

```
#include<stdio.h>

int main() {
    int flag = 0, counter = 0, cur;
    scanf("%d",&cur);

    // flag = 0 implies we are not in the middle of a potential match
    // flag = 1 implies we have seen a 1 and are anticipating a 2
    // flag = 2 implies we have seen 1 2 and are anticipating a 1

    // While we do not see the termination symbol
    while (cur != -1) {
        if (flag == 0) {
            // Hmm this could be the start of a pattern
            if(cur == 1) {
                flag = 1;
            }
        } else if (flag == 1) {
            // We have seen 1 2
            if (cur == 2) {
                flag = 2;
            } else if (cur == 0) { // Pattern broken - we saw 1 0
                flag = 0;
            }
        } else if (flag == 2) {
            // Woohoo - we saw 1 2 1 - update the counter
            if (cur == 1) {
                counter++;
                // Make flag = 1 since this 1 could be the
                // start of a new pattern 1 2 1
                flag = 1;
            } else {
                // We either saw 1 2 0 or else 1 2 2 :(
                // Pattern not completed - back to square one!
                flag = 0;
            }
        }
        scanf("%d",&cur);
    }
    printf("%d",counter);
    return 0;
}
```