Part 12: Arrays - Java Challenges & Code

1. Find the largest and smallest element in an array

```
import java.util.Scanner;

public class MinMaxArray {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter array size: ");
        int n = sc.nextInt();
        int[] arr = new int[n];

        System.out.println("Enter elements:");
        for (int i = 0; i < n; i++)
            arr[i] = sc.nextInt();

        int min = arr[0], max = arr[0];
        for (int i = 1; i < n; i++) {
            if (arr[i] < min) min = arr[i];
            if (arr[i] > max) max = arr[i];
        }

        System.out.println("Min: " + min + ", Max: " + max);
    }
}
```

2. Sort an array in ascending order

```
import java.util.Arrays;
import java.util.Scanner;

public class SortArray {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter array size: ");
        int n = sc.nextInt();
        int[] arr = new int[n];

        System.out.println("Enter elements:");
        for (int i = 0; i < n; i++)
            arr[i] = sc.nextInt();

        Arrays.sort(arr);

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

3. Calculate average of numbers in an array

```
import java.util.Scanner;

public class ArrayAverage {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter array size: ");
        int n = sc.nextInt();
        int[] arr = new int[n];

        System.out.println("Enter elements:");
        for (int i = 0; i < n; i++)
            arr[i] = sc.nextInt();

        int sum = 0;
        for (int num : arr)
            sum += num;

        double avg = (double) sum / n;
        System.out.println("Average: " + avg);
    }
}
```

4. Count occurrence of an element

```
import java.util.Scanner;

public class CountOccurrence {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter array size: ");
        int n = sc.nextInt();
        int[] arr = new int[n];

        System.out.println("Enter elements:");
        for (int i = 0; i < n; i++)
            arr[i] = sc.nextInt();

        System.out.print("Enter number to count: ");
        int x = sc.nextInt();

        int count = 0;
        for (int num : arr)
            if (num == x) count++;

        System.out.println(x + " occurred " + count + " times.");
    }
}
```

5. Reverse elements of an array

```
import java.util.Scanner;
```

```
public class ReverseArray {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter array size: ");
        int n = sc.nextInt();
        int[] arr = new int[n];

        System.out.println("Enter elements:");
        for (int i = 0; i < n; i++)
            arr[i] = sc.nextInt();

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