

LINEAR SEARCH

Write a C++ program to search for a given element in a linear array. If the given element is found then display location of element otherwise, display a message saying the element is not in the array.

Steps to Solve:

- Input the size of the array and its elements from the user.
- Input the value to search for in the array.
- Use the **linear search** technique to search for the value in the array.
- If the value is found, print the index where it is located.
- If the value is not found, print an appropriate message.

Code:-

```
1. #include <iostream>
2. using namespace std;
3. int linearSearch(int data[], int size, int item) // Linear search function
4. {
5.     for (int i = 0; i < size; i++) {
6.         if (data[i] == item) // Check if the current element matches the item
7.         {
8.             return i; // Return the index if item is found
9.         }
10.    }
11.    return -1; // Return -1 if item is not found
12. }
13.
14. int main()
15. {
16.     int size;
17.     cout << "Enter the size of the array: ";
18.     cin >> size;
19.     int data[size]; // Declare an array of the given size
20.     cout << "Enter " << size << " elements: ";
21.     for (int i = 0; i < size; i++)
22.     {
23.         cin >> data[i];
24.     }
25.
26.     int item;
27.     cout << "Enter the element to search";
28.     cin >> item;
29.
30.     int result = linearSearch(data, size, item); // Call the linear search
function
31.     if (result != -1) // Check the result and display the appropriate message
32.     {
33.         cout << "Element found at index " << result << endl;
34.     } else {
35.         cout << "Element not found in the array" << endl;
36.     }
37.     return 0;
38. }
```