1] //print element of Array

```
import java.util.Arrays;

public class Day8_6 {
    public static void main(String[] args) {
        int arr[]= {1,2,3,4,5};

        for(int i=0; i<arr.length; i++) {
            System.out.println(arr[i]);
        }

    }
}
```

Output: 1
2
3
4
5

2] //equality of two arrays

```
import java.util.Arrays;

public class Day8_7 {
    public static void main(String[] args) {
        int arr1[] = {1,2,3,4,5};
        int arr2[] = {6,7,8,9,10};

        boolean isEqual = Arrays.equals(arr1,arr2);

        if(isEqual) {
            System.out.println("The arrays are equal.");
        }
        else {
            System.out.println("The arrays are not equal.");
        }

    }
}
```

Output:The arrays are not equal.

9] //generates the series 1,4,27,16,125,36

```
import java.util.Arrays;

public class Day8_8 {
    public static void main(String[] args) {
        int arr[]= {1,4,27,16,125,36};

        for(int i=0; i<arr.length; i++) {
            System.out.println(arr[i]);
```

```
        }

    }
}
```

Output: 1
4
27
16
125
36

3] // all pairs of elements in an integer array whose sum is equal to a given number

```
import java.util.Scanner;

public class Day8_9 {
    private static Scanner input = new Scanner(System.in);

    public static void acceptArray(int arr[]) {
        for(int i = 0; i < 5; i++) {
            System.out.print("Enter the element at index " + i + ": ");
            arr[i] = input.nextInt();
        }
    }

    public static void printArray(int arr[]) {
        System.out.println("Elements of the array:");
        for(int i = 0; i < 5; i++) {
             System.out.print(arr[i] + " ");
        }
        System.out.println();
    }

    public static void samePair(int arr[], int targetSum) {
        System.out.println("Pairs with sum " + targetSum);
        for(int i = 0; i < 4; i++) {
            for(int j = i + 1; j < 5; j++) {
                if(arr[i] + arr[j] == targetSum) {
                    System.out.println("Pair found: " + arr[i] + " and " + arr[j]);
                } else {
                    System.out.println("Pair not found...! ");
                }
            }
        }
    }

    public static void main(String[] args) {
        int[] arr = new int[5];
        System.out.println("Enter the number: ");
        int num1 = input.nextInt();

        acceptArray(arr);
        printArray(arr);
        samePair(arr, num1);
```

```
    }
}
```

Output: Enter the number:
50
Enter the element at index 0: 5
Enter the element at index 1: 5
Enter the element at index 2: 5
Enter the element at index 3: 5
Enter the element at index 4: 5
Elements of the array:
5 5 5 5 5
Pairs with sum 50
Pair not found...!

4] //reverse an Array

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

public class Day9_1 {
    static void reverse(Integer a[]) {
        Collections.reverse(Arrays.asList(a));
        System.out.println(Arrays.asList(a));
    }

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.println("Enter the elements: ");
        int n = input.nextInt();

        Integer[] arr = new Integer[n];
        System.out.println("Enter the elements:");
        for (int i = 0; i < n; i++) {
            arr[i] = input.nextInt();
        }

        reverse (arr);

        input.close();
    }
}
```

Output:

Enter the elements:
4
Enter the elements:
1
2
3
4
[4, 3, 2, 1]

5] //smallest and largest number in an Array

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

public class Day9_2 {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

        System.out.print("Enter the number of elements: ");
        int n = input.nextInt();

        int smallest = Integer.MAX_VALUE;
        int largest = Integer.MIN_VALUE;

        System.out.println("Enter the elements: ");
        for (int i = 0; i < n; i++) {
            int num = input.nextInt();
            smallest = Math.min(smallest, num);
            largest = Math.max(largest, num);
        }

        System.out.println("Smallest number: " + smallest);
        System.out.println("Largest number: " + largest);

        input.close();
    }
}
```

Output:

```
-------
Enter the number of elements: 3
Enter the elements:
100
200
300
Smallest number: 100
Largest number: 300
```

6] //Print the third-largest number in an array without sorting it

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

public class Day9_3 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Elements: ");
        int n = sc.nextInt();

        int arr[]=new int[n];
        System.out.println("Enter the elements:");
        for (int i = 0; i < n; i++) {
```

```
            arr[i] = sc.nextInt();
        }

        int firstLargest = Integer.MIN_VALUE;
        int secondLargest = Integer.MIN_VALUE;
        int thirdLargest = Integer.MIN_VALUE;

        for (int num : arr) {
            if (num > firstLargest) {
                thirdLargest = secondLargest;
                secondLargest = firstLargest;
                firstLargest = num;
            } else if (num > secondLargest && num != firstLargest) {
                thirdLargest = secondLargest;
                secondLargest = num;
            } else if (num > thirdLargest && num != secondLargest && num != firstLargest) {
                thirdLargest = num;
            }
        }

        if (thirdLargest != Integer.MIN_VALUE) {
            System.out.println("Third largest element: " + thirdLargest);
        } else {
            System.out.println("There is no third largest element.");
        }
    }
}

Output: Elements:
5
Enter the elements:
1
2
3
4
5
Third largest element: 3

7] //merge two arrays

import java.util.Arrays;

public class Day9_7 {
    private static int[] arr2;

    private static void acceptArrays(int[] arr, int[] arr1) {
        int length = arr.length + arr1.length;
        arr2 = new int[length];

        for (int i = 0; i < arr.length; i++) {
            arr2[i] = arr[i];
        }
        for (int i = 0; i < arr1.length; i++) {
            arr2[arr.length + i] = arr1[i];
        }
```

```
    }

    public static void printArrays(int[] arr) {
        System.out.println(Arrays.toString(arr));
    }

    public static void main(String[] args) {
        int arr1[] = {23, 60, 94, 3, 102};
        int arr2[] = {42, 16, 74};

        Day9_7.acceptArrays(arr1, arr2);
        Day9_7.printArrays(arr2);
    }
}
```

output:[42, 16, 74]

10] //ascending,descending,random

```
public class Day9_8 {
    public static void main(String[] args) {
        int[] arr1 = {5, 14, 35, 90, 139};
        int[] arr2 = {88, 67, 35, 14, -12};
        int[] arr3 = {65, 14, 129, 34, 7};

        checkOrder(arr1);
        checkOrder(arr2);
        checkOrder(arr3);
    }

    public static void checkOrder(int[] arr) {
        boolean ascending = true;
        boolean descending = true;

        for (int i = 1; i < arr.length; i++) {
            if (arr[i] > arr[i - 1]) {
                descending = false;
            } else if (arr[i] < arr[i - 1]) {
                ascending = false;
            }
        }

        if (ascending) {
            System.out.println("Output: Ascending");
        } else if (descending) {
            System.out.println("Output: Descending");
        } else {
            System.out.println("Output: Random");
        }
    }
}


/*Output: Ascending
Output: Descending
```

Output: Random*/

8] //average of 3 consecutive integers

```
public class Day9_9 {

    public static void main(String[] args) {
        int[] inputArray = {5, 14, 35, 89, 140};

        if (inputArray.length < 3) {
            System.out.println("Input array has fewer than 3 integers. No output.");
            return;
        }

        int[] averages = new int[inputArray.length - 2];

        for (int i = 0; i < inputArray.length - 2; i++) {
            averages[i] = (inputArray[i] + inputArray[i + 1] + inputArray[i + 2]) / 3;
        }

        System.out.println("Output: " + java.util.Arrays.toString(averages));
    }
}
```

//output: array:[18, 46, 88]