

```
1 #include <iostream>
2 #include <stdio.h>
3 #include <stdlib.h>
4
5 using namespace std;
6
7 bool above_threshold(const char *line, int column, int threshold) {
8     char buffer[20];
9     int pos = 0;
10    int i = 0;
11
12    while (column && line[pos]) {
13        if (line[pos] != ' ' && (pos == 0 || line[pos-1] == ' ')) {
14            --column;
15        }
16        ++pos;
17    }
18
19    if (column) {
20        cout << "Invalid Column" << endl;
21        exit(1);
22    }
23
24    --pos;
25    while(line[pos] != ' ' && line[pos] != '\n') {
26        buffer[i] = line[pos];
27        ++i;
28        ++pos;
29    }
30
31    buffer[i] = '\0';
32
33    return (atoi(buffer) > threshold);
34 }
35
36 // assume valid lines only have space or digits and are non-empty
37 bool valid_line(const char *line) {
38     int pos = 0;
39     while(line[pos] != '\n') {
40         if (line[pos] != ' ' && (line[pos] < '0' || line[pos] > '9')) {
41             return false;
42         }
43         ++pos;
44     }
45     return pos;
46 }
```

```
47
48 int main(int argc, const char *argv[]) {
49     char line[100];
50     int cur_n = 0;
51
52     int column = atoi(argv[1]);
53     int threshold = atoi(argv[2]);
54     int n = atoi(argv[3]);
55
56     while(fgets(line, 100, stdin) != NULL) {
57         if (valid_line(line) && above_threshold(line, column, threshold)) {
58             ++cur_n;
59             if (cur_n == n) {
60                 // only report n consecutive times. keep quiet for > n
61                 cout << "Column " << column << " above threshold "
62                     << threshold << " " << cur_n << " times." << endl;
63             }
64             } else {
65                 cur_n = 0;
66             }
67     }
68     return 0;
69 }
```