1. Write a program store elements in an array using prompt and print it.Test Data :
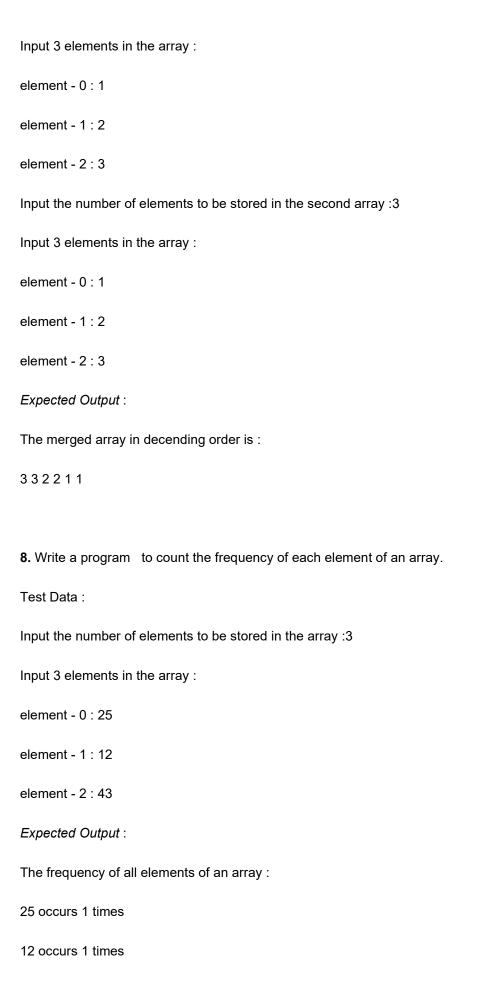
Input 10 elements in the array :

element - 0 : 1

element - 1 : 1

element - 2 : 2

....

Expected Output :

Elements in array are: 1 1 2 3 4 5 6 7 8 9

2. Write a program to read n number of values in an array and display it in reverse order.

Test Data :

Input the number of elements to store in the array :3

Input 3 number of elements in the array :

element - 0 : 2

element - 1 : 5

element - 2 : 7

Expected Output :

The values store into the array are :

2 5 7

The values store into the array in reverse are :

7 5 2

5. Write a program to count a total number of duplicate elements in an array.

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 5

element - 1 : 1

element - 2 : 1

Expected Output :

Total number of duplicate elements found in the array is : 1

6. Write a program   to print all unique elements in an array.

Test Data :

Print all unique elements of an array:

Input the number of elements to be stored in the array: 4

Input 4 elements in the array :

element - 0 : 3

element - 1 : 2

element - 2 : 2

element - 3 : 5

Expected Output :

The unique elements found in the array are:

3 5

7. Write a program   to merge two arrays of same size sorted in descending order.

Test Data :

Input the number of elements to be stored in the first array :3

Input 3 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

Input the number of elements to be stored in the second array :3

Input 3 elements in the array :

element - 0 : 1

element - 1 : 2

element - 2 : 3

Expected Output :

The merged array in decending order is :

3 3 2 2 1 1

8. Write a program   to count the frequency of each element of an array.

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 25

element - 1 : 12

element - 2 : 43

Expected Output :

The frequency of all elements of an array :

25 occurs 1 times

12 occurs 1 times

43 occurs 1 times

9. Write a program   to find the maximum and minimum element in an array.

Test Data :

Input the number of elements to be stored in the array :3

Input 3 elements in the array :

element - 0 : 45

element - 1 : 25

element - 2 : 21

Expected Output :

Maximum element is : 45

Minimum element is : 21

10. Write a program   to separate odd and even integers in separate arrays.

Test Data :

Input the number of elements to be stored in the array :5

Input 5 elements in the array :

element - 0 : 25

element - 1 : 47

element - 2 : 42

element - 3 : 56

element - 4 : 32

Expected Output :

The Even elements are :

42 56 32

The Odd elements are :

25 47

11. Write a program   to sort elements of array in ascending order.

Test Data :

Input the size of array : 5

Input 5 elements in the array :

element - 0 : 2

element - 1 : 7

element - 2 : 4

element - 3 : 5

element - 4 : 9

Expected Output :

Elements of array in sorted ascending order:

2 4 5 7 9

12. Write a program   to sort elements of the array in descending order.

Test Data :

Input the size of array : 3

Input 3 elements in the array :

element - 0 : 5

element - 1 : 9

element - 2 : 1

Expected Output :

Elements of the array in sorted descending order:

9 5 1

13. Write a program   to insert New value in the array (sorted list)..

Test Data :

Insert New value in the sorted array :

Input the size of array : 5

Input 5 elements in the array in ascending order:

element - 0 : 2

element - 1 : 5

element - 2 : 7

element - 3 : 9

element - 4 : 11

Input the value to be inserted : 8

The exist array list is :

2 5 7 9 11

After Insert the list is :

2 5 7 8 9 11

Process exited after 39.33 seconds with return value 10

Press any key to continue . . .

14. Write a program   to insert New value in the array (unsorted list).

Test Data :

Input the size of array : 4

Input 4 elements in the array in ascending order:

element - 0 : 1

element - 1 : 8

element - 2 : 7

element - 3 : 10

Input the value to be inserted : 5

Input the Position, where the value to be inserted :2

Expected Output :

The current list of the array :

1 8 7 10

After Insert the element the new list is :

1 5 8 7 10

15. Write a program   to delete an element at desired position from an array.

Test Data :

Input the size of array : 5

Input 5 elements in the array in ascending order:

element - 0 : 1

element - 1 : 2

element - 2 : 3

element - 3 : 4

element - 4 : 5

Input the position where to delete: 3

Expected Output :

The new list is : 1 2 4 5

16. Write a program   to find the second largest element in an array.

Test Data :

Input the size of array : 5

Input 5 elements in the array :

element - 0 : 2

element - 1 : 9

element - 2 : 1

element - 3 : 4

element - 4 : 6

Expected Output :

The Second largest element in the array is : 6

17. Write a program   to find the second smallest element in an array.

Test Data :

Input the size of array : 5

Input 5 elements in the array (value must be <9999) :

element - 0 : 0

element - 1 : 9

element - 2 : 4

element - 3 : 6

element - 4 : 5

Expected Output :

The Second smallest element in the array is : 4

18. Write a program   for a 2D array of size 3x3 and print the matrix.

Test Data :

Input elements in the matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [0],[2] : 3

element - [1],[0] : 4

element - [1],[1] : 5

element - [1],[2] : 6

element - [2],[0] : 7

element - [2],[1] : 8

element - [2],[2] : 9

Expected Output :

The matrix is :

1 2 3

4 5 6

7 8 9

19. Write a program   for addition of two Matrices of same size.

Test Data :

Input the size of the square matrix (less than 5): 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Input elements in the second matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Expected Output :

The First matrix is :

1 2

3 4

The Second matrix is :

5 6

7 8

The Addition of two matrix is :

6 8

10 12

20. Write a program   for subtraction of two Matrices.

Test Data :

Input the size of the square matrix (less than 5): 2

Input elements in the first matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Input elements in the second matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The First matrix is :

5 6

7 8

The Second matrix is :

1 2

3 4

The Subtraction of two matrix is :

4 4

4 4

21. Write a program   for multiplication of two square Matrices.

Test Data :

Input the rows and columns of first matrix : 2 2

Input the rows and columns of second matrix : 2 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Input elements in the second matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Expected Output :

The First matrix is :

1 2

3 4

The Second matrix is :

5 6

7 8

The multiplication of two matrix is :

19 22

43 50

22. Write a program   to find transpose of a given matrix.

Test Data :

Input the rows and columns of the matrix : 2 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The matrix is :

1 2

3 4

The transpose of a matrix is :

1 3

2 4

23. Write a program   to find sum of right diagonals of a matrix.

Test Data :

Input the size of the square matrix : 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The matrix is :

1 2

3 4

Addition of the right Diagonal elements is :5

Elements in array are:

24. Write a program   to find the sum of left diagonals of a matrix.

Test Data :

Input the size of the square matrix : 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The matrix is :

1 2

3 4

Addition of the left Diagonal elements is :5

25. Write a program   to find sum of rows an columns of a Matrix.

Test Data :

Input the size of the square matrix : 2

Input elements in the first matrix :

element - [0],[0] : 5

element - [0],[1] : 6

element - [1],[0] : 7

element - [1],[1] : 8

Expected Output :

The First matrix is :

The matrix is :

5 6

7 8

The sum or rows and columns of the matrix is :

5 6 11

7 8 15

12 14

26. Write a program   to print or display the lower triangular of a given matrix.

Test Data :

Input the size of the square matrix : 3

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [0],[2] : 3

element - [1],[0] : 4

element - [1],[1] : 5

element - [1],[2] : 6

element - [2],[0] : 7

element - [2],[1] : 8

element - [2],[2] : 9

Expected Output :

The matrix is :

1 2 3

4 5 6

7 8 9

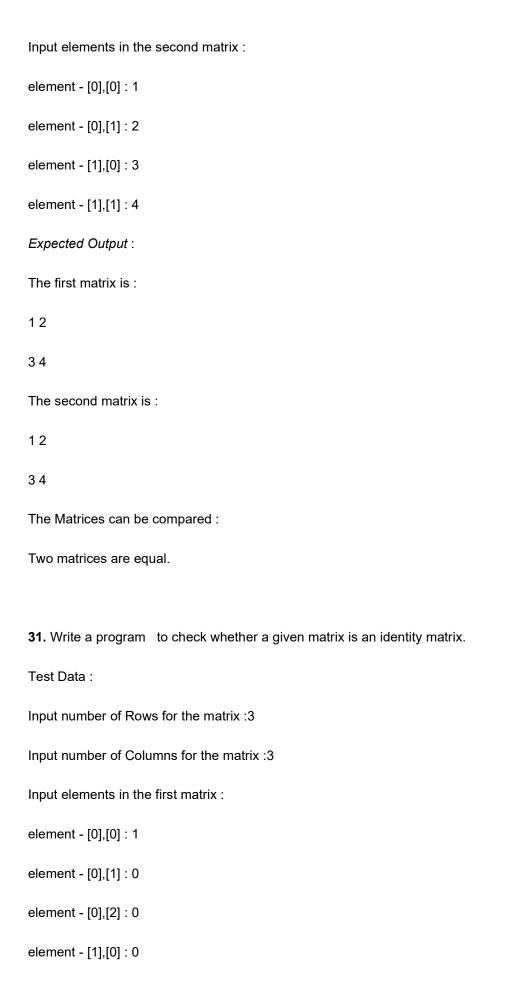Setting zero in lower triangular matrix

1 2 3

0 5 6

0 0 9

27. Write a program   to print or display upper triangular matrix.

Test Data :

Input the size of the square matrix : 3

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [0],[2] : 3

element - [1],[0] : 4

element - [1],[1] : 5

element - [1],[2] : 6

element - [2],[0] : 7

element - [2],[1] : 8

element - [2],[2] : 9

Expected Output :
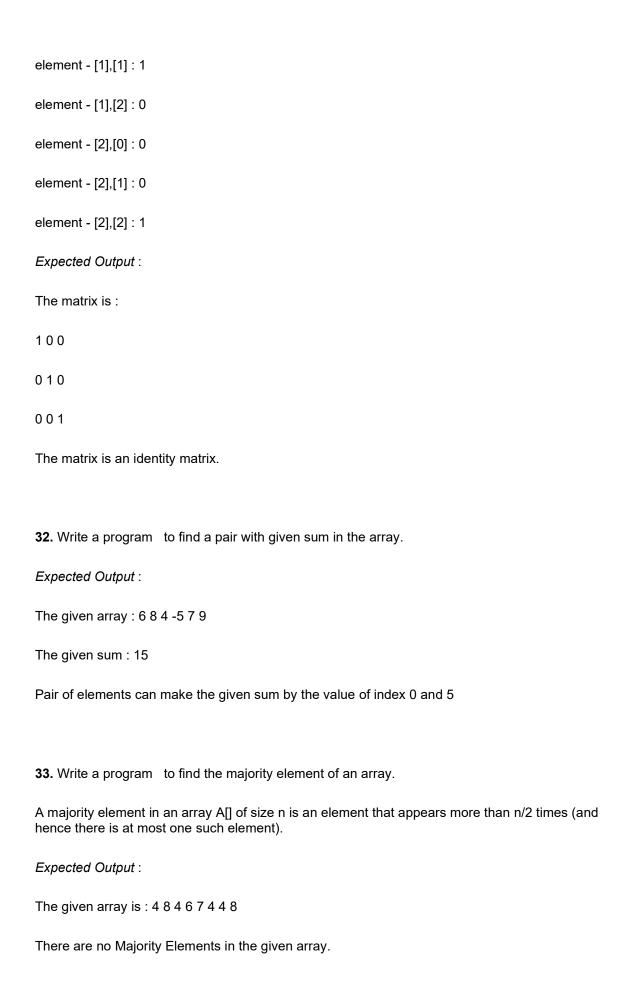
The matrix is :

1 2 3

4 5 6

7 8 9

Setting zero in upper triangular matrix

1 0 0

4 5 0

7 8 9

28. Write a program   to calculate determinant of a 3 x 3 matrix.

Test Data :

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 0

element - [0],[2] : -1

element - [1],[0] : 0

element - [1],[1] : 0

element - [1],[2] : 1

element - [2],[0] : -1

element - [2],[1] : -1

element - [2],[2] : 0

Expected Output :

The matrix is :

1 0 -1

0 0 1

-1 -1 0

The Determinant of the matrix is: 1

29. Write a program   to accept a matrix and determine whether it is a sparse matrix.

Test Data :

Input the number of rows of the matrix : 2

Input the number of columns of the matrix : 2

Input elements in the first matrix :

element - [0],[0] : 0

element - [0],[1] : 0

element - [1],[0] : 1

element - [1],[1] : 0

Expected Output :

The given matrix is sparse matrix.

There are 3 number of zeros in the matrix

30. Write a program   to accept two matrices and check whether they are equal.

Test Data :

Input Rows and Columns of the 1st matrix :2 2

Input Rows and Columns of the 2nd matrix :2 2

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Input elements in the second matrix :

element - [0],[0] : 1

element - [0],[1] : 2

element - [1],[0] : 3

element - [1],[1] : 4

Expected Output :

The first matrix is :

1 2

3 4

The second matrix is :

1 2

3 4

The Matrices can be compared :

Two matrices are equal.

31. Write a program   to check whether a given matrix is an identity matrix.

Test Data :

Input number of Rows for the matrix :3

Input number of Columns for the matrix :3

Input elements in the first matrix :

element - [0],[0] : 1

element - [0],[1] : 0

element - [0],[2] : 0

element - [1],[0] : 0

element - [1],[1] : 1

element - [1],[2] : 0

element - [2],[0] : 0

element - [2],[1] : 0

element - [2],[2] : 1

Expected Output :

The matrix is :

1 0 0

0 1 0

0 0 1

The matrix is an identity matrix.

32. Write a program   to find a pair with given sum in the array.

Expected Output :

The given array : 6 8 4 -5 7 9

The given sum : 15

Pair of elements can make the given sum by the value of index 0 and 5

33. Write a program   to find the majority element of an array.

A majority element in an array A[] of size n is an element that appears more than n/2 times (and hence there is at most one such element).

Expected Output :

The given array is : 4 8 4 6 7 4 4 8

There are no Majority Elements in the given array.

34. Write a program to find the number occurring odd number of times in an array.

All numbers occur even number of times except one number which occurs odd number of times.

Expected Output :

The given array is : 8 3 8 5 4 3 4 3 5

The element odd number of times is : 3

35. Write a program to find the largest sum of contiguous subarray of an array.

Expected Output :

The given array is : 8 3 8 -5 4 3 -4 3 5

The largest sum of contiguous subarray is : 21

36. Write a program to find the missing number from a given array. There are no duplicates in list.

Expected Output :

The given array is : 1 3 4 2 5 6 9 8

The missing number is : 7

37. Write a program to find the pivot element of a sorted and rotated array using binary search.

Pivot element is the only element in input array which is smaller than it's previous element.

A pivot element divided a sorted rotated array into two monotonically increasing array.

Expected Output :

The given array is : 14 23 7 9 3 6 18 22 16 36

The Pivot Element in the array is : 3

38. Write a program to merge one sorted array into another sorted array.

Pivot element is the only element in input array which is smaller than it's previous element.

A pivot element divided a sorted rotated array into two monotonically increasing array.

Expected Output :

The given Large Array is : 10 12 14 16 18 20 22

The given Small Array is : 11 13 15 17 19 21

After merged the new Array is :

10 11 12 13 14 15 16 17 18 19 20 21 22

39. Write a program to rotate an array by N positions.

Expected Output :

The given array is : 0 3 6 9 12 14 18 20 22 25 27

From 4th position the values of the array are : 12 14 18 20 22 25 27

Before 4th position the values of the array are : 0 3 6 9

After rotating from 4th position the array is:

12 14 18 20 22 25 27 0 3 6 9

40. Write a program to find the ceiling in a sorted array.

N.B.: Given a sorted array in ascending order and a value x, the ceiling of x is the smallest element in array greater than or equal to x, and the floor is the greatest element smaller than or equal to x.

Expected Output :

The given array is : 1 3 4 7 8 9 9 10

The ceiling of 5 is: 7

41. Write a program   to find the Floor and Ceil of the number 0 to 10 from a sroted array.

Expected Output :

The given array is : 1 3 5 7 8 9

Number: 0 ceiling is: 1 floor is: -1

Number: 1 ceiling is: 1 floor is: 1

Number: 2 ceiling is: 3 floor is: 1

Number: 3 ceiling is: 3 floor is: 3

Number: 4 ceiling is: 5 floor is: 3

Number: 5 ceiling is: 5 floor is: 5

Number: 6 ceiling is: 7 floor is: 5

Number: 7 ceiling is: 7 floor is: 7

Number: 8 ceiling is: 8 floor is: 8

Number: 9 ceiling is: 9 floor is: 9

Number: 10 ceiling is: -1 floor is: 9

42. Write a program   to find the smallest missing element from a sorted array.

Expected Output :

The given array is : 0 1 3 4 5 6 7 9

The missing smallest element is: 2

43. Write a program   to to print next greater elements in a given unsorted array. Elements for which no greater element exist, consider next greater element as -1.

Expected Output :

The given array is : 5 3 10 9 6 13

Next Bigger Elements are:

Next bigger element of 5 in the array is: 10

Next bigger element of 3 in the array is: 10

Next bigger element of 10 in the array is: 13

Next bigger element of 9 in the array is: 13

Next bigger element of 6 in the array is: 13

Next bigger element of 13 in the array is: -1

Next Bigger Elements Array:

10 10 13 13 13 -1

44. Write a program   to find the two repeating elements in a given array.

Expected Output :

The given array is : 2 7 4 7 8 3 4

The repeating elements are: 7 4

45. Write a program   to find two elements whose sum is closest to zero.

Expected Output :

The given array is : 38 44 63 -51 -35 19 84 -69 4 -46

The Pair of elements whose sum is minimum are:

[44, -46]

46. Write a program   to find the smallest positive number missing from an unsorted array.

Expected Output :

The given array is : 3 1 4 10 -5 15 2 -10 -20

The smallest positive number missed is: 5

47. Write a program   to find a subarray with given sum from the given array.

Expected Output :

The given array is : 3 4 -7 1 3 3 1 -4

[0..1] -- { 3 4 }

[0..5] -- { 3 4 -7 1 3 3 }

[3..5] -- { 1 3 3 }

[4..6] -- { 3 3 1 }

48. Write a program   to find if a given integer x appears more than n/2 times in a sorted array of n integers.

Expected Output :

The given array is : 1 3 3 5 4 3 2 3 3

The given value is : 3

3 appears more than 4 times in the given array[]

49. Write a program   to find majority element of an array.

Expected Output :

The given array is : 1 3 3 7 4 3 2 3 3

The majority of the Element : 3

50. Write a program   to print a matrix in spiral form.

Expected Output :

The given array in matrix form is :

1 2 3 4 5

6 7 8 9 10

11 12 13 14 15

16 17 18 19 20

The spiral form of above matrix is:

1 2 3 4 5 10 15 20 19 18 17 16 11 6 7 8 9 14 13 12

51. Write a program   to find the maximum circular subarray sum of a given array.

Expected Output :

The given array is : 10 8 -20 5 -3 -5 10 -13 11

The maximum circular sum in the above array is: 29

52. Write a program   to count the number of triangles can be fromed from a given array.

Expected Output :

The given array is : 6 18 9 7 10

Number of possible triangles can be formed from the array is: 5

53. Write a program   to find the number of times (frequency) occurs a given number in an array.

Expected Output :

The given array is : 2 3 4 4 4 4 5 5 5 6 7 7

The number of times the number 4 occurs in the given array is: 4

54. Write a program   to sort an array of 0s, 1s and 2s.

Expected Output :

The given array is : 0 1 2 2 1 0 0 2 0 1 1 0

After sortig the elements in the array are:

0 0 0 0 0 1 1 1 1 2 2 2

55. Write a program   to check whether an array is subset of another array.

Expected Output :

The given first array is : 4 8 7 11 6 9 5 0 2

The given second array is : 5 4 2 0 6

The second array is the subset of first array.

56. Write a program   to return the minimum number of jumps to reach the end of the array.

Expected Output :

The given array is : 1 3 5 8 9 2 6 7 6 8 9 1 1 1

The minimum of number of jumps is required to reach the end is: 3

57. Write a program   to find minimum element in a sorted and rotated array.

Expected Output :

The given array is : 3 4 5 6 7 9 2

The minimum element in the above array is: 2

58. Write a program   to move all zeroes to the end of a given array.

Expected Output :

The given array is : 2 5 7 0 4 0 7 -5 8 0

The new array is:

2 5 7 8 4 -5 7 0 0 0

59. Write a program   to return the counting sort on an array.

Expected Output :

The given array is : 4 14 8 0 2 5 2 1 0 17 9 0 5

After sorting the elements in the array are: 0 0 0 1 2 2 4 5 5 8 9 14 17

60. Write a program   to find the row with maximum number of 1s.

Expected Output :

The given 2D array is :

0 1 0 1 1

1 1 1 1 1

1 0 0 1 0

0 0 0 0 0

1 0 0 0 1

The index of row with maximum 1s is: 1

61. Write a program   to find maximum product subarray in a given array.

Expected Output :

The given array is : -4 9 -7 0 -15 6 2 -3

The maximum product of a sub-array in the given array is: 540

62. Write a program   to find the largest subarray with equal number of 0s and 1s.

Expected Output :

The given array is : 0 1 0 0 1 1 0 1 1 1

Subarray found from the index 0 to 7

63. Write a program to replace every element with the greatest element on its right side.

Expected Output :

The given array is : 7 5 8 9 6 8 5 7 4 6

After replace the modified array is: 9 9 9 8 8 7 7 6 6 0

64. Write a program to find the median of two sorted arrays of same size.

Expected Output :

The given array - 1 is : 1 5 13 24 35

The given array - 2 is : 3 8 15 17 32

The Median of the 2 sorted arrays is: 14

65. Write a program to find the product of an array such that product is equal to the product of all the elements of arr[] except arr[i].

Expected Output :

The given array is : 1 2 3 4 5 6

The product array is: 720 360 240 180 144 120

66. Write a program to count the number of inversion in a given array.

Expected Output :

The given array is : 1 9 6 4 5

The inversions are: (9, 6) (9, 4) (9, 5) (6, 4) (6, 5)

The number of inversion can be formed from the array is: 5

67. Write a program   to search an element in a row wise and column wise sorted matrix.

Expected Output :

The given array in matrix form is :

15 23 31 39

18 26 36 43

25 28 37 48

30 34 39 50

The given value for searching is: 37

The element Found at the position in the matrix is: 2, 2

68. Write a program   to return maximum sum such that no two elements are adjacent.

Expected Output :

The given array is : 1 3 5 9 7 10 1 10 100

The maximum sum from the array such that no two elements are adjacent is: 122

69. Write a program   to find out the maximum difference between any two elements such that larger element appears after the smaller number.

Expected Output :

The given array is : 7 9 5 6 13 2

The elements which provide maximum difference is: 5, 13

The Maximum difference between two elements in the array is: 8

70. Write a program to find two numbers that occur odd number of times in an array.

Expected Output:

The given array is: 6 7 3 6 8 7 6 8 3 3

The two numbers occuring odd number of times are: 3 & 6

71. Write a program to find the median of two sorted arrays of different size.

Expected Output:

The given first array is : 90 240 300

The given second array is : 10 13 14 20 25

The median of two different size arrays are : 22.500000

72. Write a program to return only the unique rows from a given binary matrix.

Expected Output:

The given array is :

0 1 0 0 1

1 0 1 1 0

0 1 0 0 1

1 0 1 0 0

The unique rows of the given array are :

0 1 0 0 1

1 0 1 1 0

1 0 1 0 0

73. Write a program   to print all unique elements of an unsorted array.

Expected Output:

The given array is : 1 5 8 5 7 3 2 4 1 6 2

Unique Elements in the given array are:

1 5 8 7 3 2 4 6

74. Write a program   to find the sum of upper triangular elements of a matrix.

Expected Output:

The given array is :

1 2 3

4 5 6

7 8 9

The elements being summed of the upper triangular matrix are: 2 3 6

The Sum of the upper triangular Matrix Elements are: 11

75. Write a program   to find the sum of lower triangular elements of a matrix.

Expected Output:

The given array is :

1 2 3

4 5 6

7 8 9

The elements being summed of the lower triangular matrix are: 4 7 8

The Sum of the lower triangular Matrix Elements are: 19

76. Write a program   to find largest number possible from the set of given numbers.

Expected Output:

The given numbers are :

15 628 971 9 2143 12

The largest possible number by the given numbers are: 997162821431512

77. Write a program   to generate a random permutation of array elements.

Expected Output:

The given array is:

1 2 3 4 5 6 7 8

The shuffled elements in the array are:

2 8 7 3 4 5 1 6

78. Write a program   to find four array elements whose sum is equal to given number.

Expected Output:

The given array is:

3 7 1 9 15 14 6 2 5 7

The elements are:

3, 15, 14, 5

79. Write a program   to sort n numbers in range from 0 to n^2.

Expected Output:

The given array is: 37 62 52 7 48 3 15 61

Sorted array is: 3 7 15 37 48 52 61 62

80. Write a program   to count all distinct pairs for a specific difference.

Expected Output:

The given array is:

5 2 3 7 6 4 9 8

The distinct pairs for difference 5 are: [7, 2] [8, 3] [9, 4]

Number of distinct pairs for difference 5 are: 3

81. Write a program   to find the maximum repeating number in a given array.

The array range is [0..n-1] and the elements are in the range [0..k-1] and k<=n..

Expected Output:

The given array is:

2 3 3 5 3 4 1 7 7 7 7

The maximum repeating number is: 7

82. Write a program   to print all possible combinations of r elements in a given array.

Expected Output:

The given array is:

1 5 4 6 8 The combination from by the number of elements are: 4

The combinations are:

1 5 4 6

1 5 4 8

1 5 6 8

1 4 6 8

5 4 6 8

83. Write a program   to find a pair with the given difference.

Expected Output:

The given array is:

1 15 39 75 92

The given difference is: 53

The pair are: (39, 92)

84. Write a program   to find the minimum distance between two numbers in a given array.

Expected Output:

The given array is:

7 9 5 11 7 4 12 6 2 11

The minimum distance between 7 and 11 is: 1

85. Write a program   to Count all possible paths from top left to bottom right of a m X n matrix.

Expected Output:

The size of matrix is : 4 x 4

The all possible paths from top left to bottom right is: 20

86. Write a program   find the equilibrium index of an array.

Expected Output:

The given array is:

0 -4 7 -4 -2 6 -3 0

The equilibrium index found at : 7 5 0

87. Write a program   to find the maximum element in an array which is first increasing and then decreasing.

Expected Output:

The given array is:

2 7 12 25 4 57 27 44

The maximum element which is increasing then decreasing is: 57

88. Write a program   to find the maximum n – m such that array[n] > array[m] from a given array[].

Given an array arr[], find the maximum j – i such that arr[j] > arr[i]

Expected Output:

The given array is:

7 5 8 2 3 2 4 2 1 0

m = 0, n = 2, arr1[m] = 7 arr1[n] = 8 difference = 2

m = 3, n = 6, arr1[m] = 2 arr1[n] = 4 difference = 3

The maximum differences between two position of array index is: 3

89. Write a program   to find maximum size square sub-matrix with all 1s.

Expected Output:

The given array in matrix form is :

0 1 0 1 1

1 1 1 1 0

1 1 1 1 0

1 1 1 1 0

1 1 1 1 1

0 1 0 1 0

The maximum size sub-matrix is:

1 1 1 1

1 1 1 1

1 1 1 1

1 1 1 1

90. Given an array of size n such that every element is in the range from 0 to n-1. Write a program to rearrange the given array so that arr[i] becomes arr[arr[i]].

Expected Output:

The Original array is

2 1 4 3 0 The modified array is:

4 1 0 3 2

91. Given an unsorted array of specific size. Write a program   to find the minimum length of subarray such that,

sorting this subarray makes the whole array sorted.

Expected Output:

The given array is:

10 12 15 17 28 32 42 18 56 59 67

The minimum length of unsorted subarray which makes the given array sorted

lies between the indeces 4 and 7

92. Write a program   that checks whether the elements in an unsorted array appears consecutively or not.

Expected Output:

The given array is:

7 4 3 5 6 2

The appearence of elements in the array are consecutive.

The given array is:

7 4 4 5 6 2

The appearence of elements in the array are not consecutive.

The given array is:

7 4 9 5 6 3

The appearence of elements in the array are not consecutive.

93. Write a program   to rearrange positive and negative numbers alternatively in a given array.

N.B.: If positive numbers are more they appear at the end and for also negative numbers, they too appear in the end of the array.

Expected Output:

The given array is:

-4 8 -5 -6 5 -9 7 1 -21 -11 19

The rearranged array is:

-4 7 -5 1 -21 5 -11 8 -9 19 -6

94. Write a program   to find the maximum for each and every contigious subarray of size k from a given array.

Expected Output:

The given array is:

1 3 6 21 4 9 12 3 16 10

The length of each subarray is: 4

The contigious subarray of length 4 and their maximum value are:

1 3 6 21 ----> 21

3 6 21 4 ----> 21

6 21 4 9 ----> 21

21 4 9 12 ----> 21

4 9 12 3 ----> 12

9 12 3 16 ----> 16

12 3 16 10 ----> 16

95. Write a program   to segregate 0s and 1s in an array.

Expected Output:

The given array is:

1 0 1 0 0 1 0 1 1

The array after segregation is: 0 0 0 0 1 1 1 1 1

96. Write a program   to segregate even and odd elements on an array.
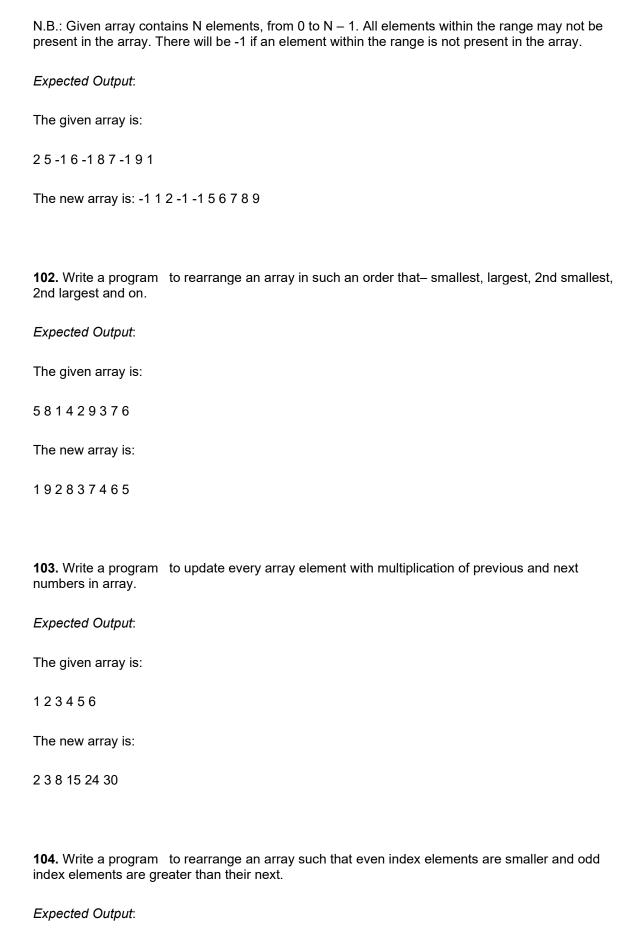
Expected Output:

The given array is:

17 42 19 7 27 24 30 54 73

The array after segregation is: 54 42 30 24 27 7 19 17 73

97. Write a program   to find the index of first peak element in a given array.

Expected Output:

The given array is:

5 12 13 20 16 19 11 7 25

The index of first peak element in the array is: 3

98. Write a program to return the largest span found in the leftmost and rightmost appearances of same value(values are inclusive) in a given array.

Expected Output:

The given array is:

17 42 19 7 27 24 17 54 73

The span between the same values in the array is: 7

99. Write a program to check if an array can be splitted in such a position that, the sum of left side of the splitting is equal to the sum of the right side.

Expected Output:

The given array is : 1 3 3 8 4 3 2 3 3

The array can be split in a position where the sum of both side are equal.

100. Write a program to return the number of clumps(a series of 2 or more adjacent elements of the same value) in a given array.

Expected Output:

The given array is:

17 42 42 7 24 24 17 54 17

The number of clumps in the array is: 2

101. Write a program to rearrange an array such that arr[i]=i.

N.B.: Given array contains N elements, from 0 to N − 1. All elements within the range may not be present in the array. There will be -1 if an element within the range is not present in the array.

Expected Output:

The given array is:

2 5 -1 6 -1 8 7 -1 9 1

The new array is: -1 1 2 -1 -1 5 6 7 8 9

102. Write a program   to rearrange an array in such an order that– smallest, largest, 2nd smallest, 2nd largest and on.

Expected Output:

The given array is:

5 8 1 4 2 9 3 7 6

The new array is:

1 9 2 8 3 7 4 6 5

103. Write a program   to update every array element with multiplication of previous and next numbers in array.

Expected Output:

The given array is:

1 2 3 4 5 6

The new array is:

2 3 8 15 24 30

104. Write a program   to rearrange an array such that even index elements are smaller and odd index elements are greater than their next.

Expected Output:

The array given is:

6 4 2 1 8 3

The new array after rearranging:

4 6 1 8 2 3

105. Write a program   to find minimum number of swaps required to gather all elements less than or equals to k.

Expected Output:

The given array is:

2 7 9 5 8 7 4

The minimum swap required is: 2

106. Write a program   to convert the array in such a way that double its value and replace the next number with 0 if current and next element are same and rearrange the array such that all 0's shifted to the end.

Expected Output:

The given array is: 0 3 3 3 0 0 7 7 0 9

The new array is: 6 3 14 9 0 0 0 0 0 0