

```

1  #include <bits/stdc++.h>
2  #define ll long long
3  #define inf (int)1e9
4  #define inf18 1e18
5  using namespace std;
6
7
8  FenwickTree (BIT) sum query on 1D-Array:
9
10 // answer point update and range query
11 struct FenwickTreeSum {
12     vector<int> bit;
13     int n;
14
15     FenwickTreeSum(int n) {
16         this->n = n;
17         bit.assign(n, 0);
18     }
19
20     //build in O(n)
21     FenwickTreeSum(vector<int> a) : FenwickTreeSum(a.size()) {
22         for (int i = 0; i < n; i++) {
23             bit[i] += a[i];
24             int r = i | (i + 1);
25             if (r < n) bit[r] += bit[i];
26         }
27     }
28
29     int query(int r) {
30         int ret = 0;
31         for (; r >= 0; r = (r & (r + 1)) - 1)
32             ret += bit[r]; // to change
33         return ret;
34     }
35
36     // for all query
37     int query(int l, int r) {
38         return query(r) - query(l - 1);
39     }
40
41     void update(int idx, int delta) {
42         for (; idx < n; idx = idx | (idx + 1))
43             bit[idx] += delta; //to change
44     }
45 };

```