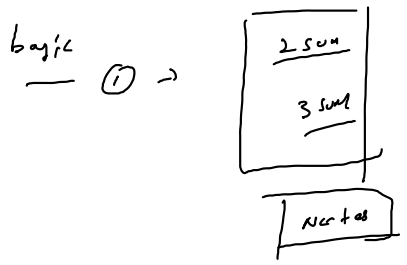
Day 01

Tuesday, 29 December 2020 7:52 PM

Homework Assignments For 12/09/2020:

Java Language

1) Array Members
2) Array List Members
3) Initialize a 2d Array
4) https://leetcode.com/problems/product-of-array-except-self/
5) https://leetcode.com/problems/two-sum/
6) https://leetcode.com/problems/3sum/



Problem Solving

1) Understanding the problem statement
2) Getting the approach
3) Coding
4) Unit Test Cases

Array of products of All elements Except Itself :

Given an array nums of *n* integers where *n* > 1, return an array output such that output[i] is equal to the product of all the elements of nums except nums[i].

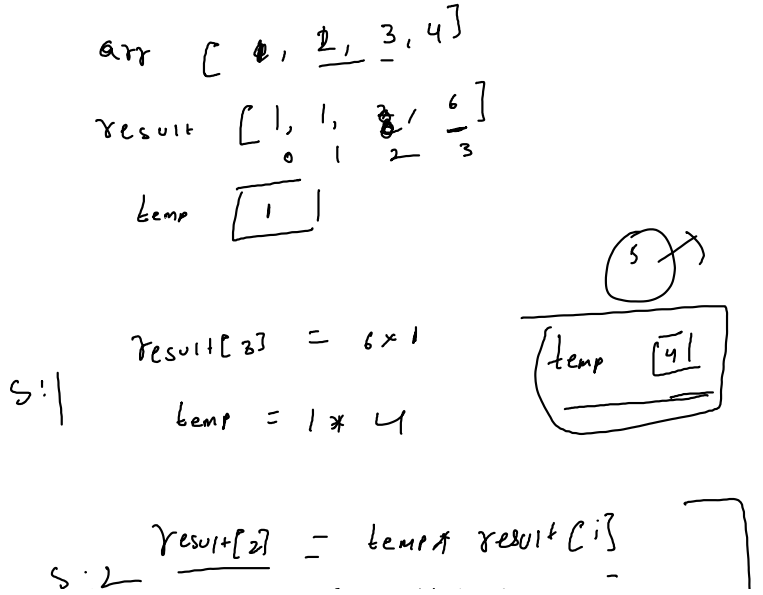
Example:
Input: [1,2,3,4]
Output: [24,12,8,6]
Constraint: It's guaranteed that the product of the elements of any prefix or suffix of the array (including the whole array) fits in a 32 bit integer.

Note: Please solve it **without division** and in O(*n*).

Hint 1 :
Create a new array with product of all elements to the left of each element .
[1, 1 ,2,6]

Hint 2:
Multiply each element in the array to product of all elements to the right of the array .
[24 , 12, 8 ,6]

```
public static int[] findProduct(int arr[])
{

  int n = arr.length;
  int i , temp = 1;

  // Allocation of result array
  int result = new int[n];

 //Product of elements on left side excluding arr[i]
 for(i = 0; i< n; i++)
 {
    result[i] = temp;
    temp = temp * arr[i];
 }

 // Intializing temp to 1 on right side excluding arr[i]
 temp = 1;
 // Input Array [1, 2 , 3 , 4 ]
 // Left Array  [1 , 1 , 2 , 6]
 // Result Array[ 24  12 , 8 ,6]

 for(i = n-1; i>=0; i--)
 {
    result [i] = result[i] * temp;
    temp =  temp * arr[i];
 }


return result;
```



```
return result;

}
```

S:2 result[2] = temp * result[i]
= 4 * 2 =
temp = 4 * 3 = 12
S:3 result[i] = 12 * 1 = 12
temp = 12 * 2 = 24
S:4 result[0] = 24 * 1
temp