**Algorithm**

**Task 1 Insertion:**

**Initial Data:**

        size: curSize = 7;

        value to insert: n = 50;

        position: pos = 4;

        array: arr;

        counter: ctr = 1;

**Steps:**

        [1st step: Initialize an array]:

            1. malloc an integer array to sizeof "curSize"

            2. while ctr < curSize do step 3, 4

            3. Set an array at index of ctr-1 to ctr\*11 ==> arr[ctr-1] = ctr \* 11

            4. Increase the value of ctr by 1

            // Current array = {11, 22, 33, 44, 55, 66, 77}

        [2nd step: Resize an array]:

            1. Increase the value of curSize by 1 and set value of "ctr" to the value of "curSize" - 1

            2. realloc the array to the size of "curSize"

        [3rd step: Shift the value of the array]

            1. Shift the array start from the last element of the array

            while ctr > pos do [Action]

            [Action]:

                At ctr == 7

                    set array at the 7th index to the value of the array of the 6th index ==> arr[7] = arr[7-1]

                    // The array should be {11, 22, 33, 44, 55, 66, 77, 77}

                At ctr == 6

                    set array at the 6th index to the value of the array of the 5th index ==> arr[6] = arr[6-1]

                    // The array should be {11, 22, 33, 44, 55, 66, 66, 77}

                At ctr == 5

                    set array at the 5th index to the value of the array of the 4th index ==> arr[5] = arr[5-1]

                    // The array should be {11, 22, 33, 44, 55, 55, 66, 77}

                Decrease the value of "ctr" by 1

        [4th step: Set the value of the array at the position we want.]

            1. Set the value of the array at the "pos" index to the value of "n" ==> arr[pos] = n

        // The array should be = {11, 22, 33, 44, 50, 55, 66, 77} :)

**Task 2 Deletion:**

    \*\*Suppose this action executed after the insertion\*\*

**Initial Data:**

        size: curSize = 8;

        position: pos = 6;

        array: arr;

        counter: ctr = 1;

**Steps:**

        [1st step: Shift the value of the array to the left]

            1. Shift the array start from the "pos" index to the last element of the array

            2. set the value of "ctr" to the value of "pos" ==> ctr = pos

            // Current array = {11, 22, 33, 44, 50, 55, 66, 77}

            while ctr < curSize - 1 do [Action]

            [Action]:

                1. At ctr == pos

                    set array at the "pos" index to the value of the array of the "pos" + 1 th index ==> arr[6] = arr[7+1]

                    // The array should be {11, 22, 33, 44, 50, 55, 77, 77}

                2. Increase the value of "ctr" by 1

        [2nd step: Resize an array]:

            1. Decrease the value of curSize by 1

            2. realloc the array to the size of "curSize"

        // The final array should be = {11, 22, 33, 44, 50, 55, 77} :)