Java Lab Tasks: Arrays & Basics

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Instructions

- Write each program in a separate `.java` file.
- Include proper comments for class name, author, and description.
- Compile and run each program using `javac` and `java`.
- Save your outputs for submission.
- Take all inputs (array size and elements) from the user.

Lab Tasks

Task 1 — Sum of Array Elements

Take **n** numbers in an array from the user and print their sum.
Example Input:

```
Enter array size: 5
Enter 5 numbers: 10 20 30 40 50
```

Example Output:

```
Sum = 150
```

Task 2 — Find the Largest Number

Take **n** integers in an array from the user and print the largest element.
Example Input:

```
Enter array size: 5
Enter 5 numbers: 10 55 22 14 9
```

Example Output:

```
Largest = 55
```

Task 3 — Count Even and Odd Numbers

Count how many numbers are even and how many are odd in an array input by the user.
Example Input:

```
Enter array size: 6
Enter 6 numbers: 1 2 3 4 5 6
```

Example Output:

```
Even: 3
Odd: 3
```

Task 4 — Reverse an Array

Take **n** numbers from the user, store them in an array, and print them in reverse order.

Example Input:

```
Enter array size: 5
Enter 5 numbers: 10 20 30 40 50
```

Example Output:

```
Original array: 10 20 30 40 50
Reversed array: 50 40 30 20 10
```

Task 5 — Search an Element

Take **n** numbers in an array from the user, ask for a number to search, and show whether it is found.

Example Input:

```
Enter array size: 5
Enter 5 numbers: 2 4 6 8 10
Enter number to search: 6
```

Example Output:

```
6 found at index 2
```

Task 6 — Average of Array Elements

Input **n** numbers into an array from the user and calculate their average.

Example Input:

```
Enter array size: 5
Enter 5 numbers: 10 20 30 40 50
```

Example Output:

```
Average = 30.0
```

Task 7 — Copy One Array to Another

Input **n** numbers into an array from the user, copy them into another array, and display both arrays.

Example Input:

```
Enter array size: 5
Enter 5 numbers: 1 2 3 4 5
```

Example Output:

```
Original array: 1 2 3 4 5
Copied array:   1 2 3 4 5
```

Task 8 — Smallest and Largest

Input **n** numbers from the user and find both smallest and largest numbers in the array.
Example Input:

```
Enter array size: 5
Enter 5 numbers: 3 9 1 7 5
```

Example Output:

```
Smallest = 1
Largest = 9
```

End of Lab Sheet — Happy Coding!