Arrays

1. Challenge: Find the largest and smallest element in an array

   Code:

```
public class LargestSmallest {
    public static void main(String[] args) {
        int[] arr = {25, 11, 7, 75, 56};
        int max = arr[0];
        int min = arr[0];

        for (int i = 1; i < arr.length; i++) {
            if (arr[i] > max)
                max = arr[i];
            if (arr[i] < min)
                min = arr[i];
        }

        System.out.println("Largest element: " + max);
        System.out.println("Smallest element: " + min);
    }
}
```

   Output:

```
Largest element: 75
Smallest element: 7
```

2. Challenge: Sort an array in ascending order

   Code:

```
import java.util.Arrays;

public class SortArray {
    public static void main(String[] args) {
        int[] arr = {5, 3, 8, 1, 2};
        Arrays.sort(arr);

        System.out.print("Sorted array: ");
        for (int i : arr) {
            System.out.print(i + " ");
        }
    }
}
```

Output:
Sorted array: 1 2 3 5 8

3. Challenge: Calculate average of numbers in an array
Code:
```
public class AverageArray {
    public static void main(String[] args) {
        int[] arr = {10, 20, 30, 40, 50};
        int sum = 0;

        for (int num : arr) {
            sum += num;
        }

        double average = (double) sum / arr.length;
        System.out.println("Average: " + average);
    }
}
```
Output:
Average: 30.0

4. Challenge: Count occurrence of an element
Code:
```
public class CountElement {
    public static void main(String[] args) {
        int[] arr = {2, 3, 4, 2, 7, 2, 8};
        int target = 2;
        int count = 0;

        for (int num : arr) {
            if (num == target)
                count++;
        }

        System.out.println("Element " + target + " occurs " + count + "
times.");
    }
}
```
Output:

Element 2 occurs 3 times.

5. Challenge: Reverse elements of an array

Code:

```
public class ReverseArray {
    public static void main(String[] args) {
        int[] arr = {1, 2, 3, 4, 5};

        System.out.print("Reversed array: ");
        for (int i = arr.length - 1; i >= 0; i--) {
            System.out.print(arr[i] + " ");
        }
    }
}
```

Output:

Reversed array: 5 4 3 2 1