OPERATIONS ON AN ARRAY

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→ Following operations are supported by an Array.

- → Transversal
- → Insertion
- → Deletion
- → Search

⇒ There can be many other operations one can perform on arrays as well! eg: Sorting asc, Sorting desc. etc.

→ Transversal:

Visiting every element of an array once.

Why Transversal? → For use cases like:

→ Sorting all elements → using SCANF

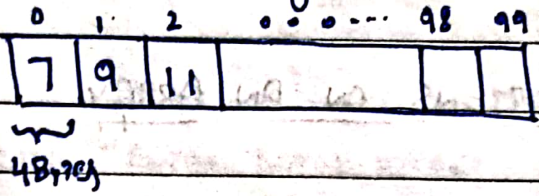
→ Printing all elements → using PRINTF

→ An important note about arrays:

→ If we create an array of length 100 using a[100] in C language, we need not use all the elements. It is possible for a program to use just 60 elements out of these 100.

↳ But we cannot go beyond 100 elements.

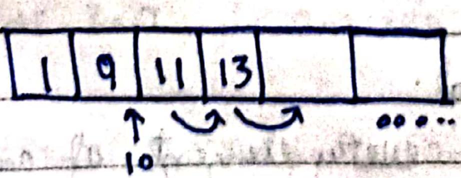
→ An array can easily be traversed using a for loop in C lang.



→ Insertion:

An element can be inserted in an array at a specified position.

In order for this operation to be successful, the array should have enough capacity.

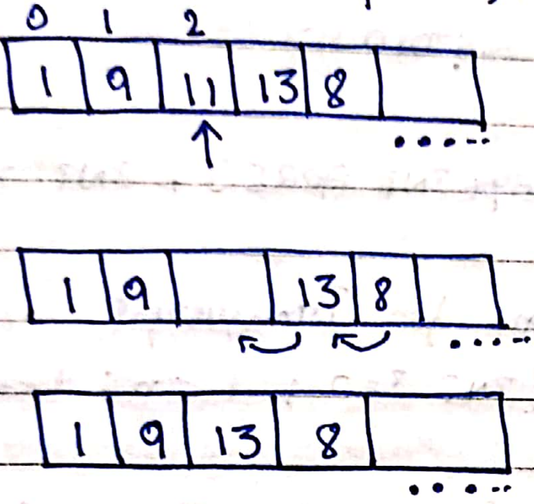


⇒ Elements need to be shifted to maintain relati order.

→ When no position is specified its best to insert the element at the end.

→ Deletion :

An element at specified position can be deleted creating a void which needs to be fixed by shifting all the elements to the left as follows:



→ Delete 11 at INDEX 2.

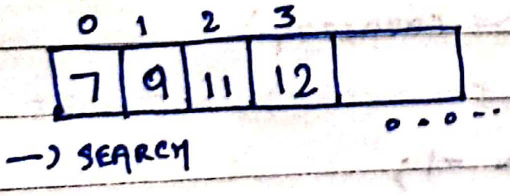
Shift the elempty.

Deletion done!

→ We can also bring the last element of the array to fill the void if the relative ordering is not important.

→ Searching :

Searching can be done by ~~tran~~ traversing the array until the element to be searched is found.



⇓
For sorted array time is taken to search is much less than unsorted array!!

→ Sorting :

Sorting means arranging an array in order (asc or desc) .

12	7	18	1	8

UNSORTED ARRAY

⇒

1	7	8	12	18

SORTED ARRAY