

## Programming Assignment 2

Try to code on your own thinking your own algorithmic solution. Efficient coders will be assigned with bonus marks.

**Write C codes for the following problems.**

**1.** Write a program in C to store elements in an array and print it.

Test Data:

Input 10 elements in the array:

element – 0 : 1

element – 1 : 1

element - 2: 2

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*Expected Output:*

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

**2.** Write a program in C 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

**3.** Write a program in C to find the sum of all elements of the array.

Test Data:

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

Input 3 elements in the array:

element - 0 : 2

element - 1 : 5

element - 2 : 8

*Expected Output :*

Sum of all elements stored in the array is : 15

**4.** Write a program in C to copy the elements of one array into another array.

Test Data :

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

Input 3 elements in the array :

element - 0 : 15

element - 1 : 10

element - 2 : 12

*Expected Output :*

The elements stored in the first array are :

15 10 12

The elements copied into the second array are :

15 10 12

**5.** Write a program in C 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 in C to print all unique elements in an array.

Test Data :

Print all unique elements of an array:

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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 in C 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 descending order is :

3 3 2 2 1 1

**8.** Write a program in C 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 in C 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 in C 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 in C 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 in C 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 in C to insert New value in the array (from sorted array).

Test Data :

Input the size of array : 3

Input 3 elements in the array in ascending order:

element - 0 : 5

element - 1 : 7

element - 2 : 9

Input the value to be inserted : 8

*Expected Output :*

The exist array list is :

5 7 9

After Insert the list is :

5 7 8 9

**14.** Write a program in C to insert New value in the array (from unsorted array).

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 in C 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 in C 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 in C 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