Insertion before given index of an array—

In this condition, we have given a location (index) of array before which, new element has to be inserted. The time we seek till index-1 that means one location ahead of given index, rest of the activities are same as previous example.

Algorithm — Let us assume A is an array with N elements. MAX is the maximum number of element it can store..

```
Begin
  If N = MAX, return
 ELSE
     N = N + 1
     Seek Location index
     For all elements from A[index-1] to A[N]
         Move to next adjacent location
     A[index - 1] = New_element
End
```

Implementing Programmatically in C :-

```
#include <stdio.h>
#define MAX 5

void main(){
    int array[MAX] = {11, 12, 14, 15};

int N =4;
int i =0;
int index = 3;
int value =13;
printf("Printing array before insertion : \n");
for(i=0 ; i < N ; i++){
 printf(" array [%d] = %d \n", i, array[i]);
 }
for(i=N ; i>=index + 1; i--){
 array [i+1] = array [i];
 }
array[index + 1] = value;
 N++;
printf("Printing array after insertion:\n");
for(i=0 ; i< N ; i++) {
printf("array[%d] = %d \n", i, array[i]);
 } getch();
}
```

The program's output will be :—

```
Printing array before insertion :
    array[0] = 11
    array[1] = 12
    array [2] = 14
    array [3] = 15
Printing array after insertion :
      array [0] = 11
      array [1] = 12
      array [2] = 13
      array[3] = 14
      array[4] = 15
```