

## Assignment 1

Title - Write a program for Implementation and deletion in a specific position in an Array using Functions

Aim - Use arrays and create functions to add and remove and print data from specific positions in an array and print the entire data.

### Theory

For inserting an element into an array in a certain position, we need to move the element at that position and all the following ones one space forward (increase their index by 1) then place the element into the array at the freed up position. We use a for loop starting at the position where the element is to be inserted and ending at the end of the array.

$a[4] = \boxed{1 \ 2 \ 3} \quad \text{Insert 6 at } a[2]$

index of elements 0 1 2 3

$a[4] = \boxed{1 \ 2 \ 6 \ 3}$

In this case, we have taken input of the index and the number to be inserted.

For deletion, we need to move the elements in the array one space back in order to create an empty space in the end of the array. The loop starts from the index and ends at the end of the array.

	0	1	2	3
$a[4]$	11	22	33	44

Delete element at  $a[0]$

$a[4]$	22	33	44
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To display an array, a for loop from 0 to the end is used (old position)

Conclusion

Both insert and delete functions change the number of non-empty spaces in an array and shift the necessary elements to produce the desired outputs. They are fundamental operations and can be added upon in future classes. They both are affected by the number of elements in the array and are size dependent.