

```

1  #include <stdio>
2
3  bool isValidMove(int x, int y, int d) {
4      if(d == 0 && x == 1)
5          return true;
6      else if(d == 1 && y == 1)
7          return true;
8      else if(d == 2 && x == 8)
9          return true;
10     else if(d == 3 && y == 8)
11         return true;
12     else
13         return false; // valid, need to make a move
14 }
15
16 void makeAMove(int x, int y, int d, int b[9][9]) {
17     if(isInvalidMove(x, y, d))
18         return; // do nothing
19
20     int temp = b[y][x];
21     if(d == 0) {
22         b[y][x] = b[y][x-1];
23         b[y][x-1] = temp;
24     } else if(d == 1) {
25         b[y][x] = b[y-1][x];
26         b[y-1][x] = temp;
27     } else if(d == 2) {
28         b[y][x] = b[y][x+1];
29         b[y][x+1] = temp;
30     } else if(d == 3) {
31         b[y][x] = b[y+1][x];
32         b[y+1][x] = temp;
33     }
34 }
35
36 int countHorizontal(int x, int y, int b[9][9]) {
37     int count = 1;
38     int target = b[y][x];
39     int xx = x - 1;
40     while(xx >= 1 && b[y][xx] == target) {
41         ++count;
42         --xx;
43     }
44     xx = x + 1;
45     while(xx <= 8 && b[y][xx] == target) {
46         ++count;
47         ++xx;
48     }
49     return count;
50 }
51
52 int countVertical(int x, int y, int b[9][9]) {
53     int count = 1;
54     int target = b[y][x];
55     int yy = y - 1;
56     while(yy >= 1 && b[yy][x] == target) {
57         ++count;
58         --yy;
59     }
60     yy = y + 1;
61     while(yy <= 8 && b[yy][x] == target) {
62         ++count;
63         ++yy;
64     }
65     return count;
66 }
67
68
69 int main() {

```

```
70     int b[9][9];
71     for(int row = 1; row <= 8; ++row)
72         for(int col = 1; col <= 8; ++col)
73             scanf("%d", &b[row][col]);
74
75     int n;
76     scanf("%d", &n);
77     for(int i = 0; i < n; ++i) {
78         int x, y, d;
79         scanf("%d%d%d", &x, &y, &d);
80         makeAMove(x, y, d, b);
81         printf("H %d V %d\n", countHorizontal(x, y, b), countVertical(x, y, b));
82     }
83
84     return 0;
85 }
86
```