1. Write a Java program to calculate the average value of an array of integers.

2. Write a Java program to double the values of an array of integers

3. Write a Java program to copy only the prime numbers of an array of integers.

4. Write a Java program to test if an array contains a specific value.

5. Write a Java program to find the index of an array element.

6. Write a Java program to modify a specific element from an array.

7. Write a Java program to insert an element (specific position) into an array.

8. Write a Java program to reverse an array of integer values.

9. Write a Java program to sort an array of integers values descending,

10. Write a Java program to print the duplicate values of an array of integer values.

11. Write a Java program to print the duplicate values of an array of string values.

12. Write a Java program to find the common elements between two arrays,

13. Write a Java program to print all the LEADERS in the array.

    Note: An element is leader if it is greater than all the elements to its right side.

14. Given two sorted arrays A and B of size p and q, write a Java program to merge elements of A with B by maintaining the sorted order i.e. fill A with first p smallest elements and fill B with remaining elements.

    Example:

    Input :

    int[] A = { 1, 5, 6, 7, 8, 10 }

    int[] B = { 2, 4, 9 }

    Output:

    Sorted Arrays:

    A: [1, 2, 4, 5, 6, 7]

    B: [8, 9, 10]

15. Write a Java program to find the sum of the two elements of a given array which is equal to a given integer.

    Sample array: [1,2,4,5,6]

    Target value: 6.

16. Write a Java program to cyclically rotate a given array counterclockwise by one.

17. Write a Java program to print the number of positive numbers, number of negative numbers and the number of 0 of an array of integers.

18. Write a Java program that splits an array of integers into two. The first array will contain all the values less than the average of the two extremes (min & max); the second contains the values equal or greater than the average.

19. Write a Java program to sort an array of Characters descending

20. Write a Java program to reverse the order of an array of String
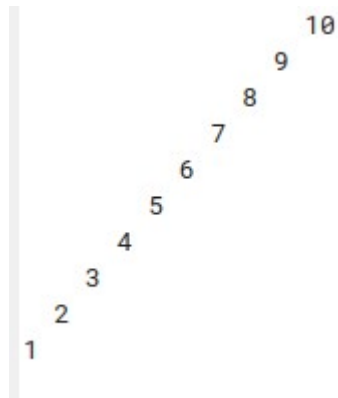
Multidimensional Array

Matrix max length : [10][10]

1) Write a Java program to print the following pattern :

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10
```
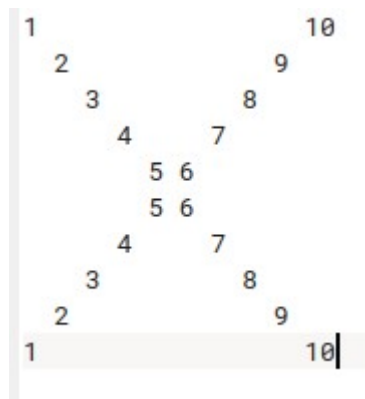
2)

```
1
  2
    3
      4
        5
          6
            7
              8
                9
                  10
```

3)

```
                    10
                  9
                8
              7
            6
          5
        4
      3
    2
1
```

4)

```
1                    10
  2                9
    3            8
      4        7
        5 6
        5 6
      4        7
    3            8
  2                9
1                    10
```

5)

```
  2 3 4 5 6 7 8 9 10
1   3 4 5 6 7 8 9 10
1 2   4 5 6 7 8 9 10
1 2 3   5 6 7 8 9 10
1 2 3 4   6 7 8 9 10
1 2 3 4 5   7 8 9 10
1 2 3 4 5 6   8 9 10
1 2 3 4 5 6 7   9 10
1 2 3 4 5 6 7 8   10
1 2 3 4 5 6 7 8 9
```
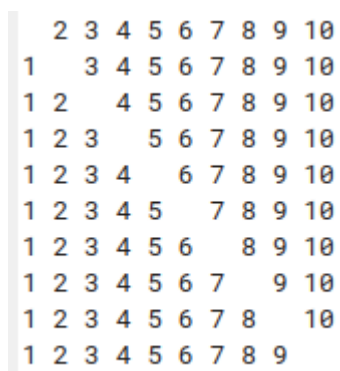
6)

```
1                    10
1 2                9
1 2 3          8
1 2 3 4      7
1 2 3 4 5 6
1 2 3 4 5 6
1 2 3 4 5 6 7
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10
```

7)

```
        *
       ***
      *****
     *******
    *********
   ***********
  *************
 ***************
*****************
```

8) Sort a matrix of Char in alphabetic order

9) Write a Java program to print the sum of the secondary diagonal

10) Write a Java program to sort a matrix of integers descending