

37. Write a program in C to find the pivot element of a sorted and rotated array using binary search. Pivot element is the only element in the input array which is smaller than its previous element. A pivot element divides a sorted rotated array into two monotonically increasing arrays.

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 in C to merge one sorted array into another sorted array. Pivot element is the only element in the input array which is smaller than its previous element. A pivot element divides a sorted rotated array into two monotonically increasing arrays.

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

51. Write a program in C 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 in C to count the number of triangles can be formed 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

56. Write a program in C 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

62. Write a program in C 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 in C 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 in C 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

71. Write a program in C 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

76. Write a program in C to find the 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 in C 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 in C to find four array elements whose sum is equal to a 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

82. Write a program in C 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

84. Write a program in C 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 in C 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

89. Write a program in C 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

91. Given an unsorted array of specific size. Write a program in C to find the minimum length of the 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 indices 4 and 7

105. Write a program in C to find the minimum number of swaps required to gather all elements less than or equal to k.

Expected Output:

The given array is: 2 7 9 5 8 7 4

The minimum swap required is: 2

107. Write a program to calculate inverse of any $n \times n$ matrix.