

## **Sum\_of\_Absolute\_Difference**

```
import java.util.Arrays;

class Sum_of_Absolute_Difference {
    public int[] getSumAbsoluteDifferences(int[] nums) {

        int n = nums.length;
        int[] result = new int[n];
        int totalSum = 0;
        for (int num : nums) {
            totalSum += num;
        }

        int leftSum = 0;

        for (int i = 0; i < n; i++) {
            int rightSum = totalSum - leftSum - nums[i];

            result[i] =
                nums[i] * i - leftSum +
                rightSum - nums[i] * (n - i - 1);

            leftSum += nums[i];
        }

        return result;
    }

    public static void main(String[] args) {
        Sum_of_Absolute_Difference sol = new Sum_of_Absolute_Difference();
```

```
int[] nums = {2, 3, 5};  
System.out.println(Arrays.toString(sol.getSumAbsoluteDifferences(nums)));  
}  
}
```