

Aim:- Program to store the elements in 1-D array and perform the operations like searching, sorting, reversing the elements.

Software used:- VS Code, GCC

Theory:- An array is a collection of items stored at contiguous memory location. This idea is to store multiple items of the same type together. This makes it easier to calculate the position of each element by simple adding an offset to base value, i.e., the memory location of the first element of the array. The type of arrays depends upon the number of dimensions i.e. 1-D array, 2-D array, 3-D array etc.

Arrays make operations like searching, sorting etc easier

Searching:- Searching algorithms are designed to find whether a data element exist in a data structure or not. The speed of this algorithm depends upon the type of array and how it is sorted. For unsorted array sequential search is used while interval search is used in sorted array.

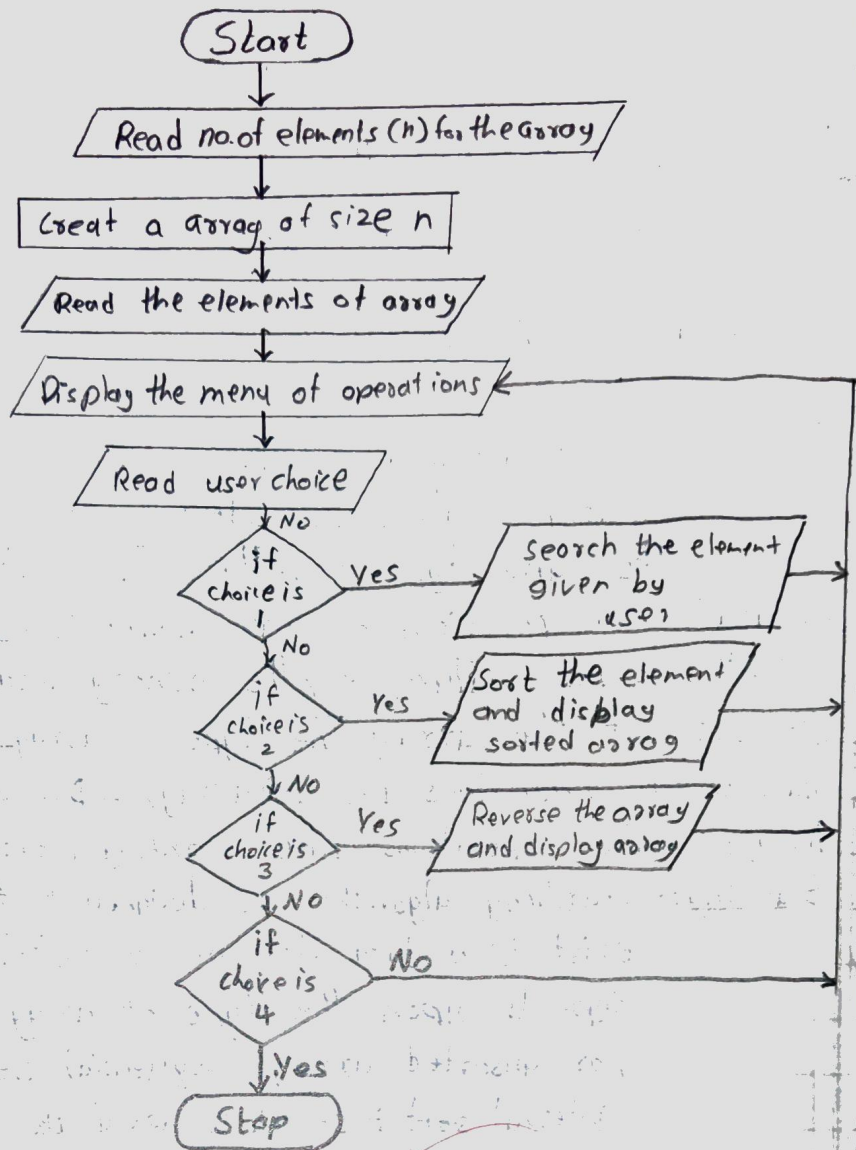
Eg. of search algorithms are 1) Linear Search

2) Binary Search

3) Fibonacci Search etc.

Sorting:- Sorting algorithm is used to rearrange a given array according to the comparison operator of elements. The speed of sorting depends upon the type of array and type of algorithm. Eg. of sort algorithms used 1) Bubble sort 2) Selection sort 3) Merge sort etc.

Flowchart :-



Traversing :- Traversing is visiting each element of an array one by one.

Reversing :- Changing the order of array, i.e. first element becomes last, second becomes second last and so on.