

LAB No. 08

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Objective of Lab No. 8:

After performing lab8, students will be able to:

- o Use array
 - o Use 1D array
 - o Use 2D array
 - o Search array elements
 - o Sort array elements
 - o Perform matrix operation
 - o Find minimum and maximum array element
1. Write a program of bubble sort algorithm using array. The algorithm can be used to sort the array elements in ascending or descending order.
 2. Write a program that will find the largest and smallest element of an array.
 3. Write a program that will add two (3 X 2) matrices and store the sum in third matrix. Display the contents of all three matrices.
 4. Consider an integer array, the number of elements should be determined by the user. The elements are also taken as input from the user. Write a program to print sum, average of all numbers, smallest and largest element of an array.
 5. Take an array of 10 elements. Split it into middle and store the elements in two different arrays. For detail see the following program.

INITIAL array :									
58	24	13	15	63	9	8	81	1	78

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After splitting :									
58	24	13	15	63					
9	8	81	1	78					

6. Take 10 integer inputs from user and store them in an array. Now, copy all the elements in another array but in reverse order.
7. Take 20 integer inputs from user and print the following: number of positive numbers
number of negative numbers number of odd numbers number of even numbers number of 0.

8. Consider an integer array, the number of elements should be determined by the user. The elements are also taken as input from the user. Write a C++ program to find the largest three elements in given array elements.
9. 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

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 delete an element at desired position from an array.
12. Write a program in C to find the second largest element in an array.
13. Write a program in C to find sum of right diagonals of a matrix.
14. Write a program in C 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.

Best of luck ☺