```
1   #include<stdio.h>
2   #include<string.h>
3   #include<algorithm>
4   using namespace std;
5
6   #define MAX 112345
7   #define left(p) (p) << 1
8   #define right(p) ((p) << 1) + 1
9
10  typedef struct { int valor, id; }mesada_t;
11
12  int n, me[MAX], lazy[4 * MAX];
13  mesada_t st[4 * MAX];
14
15  void build(int p, int l, int r) {
16    int meio = (l + r) / 2;
17    mesada_t p1, p2;
18    if (l == r) { st[p].valor = me[l]; st[p].id = l; return; }
19    build(left(p), l, meio);
20    build(right(p), meio + 1, r);
21    p1 = st[left(p)]; p2 = st[right(p)];
22    st[p].valor = max(p1.valor, p2.valor);
23    st[p].id = (p1.valor >= p2.valor) ? p1.id : p2.id;
24  }
25
26  void range_update(int p, int l, int r, int i, int j, int val) {
27    int meio = (l + r) / 2;
28    mesada_t p1, p2;
29    if (lazy[p]) {
30      st[p].valor += lazy[p];
31      if (l != r) {
32        lazy[left(p)] += lazy[p];
33        lazy[right(p)] += lazy[p];
34      }
35      lazy[p] = 0;
36    }
37    if (i > r || j < l) return;
38    if (i <= l && j >= r) {
39      st[p].valor += val;
40      if (l != r) {
41        lazy[left(p)] += val;
42        lazy[right(p)] += val;
43      }
44      return;
45    }
46    range_update(left(p), l, meio, i, j, val);
47    range_update(right(p), meio + 1, r, i, j, val);
48    p1 = st[left(p)]; p2 = st[right(p)];
49    st[p].valor = max(p1.valor, p2.valor);
50    st[p].id = (p1.valor >= p2.valor) ? p1.id : p2.id;
51  }
52
53  mesada_t rmq(int p, int l, int r, int i, int j) {
54    int meio = (l + r) / 2;
55    mesada_t ret, p1, p2;
56    if (i > r || j < l) { ret.id = -1; return ret; }
57    if (lazy[p]) {
58      st[p].valor += lazy[p];
59      if (l != r) {
60        lazy[left(p)] += lazy[p];
61        lazy[right(p)] += lazy[p];
62      }
63      lazy[p] = 0;
64    }
65    if (l >= i && r <= j) return st[p];
66    p1 = rmq(left(p), l, meio, i, j);
67    p2 = rmq(right(p), meio + 1, r, i, j);
68    if (p1.id == -1) return p2;
69    if (p2.id == -1) return p1;
70    if (p1.valor >= p2.valor) return p1;
71    return p2;
72  }
73
74  int main(void) {
```

```
75        int q, i, j, v; char c;
76        mesada_t resp;
77        while (scanf("%d %d", &n, &q) != EOF) {
78          for (i = 0; i < n; i++) scanf("%d", &me[i]);
79          memset(lazy, 0, sizeof(lazy)); build(1, 0, n - 1);
80          while (q--) {
81            scanf(" %c", &c);
82            if (c == 'C') {
83              scanf("%d %d", &i, &j); i--; j--;
84              resp = rmq(1, 0, n - 1, i, j);
85              printf("%d\n", resp.id + 1);
86            } else {
87              scanf("%d %d %d", &i, &j, &v); i--; j--;
88              range_update(1, 0, n - 1, i, j, v);
89            }}}
90        return 0;
91      }
```