**LAB [4], [1/31/2019] MCS 253P**

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**General Problem Description**

Given N integers, construct an array with N numbers where ith number is the product of all the elements but itself.

**Additional Problem Specifics**

Contains number 0

Is there any negative number

Range of N numbers

Could range of all product be larger than INT\_MAX

**Proposed Algorithm**

#include <iostream>

#include <cstdio>

using namespace std;

int main() {

int a[1000], product\_prefix[1000];

int n;

cin >> n;

if (n > 1000 || n <= 3) {

printf("Number of integer should be less than 1000 and greater than 3\n");

return -1;

}

for (int i = 0; i < n; i ++) {

cin >> a[i];

product\_prefix[i] = i == 0 ? a[i] : product\_prefix[i - 1] \* a[i];

}

long long product\_suffix = 1, product;

for (int i = n - 1; i >= 0; i --) {

product = (i > 0) ? product\_prefix[i - 1] : 1;

product = product \* product\_suffix;

product\_suffix = product\_suffix \* a[i];

a[i] = product;

}

for (int i = 0; i < n; i ++)

cout << a[i] << endl;

}