Pre sum:

Original elements in the array are not modified, frequently query the sum of given ranges.

array [0,n)

preSum[0,n+1) -> preSum[0] = 0

preSum[i] = preSum[i-1] + array[i-1]

which means the sum before array[i]

sum of array[i, j)

preSum[j] – preSum[i]

Diff array:

Given ranges are frequently incremented or decremented, return all elements in the array after modification.

Array [0,n)

diffArray[0,n+1) -> diffArray[n] = garbage

diffArray[0] = array[0], diffArray[i] = num[i] – num[i-1]

array[i,j) all elements + k

diffArray[i] + k

diffArray[j] - k