Solution Review: Delete an Element at a Specific Index

Let's go over the solution review of the challenge given in the previous lesson.

We'll cover the following

Solution#

Press the **RUN** button and see the output!

```
12
13  // delete_element function
14  void delete_element(int *&arr, int size, int index) {
15    // Declare new array dynamically
16    int * new_arr = new int[size - 1];
17    // Traverse array
18    for (int i = 0; i < size - 1; i++) {
19      //
20      if (i == index || i > index) {
21        new_arr[i] = arr[i + 1];
22      }
23      else {
24        // Copy elements in new array
25        new_arr[i] = arr[i];
26
27      }
28    }
29    // Free memory pointed out by arr
```

```
30    delete[] arr;
31    // Pointer arr will point to new_arr
32    arr = new_arr;
33    //return arr;
34  }
35
36  // main function
37  int main() {
38
39    // Initialize variables
```







```
Output                                                    1.09s

 0 1 2 3 4
 0 1 2 4
```

Explanation#

To delete the element at the given index, we copy the elements before the given index in a new array. However, when we reach the given index, we left shift the rest of the values in a new array. In this way, we delete the element at the given index.

delete_element function

The `delete_element` function takes a pointer to the `int` array in its input parameters. It also takes the values for `size` and `index`.

First, declare a new array dynamically of a size equal to `size-1` as we will be deleting one element. Traverse the original array. If the index `i` is less than the `index` to be deleted, simply copy the elements from the original array to a new array **(Line No. 25)**. When `i` becomes equal to `index`, ignore

the `index` element and fill each element of a new array with the next element of the original array. Free the memory pointed out by `arr` and point `arr` to `new_arr`.

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