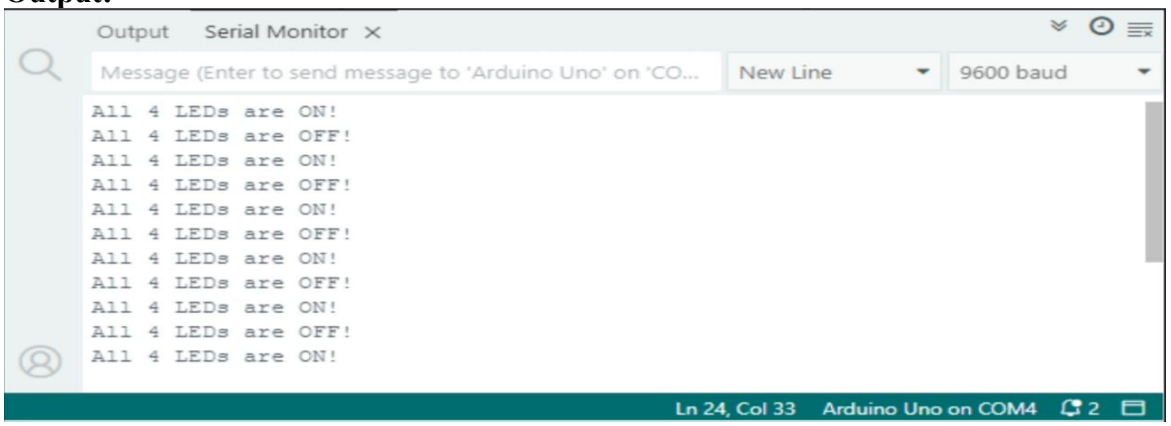
Task 2: Four LED blinking

Source Code:

```
#define LED1 2
#define LED2 3
#define LED3 4
#define LED4 5
void setup() {
  Serial.begin(9600);
  pinMode(LED1,OUTPUT);
  pinMode(LED2,OUTPUT);
  pinMode(LED3,OUTPUT);
  pinMode(LED4,OUTPUT);
}
void loop() {
  digitalWrite(LED1, LOW);
  digitalWrite(LED2, LOW);
  digitalWrite(LED3, LOW);
  digitalWrite(LED4, LOW);
  delay(1000);
  Serial.println("All 4 LEDs are ON!");
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, HIGH);
  digitalWrite(LED4, HIGH);
  delay(1000);
  Serial.println("All 4 LEDs are OFF!");
}
```

Output:



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Obervations:

Task 3: LED chasing (Downwards)

Source Code:

```
#define LED1 2
#define LED2 3
#define LED3 4
#define LED4 5
void setup() {
  Serial.begin(9600);
  pinMode(LED1,OUTPUT);
  pinMode(LED2,OUTPUT);
  pinMode(LED3,OUTPUT);
  pinMode(LED4,OUTPUT);
  Serial.println("LEDs are chasing
downward!");
}
void loop() {
  digitalWrite(LED1, LOW);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, HIGH);
  digitalWrite(LED4, HIGH);
  delay(1000);
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, LOW);
  digitalWrite(LED3, HIGH);
  digitalWrite(LED4, HIGH);
  delay(1000);
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, LOW);
  digitalWrite(LED4, HIGH);
  delay(1000);
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, HIGH);
  digitalWrite(LED4, LOW);
  delay(1000);
}
```

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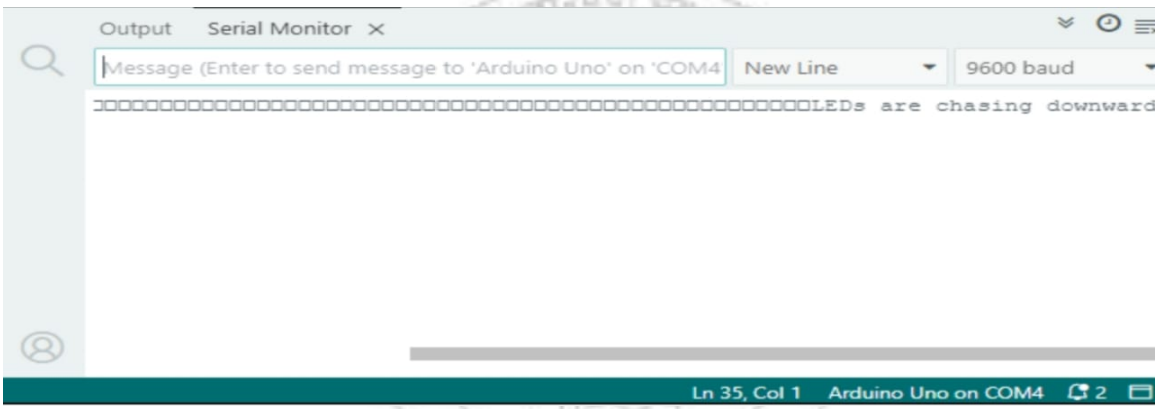
Output:



Obervations:

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Task 4: LED chasing (Upwards)

Source Code:

```
#define LED1 2
#define LED2 3
#define LED3 4
#define LED4 5
void setup() {
  Serial.begin(9600);
  pinMode(LED1,OUTPUT);
  pinMode(LED2,OUTPUT);
  pinMode(LED3,OUTPUT);
  pinMode(LED4,OUTPUT);
  Serial.println("LEDs are
      chasing upward!");
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, HIGH);
  digitalWrite(LED4, HIGH);
}
void loop() {

digitalWrite(LED4, LOW);
```

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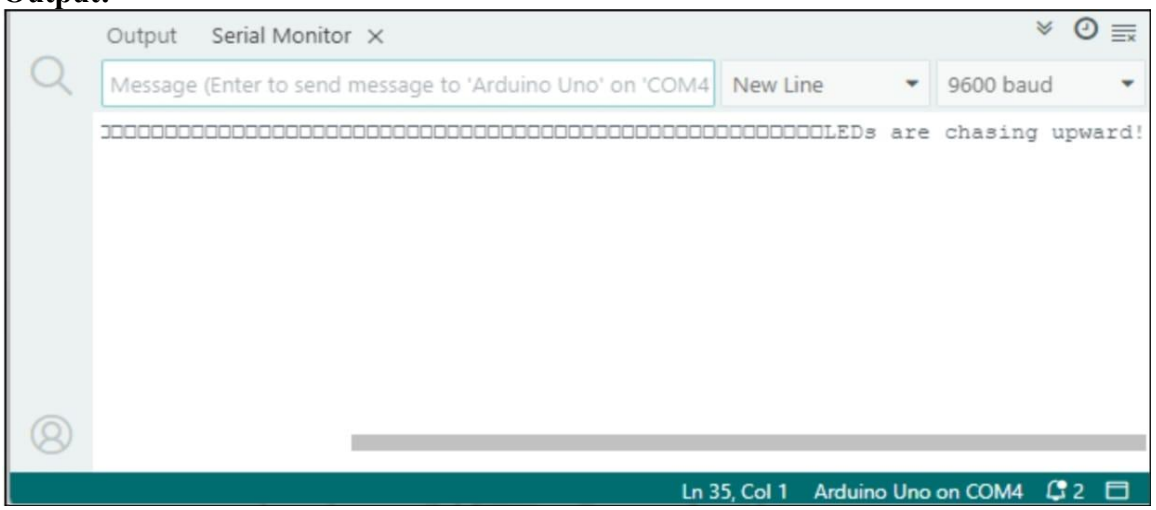
```
delay(1000);
digitalWrite(LED4, HIGH);
delay(1000);
digitalWrite(LED3, LOW);
 delay(1000);
digitalWrite(LED3, HIGH);
delay(1000);
digitalWrite(LED2, LOW);
 delay(1000);
digitalWrite(LED2, HIGH);
delay(1000);
digitalWrite(LED1, LOW);
delay(1000);
digitalWrite(LED1, HIGH);
delay(1000);
```

Output:



Obervations: