

```
1: #include<iostream>
2: #include<map>
3: #include<iterator>
4:
5: using namespace std;
6:
7: typedef struct {
8:     long w;
9:     long h;
10: } Area;
11:
12: typedef struct {
13:     long xmin;
14:     long xmax;
15: } Inter;
16:
17: struct CmpInter
18: {
19:     bool operator()( Inter const& lhs, Inter const& rhs ) const
20:     {
21:         if(lhs.xmax < rhs.xmin) return true;
22:         return false;
23:     }
24: };
25:
26: typedef map<Inter, Area, CmpInter> Map;
27: typedef Map::iterator Itr;
28:
29: int main() {
30:     Map map;
31:     long n, q = 0;
32:     cin >> n;
33:     cin >> q;
34:
35:     map[{1, n}] = {1, 1};
36:
37:     long x, y = 0;
38:     char c;
39:
40:     for(int i = 0; i < q; i++) {
41:         cin >> x;
42:         cin >> y;
43:         cin >> c;
44:
45:         Itr itr = map.find({x,x});
46:
47:         if(itr == map.end()) {
48:             cout << 0 << endl;
49:             continue;
50:         }
51:
52:         Inter in = itr->first;
53:         Area a = itr->second;
54:
55:         map.erase(in);
56:
57:         if(x < in.xmax) {
58:             if(c == 'L') {
59:                 map[{x+1, in.xmax}] = {a.w + x+1 - in.xmin, a.h};
60:             } else {
61:                 map[{x+1, in.xmax}] = {1, a.h};
62:             }
63:         }
64:         if(x > in.xmin) {
65:             if(c == 'L') {
66:                 map[{in.xmin, x-1}] = {a.w, 1};
67:             } else {
68:                 map[{in.xmin, x-1}] = {a.w, a.h+in.xmax-(x-1)};
69:             }
70:         }
71:         if(c == 'L') {
72:             cout << x - in.xmin + a.w << endl;
73:         } else {
74:             cout << in.xmax - x + a.h << endl;
75:         }
76:     }
77:     return 0;
78: }
```