DEPARTMENT OF MCA

Enterprise Java Lab (22MCA207)

<u>Assignment – 2</u>

27-01-2025

1. **Write a java program to rotate an array to the left or right by a specified number of positions.**

Input:

- Array: `{1, 2, 3, 4, 5, 6, 7}`
- Number of positions: `2`
- Direction: `Left`

Output:

`Rotated Array: [3, 4, 5, 6, 7, 1, 2]`

Input:

- Array: `{1, 2, 3, 4, 5, 6, 7}`
- Number of positions: `3`
- Direction: `Right`

Output:

`Rotated Array: [5, 6, 7, 1, 2, 3, 4]`

2. **Write a Java program to Find the missing number in a sequence of integers from 1 to N.**

Input:

- Array: `{1, 2, 4, 5, 6}`
- Range: `1 to 6`

Output:

```
Missing Number: 3
```

3. **Write a java program to Find all pairs in an array whose sum equals a given target.**

Input:

- Array: `{2, 4, 3, 5, 7, 8, 1}`
- Target Sum: `9`

Output:

```
Pairs with sum 9:
(4, 5)
(2, 7)
(8, 1)
```

4. **Write a java program to simulate a traffic light system using a switch statement. The program should display messages based on the color (Red, Yellow, Green).**

Input:

- Traffic Light Color: `Red`

Output:

```
STOP! Wait until the light turns green.
```

Input:

- Traffic Light Color: `Green`

Output:

```
GO! You can proceed.
```

Input:

- Traffic Light Color: `Yellow`

Output:

```
GET READY! The light is about to turn green.
```

5. **Write a java program to calculate the income tax of an employee based on the following slabs:**

- Income <= 2,50,000: No tax
- Income <= 5,00,000: 5%
- Income <= 10,00,000: 20%
- Income > 10,00,000: 30%

Input:

- Salary: 8,50,000

Output:

```
Income Tax to be paid: ₹85,000
```

Input:

- Salary: 2,00,000

Output:

```
Income Tax to be paid: ₹0
```