

Array Practice Set –II

1. Given an array `arr[]` of n integers, construct a Product Array `prod[]` (of same size) such that `prod[i]` is equal to the product of all the elements of `arr[]` except `arr[i]`. Solve it without division operator and in $O(n)$.

Example :

`arr[] = {10, 3, 5, 6, 2}`

`prod[] = {180, 600, 360, 300, 900}`

2. <https://practice.geeksforgeeks.org/problems/minimum-steps-to-get-desired-array/0>

3. <https://practice.geeksforgeeks.org/problems/find-second-largest-element/0>

4. Given n size unsorted array, find its mean and median.

Mean of an array = (sum of all elements) / (number of elements)

Median of a sorted array of size n is defined as below :

It is middle element when n is odd and average of middle two elements when n is even.

5. Given a square matrix, turn it by 90 degrees in anti-clockwise direction without using any extra space.

Input

```
1 2 3
4 5 6
7 8 9
```

Output:

```
3 6 9
2 5 8
1 4 7
```

Input:

```
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
```

Output:

```
4 8 12 16
3 7 11 15
2 6 10 14
1 5 9 13
```

6. Given an array of size n where all elements are distinct and in range from 0 to $n-1$, change contents of `arr[]` so that `arr[i] = j` is changed to `arr[j] = i`.

Example 1:

Input: `arr[] = {1, 3, 0, 2};`

Output: `arr[] = {2, 0, 3, 1};`

Explanation for the above output.

Since `arr[0]` is 1, `arr[1]` is changed to 0

Since `arr[1]` is 3, `arr[3]` is changed to 1

Since `arr[2]` is 0, `arr[0]` is changed to 2

Since arr[3] is 2, arr[2] is changed to 3

Example 2:

Input: arr[] = {2, 0, 1, 4, 5, 3};

Output: arr[] = {1, 2, 0, 5, 3, 4};

Example 3:

Input: arr[] = {0, 1, 2, 3};

Output: arr[] = {0, 1, 2, 3};

Example 4:

Input: arr[] = {3, 2, 1, 0};

Output: arr[] = {3, 2, 1, 0};

7. Given an array of integers, update every element with multiplication of previous and next elements with following exceptions.

- a) First element is replaced by multiplication of first and second.
- b) Last element is replaced by multiplication of last and second last.

Example:

Input: arr[] = {2, 3, 4, 5, 6}

Output: arr[] = {6, 8, 15, 24, 30}

// We get the above output using following

// arr[] = {2*3, 2*4, 3*5, 4*6, 5*6}

8. <https://leetcode.com/problems/best-time-to-buy-and-sell-stock/>

9. <https://leetcode.com/problems/sort-colors/>

10. <https://leetcode.com/problems/x-of-a-kind-in-a-deck-of-cards/>