

List of Exercise on Array

1-D Array

Basic Exercise

1. Write a C program to calculate the sum and the average of the elements in an array containing 10 integers.
2. Write a C program to find the largest and the smallest number in a given array.
3. Write a C program to count how many even numbers and how many odd numbers are present in an array.
4. Write a C program to find the prime numbers in a given array.

Basic Array Operations for DS (Insert, remove, search element)

5. Write a C program to add a new element at the end of an array.
6. Write a C program to insert a new element at a specific position in an array.
7. Write a C program to remove an element from an array by specifying its index.
8. Write a C program to remove an element from an array by specifying its value.
9. Write a C program to take an array and a number as input from the user, and check whether that number exists in the array.

Sorting and Searching

10. Write a C program to sort the elements of an array in ascending or descending order.
11. Write a C program to perform a linear search on an array to find a given number entered by the user.
12. Write a C program to perform a linear search in an array of strings to find a given word entered by the user.
13. Write a C program to implement a linear search and count how many times a given number appears in the array.
14. Write a C program to perform a linear search and display the index of the element if it is found, or a suitable message if it is not found.

15. Write a C program to perform a linear search in an unsorted array and replace the found element with a new value entered by the user.
16. Write a C program to perform a binary search on a sorted array of integers to find a given number entered by the user.
17. Write a C program to perform a binary search and display the number of comparisons made to find the element.
18. Write a C program to implement a binary search recursively to find a given number in a sorted array.
19. Write a C program to perform a binary search on a sorted array of strings to find a given word entered by the user.

Exercises

20. Write a C program to remove duplicate elements from an array.
21. Write a C program to find the second largest number in a given array.
22. Write a C program to merge the elements of two arrays into one array.
23. Write a C program to reverse the order of elements in an array.
24. Write a C program to find how many times each element appears in an array.

2 D Array

1. Write a C program to determine whether a given matrix is an identity matrix or not.
2. A matrix is symmetric if it equals its transpose. Write a C program to check whether a given matrix is symmetric.
3. Write a C program to find the sum of all elements from a 2D array.
4. Write a C program to find the sum of the main diagonal and the secondary (anti) diagonal of a square matrix.
5. Write a C program to search for a specific value in a matrix and print its position if it is found.
6. Write a C program to compute the sum of the upper and lower triangles of a square matrix.
7. Write a C program to multiply two matrices and display the result.
8. Write a C program to find the transpose of a matrix.
9. Write a C program to check whether a given square matrix is a magic square or not.
10. Write a C program to rotate a matrix by 90 degrees clockwise.