Three-handed Fingers with n=2

This game is easily evaluated since all moves are forced. The first player wins in 2.5 moves.

Three-handed Fingers with n=3

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n=3 2nd  player  1st player | 0  0  1 | 0  0  2 | 0  1  1 | 0  1  2 | 0  2  2 | 1  1  1 | 1  1  2 | 1  2  2 | 2  2  2 |
| 0 0 1 | 2 | 1 | 2 | 3 | 2 | 2 | 4 | 2 | 2 |
| 0 0 2 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 2 |
| 0 1 1 | 3 | 1 | 6 | 3 | 3 | 6 | 7 | 6 | 4 |
| 0 1 2 | 1 | 1 | 5 | 4 | 5 | 4 | 5 | 5 | 4 |
| 0 2 2 | 1 | 3 | 3 | 3 | 6 | 4 | 6 | 7 | 6 |
| 1 1 1 | 3 | 1 | 5 | 3 | 3 | 10 | 7 | 5 | 5 |
| 1 1 2 | 1 | 1 | 5 | 3 | 3 | 9 | 8 | 7 | 7 |
| 1 2 2 | 1 | 1 | 3 | 3 | 5 | 7 | 7 | 8 | 9 |
| 2 2 2 | 1 | 3 | 3 | 3 | 5 | 5 | 5 | 7 | 10 |

The table lists all positions of the game (except the ones where the game has ended). Here the 1st player is the player about to move. The red (uneven) numbers indicate the winning positions and the black (even) numbers indicate the loosing positions. From every winning position there are at least one move leading to a losing position. From every losing position all moves lead to a winning position. The number corresponds to the remaining length (in half-moves) of the game, provided both players follow their optimal strategy. The winning player strives to win as fast as possible, whereas the losing player tries to prolong the game as much as possible, thereby inviting the winning player every possibility to make a bad move.

If one wants to find the optimal move from a position with the value m, there is always at least one move leading to a position with value m-1. Every such move is an optimal move. For the positions with value 1, the winning move should be obvious.

From the table it can be seen that with the starting position 111/111 the second player can win in 5 moves (10 half-moves).