Hikari9 / UVa

Branch: master ▾ UVa / SPOJ GSS4 - Can you answer these queries IV.cpp Find file Copy path

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1 contributor

79 lines (70 sloc) 1.37 KB

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1  // SPOJ GSS4 - Can you answer these queries IV
2  // http://www.spoj.com/problems/GSS4/
3
4  #include <iostream>
5  #include <cstdio>
6  #include <cstring>
7  #include <cmath>
8  #include <algorithm>
9
10 using namespace std;
11 typedef long long lag;
12 const int N = 100001;
13
14 int f[N];
15 int find(int x) { return x == f[x] ? x : (f[x] = find(f[x])); }
16
17 lag arr[N], fenwick[N + 1];
18 int cmd, a, b, n, m, tc;
19 bool changed[N << 2];
20
21 void add(int i, lag x) {
22         for (++i; i <= n; i += i & -i)
23                 fenwick[i] += x;
24 }
25
26 lag sum(int i) {
27         lag s = 0;
28         for (++i; i > 0; i -= i & -i)
29                 s += fenwick[i];
30         return s;
31 }
32
33 lag query(int a, int b) {
34         return sum(b) - sum(a - 1);
35 }
36
37 lag update(int a, int b) {
38         for (a = find(a); a <= b; a = find(a + 1)) {
39                 lag x = query(a, a);
40                 lag sqrtx = sqrt(x);
41                 add(a, -x + sqrtx);
42                 if (sqrtx == 1) {
43                         f[find(a)] = find(a + 1);
44                 }
45         }
46 }
47 void build() {
48         for (int i = 0; i <= n; ++i) {
49                 fenwick[i] = 0;
50                 f[i] = i;
51         }
52         for (int i = n - 1; i >= 0; --i) {
53                 if (arr[i] == 1)
54                         f[find(i)] = find(i + 1);
```

```
55                  add(i, arr[i]);
56          }
57  }
58
59  int main() {
60          ios::sync_with_stdio(false);
61          cin.tie(0);
62          while (cin >> n) {
63                  if (tc) cout << "\n";
64                  cout << "Case #" << ++tc << ":\n";
65                  for (int i = 0; i < n; ++i)
66                          cin >> arr[i];
67                  build();
68                  cin >> m;
69                  while (m--) {
70                          cin >> cmd >> a >> b; --a, --b;
71                          if (a > b) swap(a, b);
72                          if (cmd)
73                                  cout << query(a, b) << '\n';
74                          else
75                                  update(a, b);
76                  }
77          }
78          cout << flush;
79  }
```