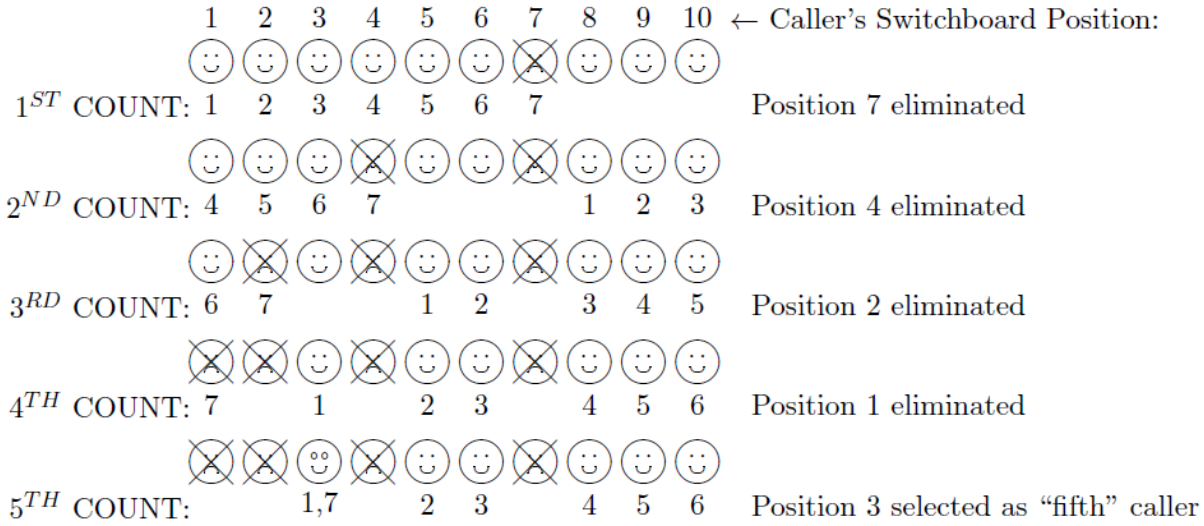
Assignment 3: Calling a radio station

A simple practical problem with a single dimensional array. Courtesy of the ACM Computer Programming Competition.

DUE: Nov 21, 2014 11:59pm

Submit the assign3.c file and the assign3.txt script file showing your compilation and testing steps.

A local radio station is holding a phone-in contest, and deejay J-Z Phus is in charge of administering the contest. He goes on the air at random times and announces things like "The fifth caller will get a chance for the grand prize." At this point, the switchboard lights up with dozens of callers. All these callers show up on a monitor in front of J-Z numbered 1, 2, 3, etc. J-Z could just pick caller number 5 at this point, but since he figures that everyone basically called in at the same time, he has decided on a different method. He picks a random number - say 7 - and then starts eliminating every seventh caller. If he hits the end of the switchboard while counting, he cycles back to the beginning, but once a caller is eliminated, their position is no longer used in the count. After eliminating 4 callers, he moves down 7 more positions and obtains his "fifth" caller. The figure below shows how this would work if J-Z's switchboard held 10 callers. In this case, the caller in position 3 is selected as the "fifth" caller.



Of course, the choice of "fifth" caller, the number of callers, and the use of the number 7 can change from call-in to call-in. You are to write a general program to determine which caller is selected given all of the pertinent information.

Input

There will be multiple independent test cases. Each test case will consist of a single line containing 3 positive integers ***n m k***, where ***n*** is the number of callers on the switchboard, and ***m*** is the number of positions J-Z skips over each time until he gets to the k^{th} caller. The value of ***n*** will always be ≥ ***k***. In the above example, ***n*** = 10; ***m*** = 7 and ***k*** = 5.

The maximum value for any of these values is 200. A line containing three zeros will terminate input.

Output
For each test case, output the position of the caller chosen as the k^{th} caller.

Sample Input
10 7 5
20 1 20
0 0 0

Sample Output
3
20