

Game move coordinates for the Discord Computer Olympiad Interface

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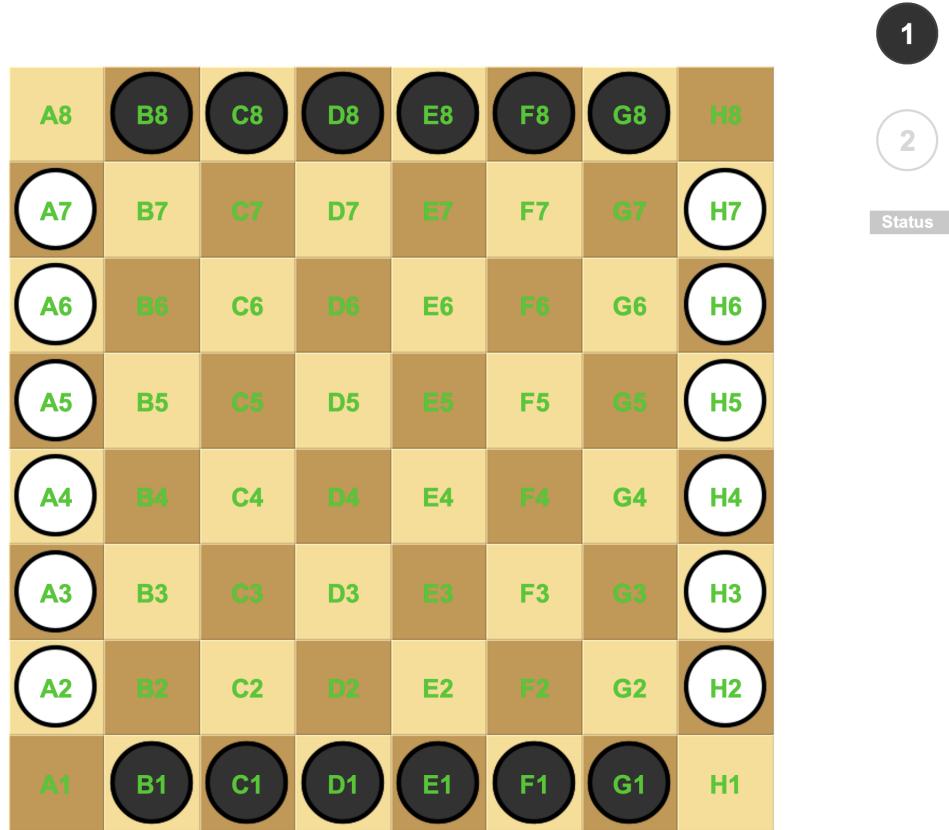
This document details the text syntax for the move coordinates of the various games available in the Discord Computer Olympiad Interface. In most cases, an action is either in the form "<coordinate>" for a placement action, for example "B2", or in the form "<initial_coordinate>-<final_coordinate>" for a movement action, for example "C3-D4". Therefore, this document details the names of the different coordinates based on their location using an image, thus allowing you to determine the coordinate of any placement or movement action. Furthermore, these images also indicate who is the first and second player by displaying their color (in the upper right corner of the image) and by drawing the pieces in the initial game state, specifying the color of each piece.

For more details consult the Ludii application, the same coordinate system and syntax of actions is used (you can for example look at the nomenclature of actions played in the "Moves" tab on the right and/or activate "View > Show Coordinates" and "View > Show Legal Moves".

If you have any doubts about this document, please contact me.

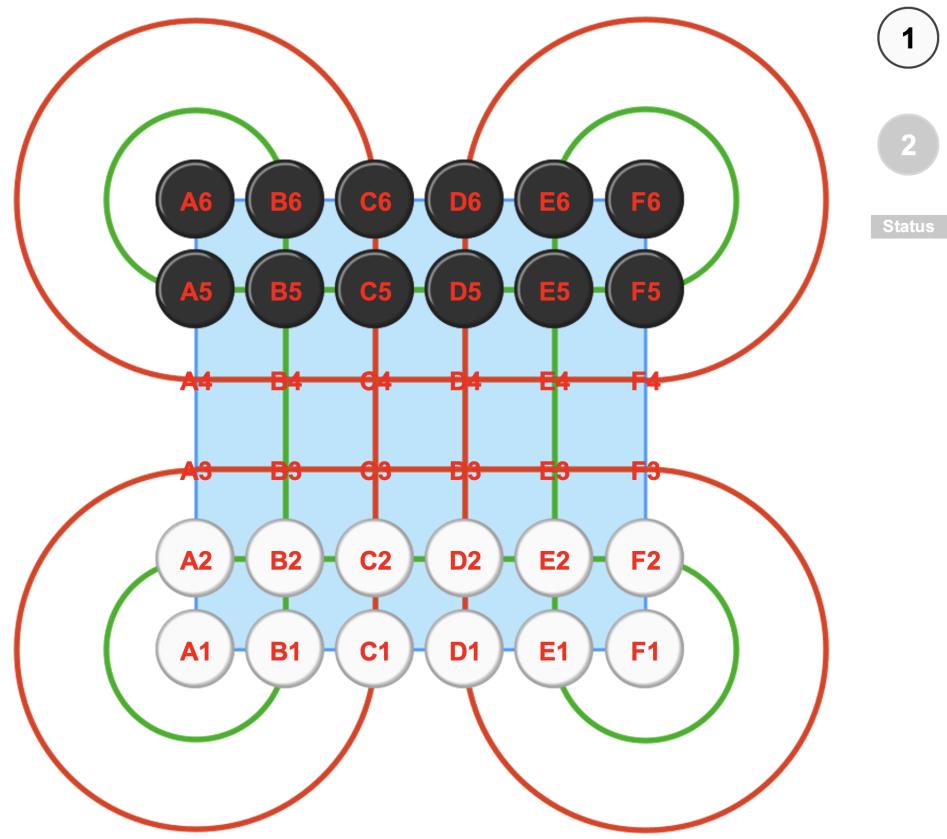
1 Lines of Action

Moves : mouvements.



2 Surakarta

Moves : mouvements.



3 Santorini

Moves : placements and mouvements.

The Ataxx board consists of a 5x5 grid of squares. The columns are labeled A, B, C, D, E and the rows are labeled 1, 2, 3, 4, 5. The squares are colored light blue. The board state is as follows:

	A5	B5	C5	D5	E5
A4	B4	C4	D4	E4	
A3	B3	C3	D3	E3	
A2	B2	C2	D2	E2	
A1	B1	C1	D1	E1	

Circle 1 is at the top right. Circle 2 is below it. Status is at the bottom right.

4 Ataxx

Moves : mouvements.

A7	B7	C7	D7	E7	F7	G7
A6	B6	C6	D6	E6	F6	G6
A5	B5	C5	D5	E5	F5	G5
A4	B4	C4	D4	E4	F4	G4
A3	B3	C3	D3	E3	F3	G3
A2	B2	C2	D2	E2	F2	G2
A1	B1	C1	D1	E1	F1	G1

Status

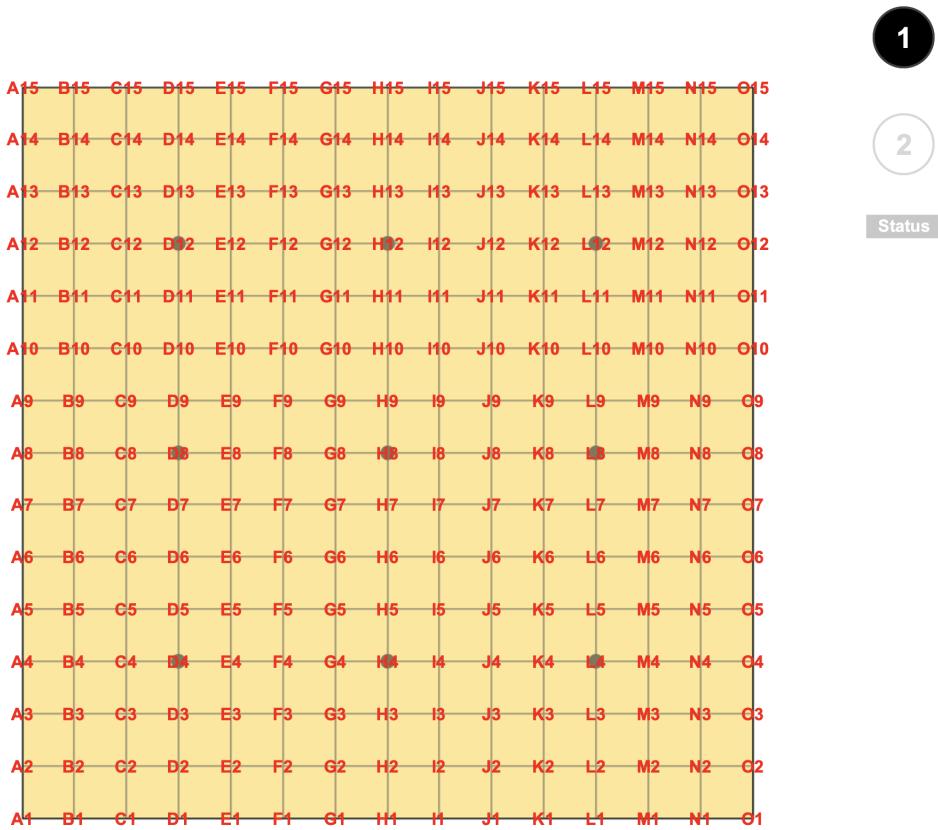
5 Connect6

Moves : placements.

A19	B19	C19	D19	E19	F19	G19	H19	I19	J19	K19	L19	M19	N19	O19	P19	Q19	R19	S19
A18	B18	C18	D18	E18	F18	G18	H18	I18	J18	K18	L18	M18	N18	O18	P18	Q18	R18	S18
A17	B17	C17	D17	E17	F17	G17	H17	I17	J17	K17	L17	M17	N17	O17	P17	Q17	R17	S17
A16	B16	C16	D16	E16	F16	G16	H16	I16	J16	K16	L16	M16	N16	O16	P16	Q16	R16	S16
A15	B15	C15	D15	E15	F15	G15	H15	I15	J15	K15	L15	M15	N15	O15	P15	Q15	R15	S15
A14	B14	C14	D14	E14	F14	G14	H14	I14	J14	K14	L14	M14	N14	O14	P14	Q14	R14	S14
A13	B13	C13	D13	E13	F13	G13	H13	I13	J13	K13	L13	M13	N13	O13	P13	Q13	R13	S13
A12	B12	C12	D12	E12	F12	G12	H12	I12	J12	K12	L12	M12	N12	O12	P12	Q12	R12	S12
A11	B11	C11	D11	E11	F11	G11	H11	I11	J11	K11	L11	M11	N11	O11	P11	Q11	R11	S11
A10	B10	C10	D10	E10	F10	G10	H10	I10	J10	K10	L10	M10	N10	O10	P10	Q10	R10	S10
A9	B9	C9	D9	E9	F9	G9	H9	I9	J9	K9	L9	M9	N9	O9	P9	Q9	R9	S9
A8	B8	C8	D8	E8	F8	G8	H8	I8	J8	K8	L8	M8	N8	O8	P8	Q8	R8	S8
A7	B7	C7	D7	E7	F7	G7	H7	I7	J7	K7	L7	M7	N7	O7	P7	Q7	R7	S7
A6	B6	C6	D6	E6	F6	G6	H6	I6	J6	K6	L6	M6	N6	O6	P6	Q6	R6	S6
A5	B5	C5	D5	E5	F5	G5	H5	I5	J5	K5	L5	M5	N5	O5	P5	Q5	R5	S5
A4	B4	C4	D4	E4	F4	G4	H4	I4	J4	K4	L4	M4	N4	O4	P4	Q4	R4	S4
A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3	L3	M3	N3	O3	P3	Q3	R3	S3
A2	B2	C2	D2	E2	F2	G2	H2	I2	J2	K2	L2	M2	N2	O2	P2	Q2	R2	S2
A1	B1	C1	D1	E1	F1	G1	H1	I1	J1	K1	L1	M1	N1	O1	P1	Q1	R1	S1

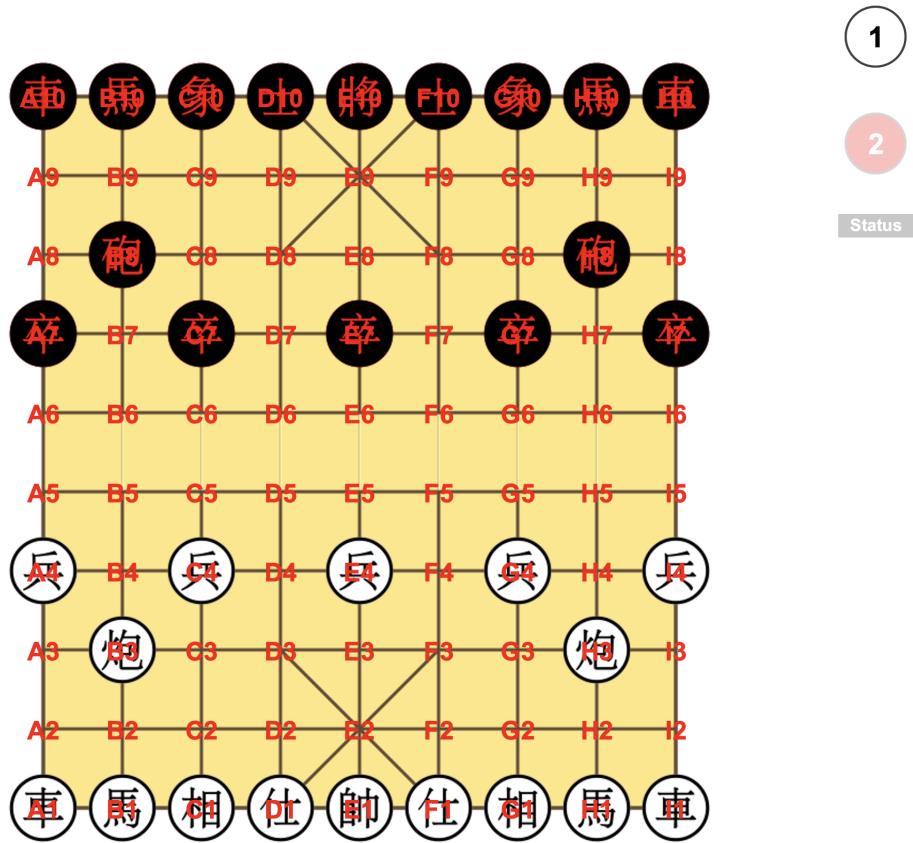
6 Outer-Open-Gomoku

Moves : placements.



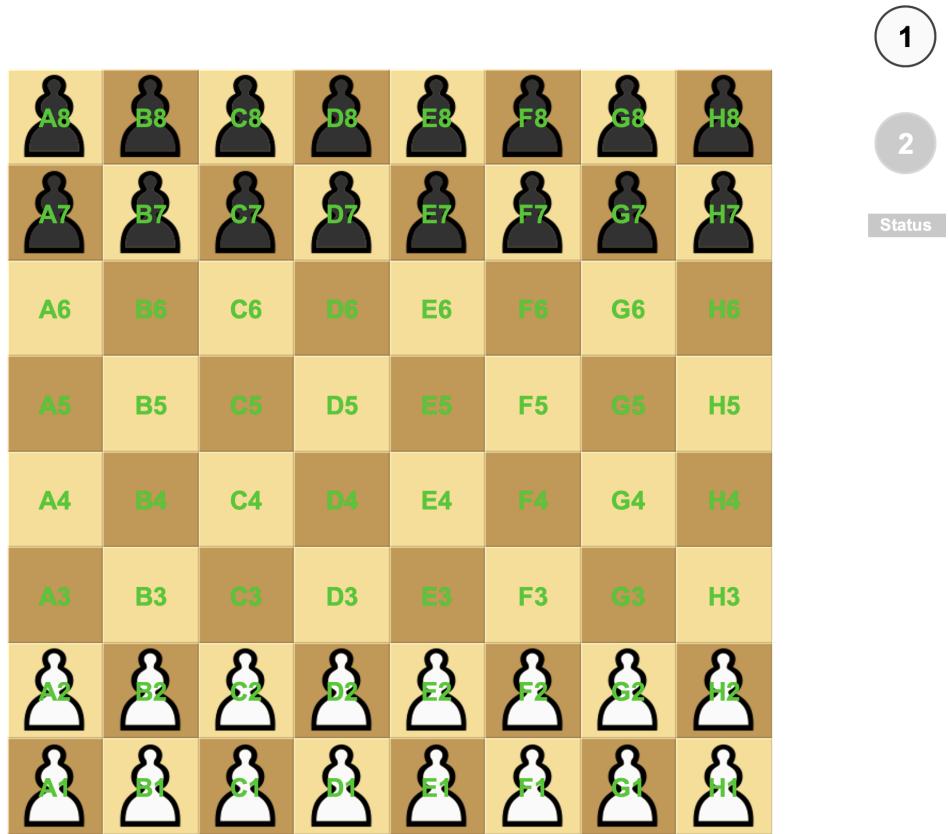
7 Chinese Chess (Xiangqi)

Moves : mouvements.



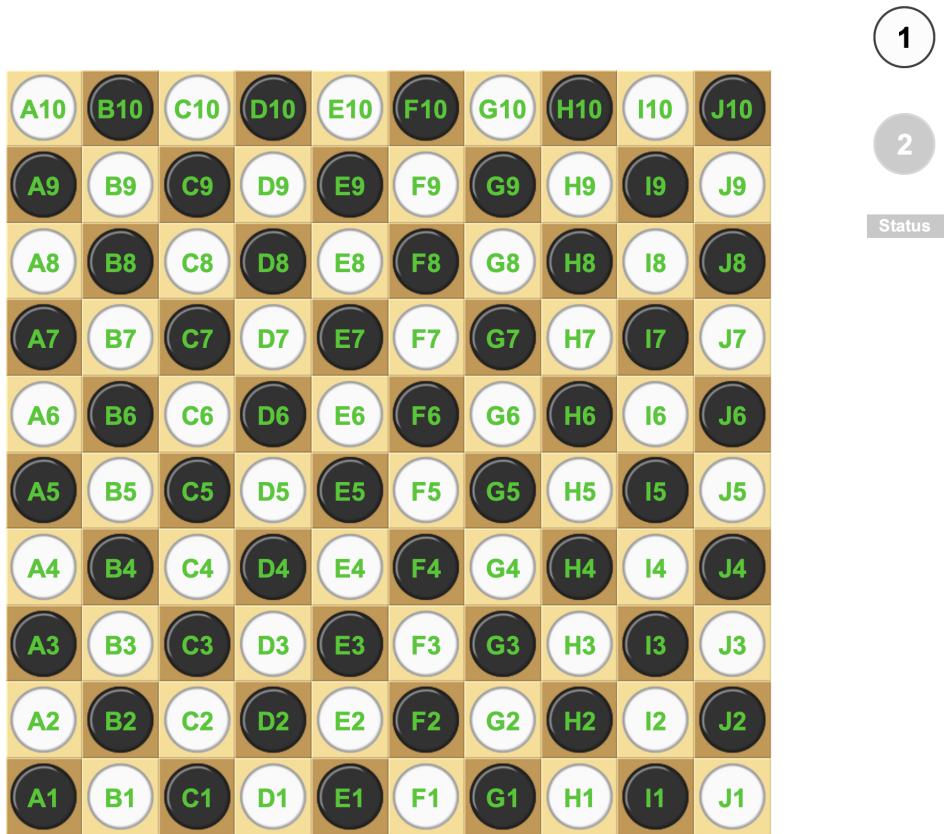
8 Breakthrough

Moves : mouvements.



9 Clobber

Moves : mouvements.



10 Amazons

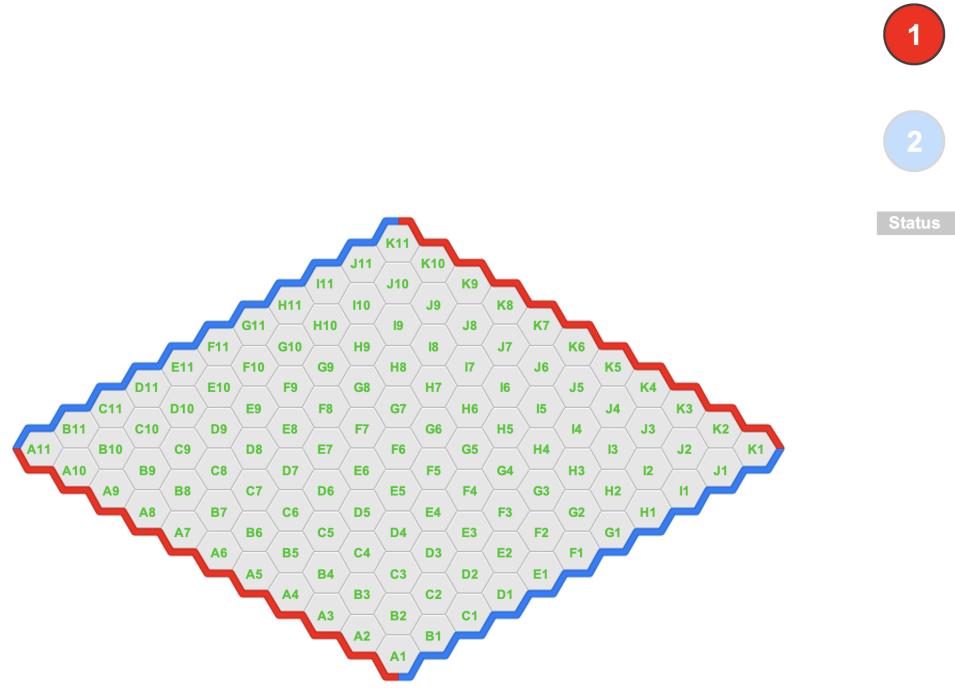
Moves : mouvements and placements.

A10	B10	C10	D10	E10	F10	G10	H10	I10	J10
A9	B9	C9	D9	E9	F9	G9	H9	I9	J9
A8	B8	C8	D8	E8	F8	G8	H8	I8	J8
A7	B7	C7	D7	E7	F7	G7	H7	I7	J7
A6	B6	C6	D6	E6	F6	G6	H6	I6	J6
A5	B5	C5	D5	E5	F5	G5	H5	I5	J5
A4	B4	C4	D4	E4	F4	G4	H4	I4	J4
A3	B3	C3	D3	E3	F3	G3	H3	I3	J3
A2	B2	C2	D2	E2	F2	G2	H2	I2	J2
A1	B1	C1	D1	E1	F1	G1	H1	I1	J1

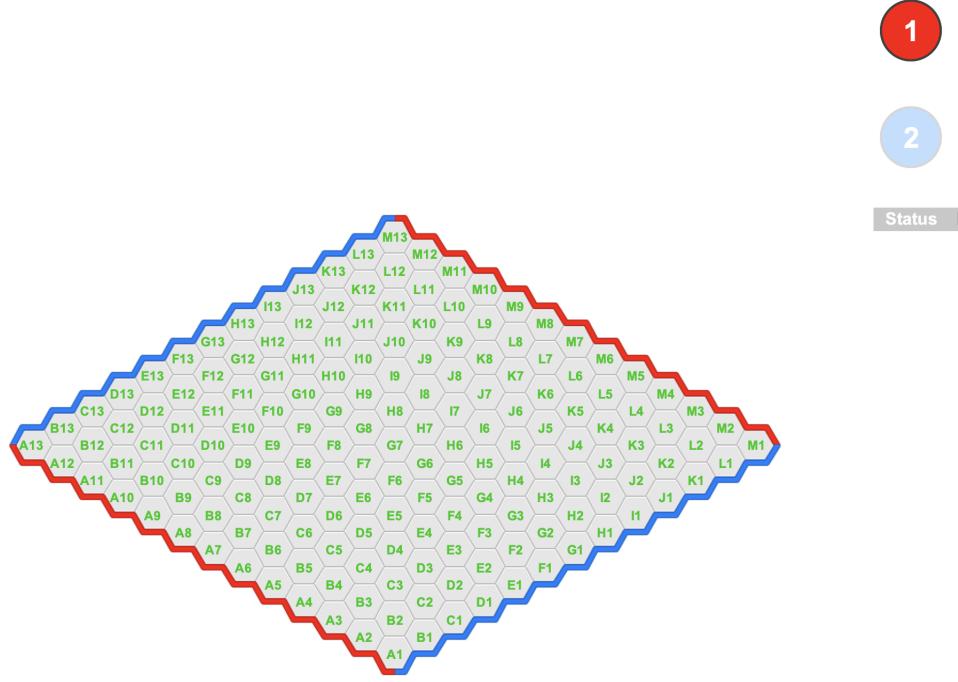
11 Hex

Moves : placements and the swap action, denoted by the keyword “swap”.

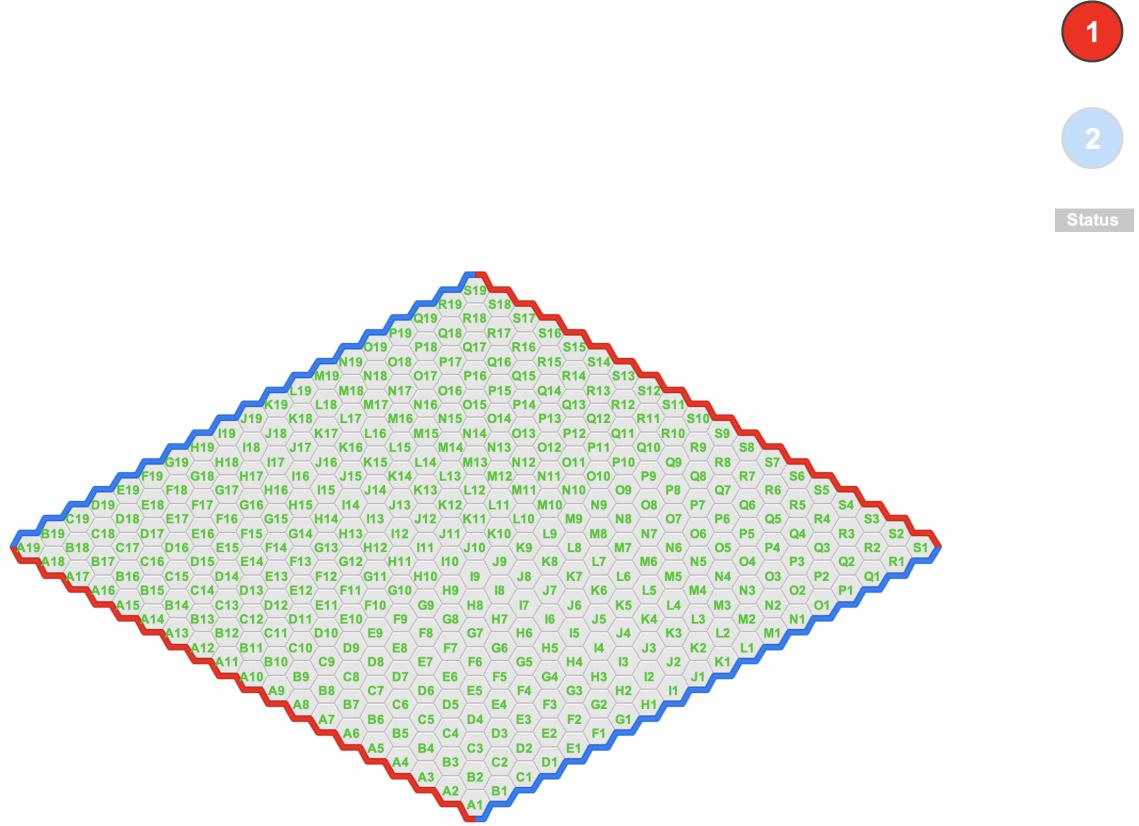
11.1 Hex 11x11



11.2 Hex 13x13



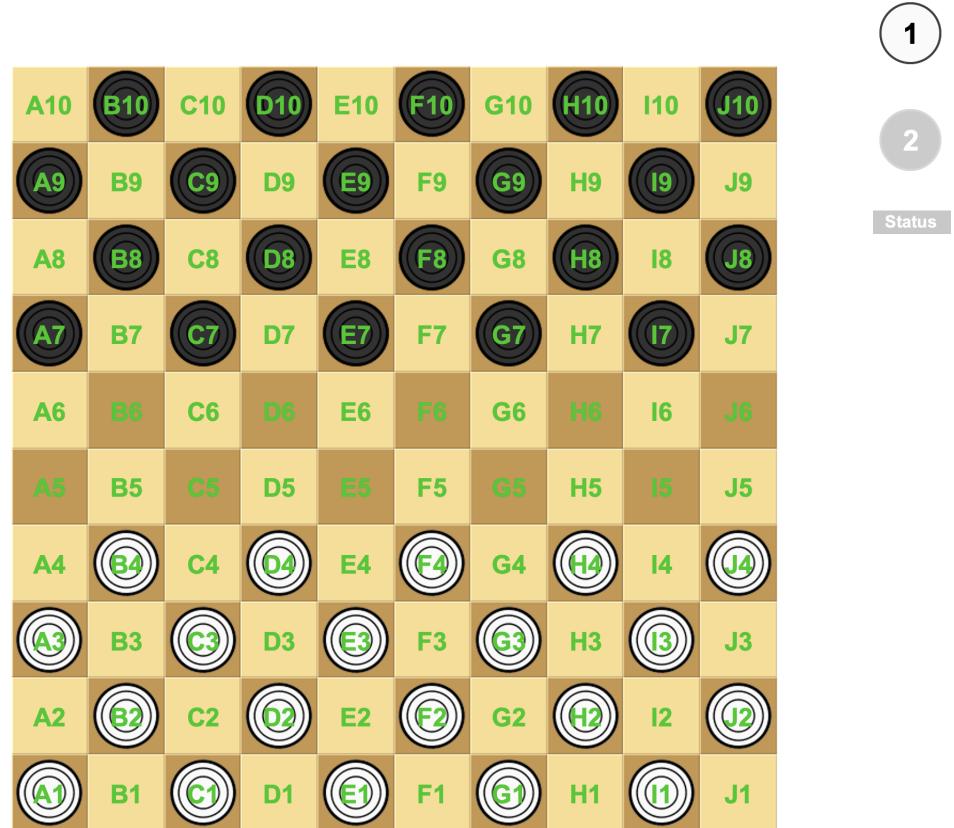
11.3 Hex 19x19



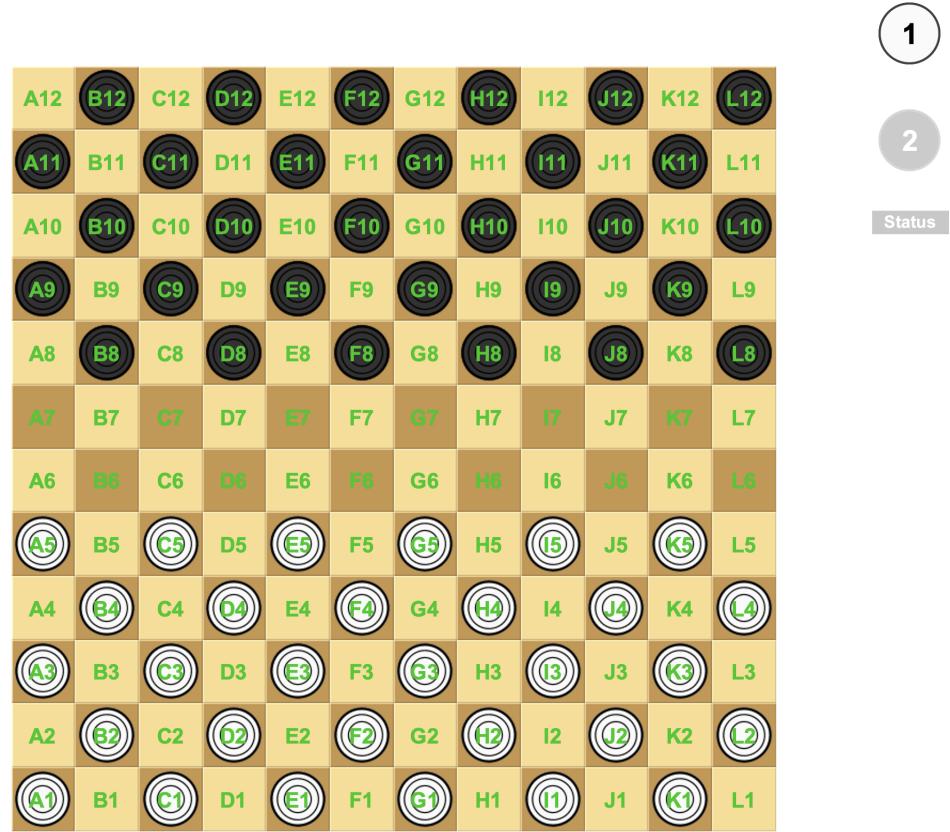
12 Draughts

Moves : movements.

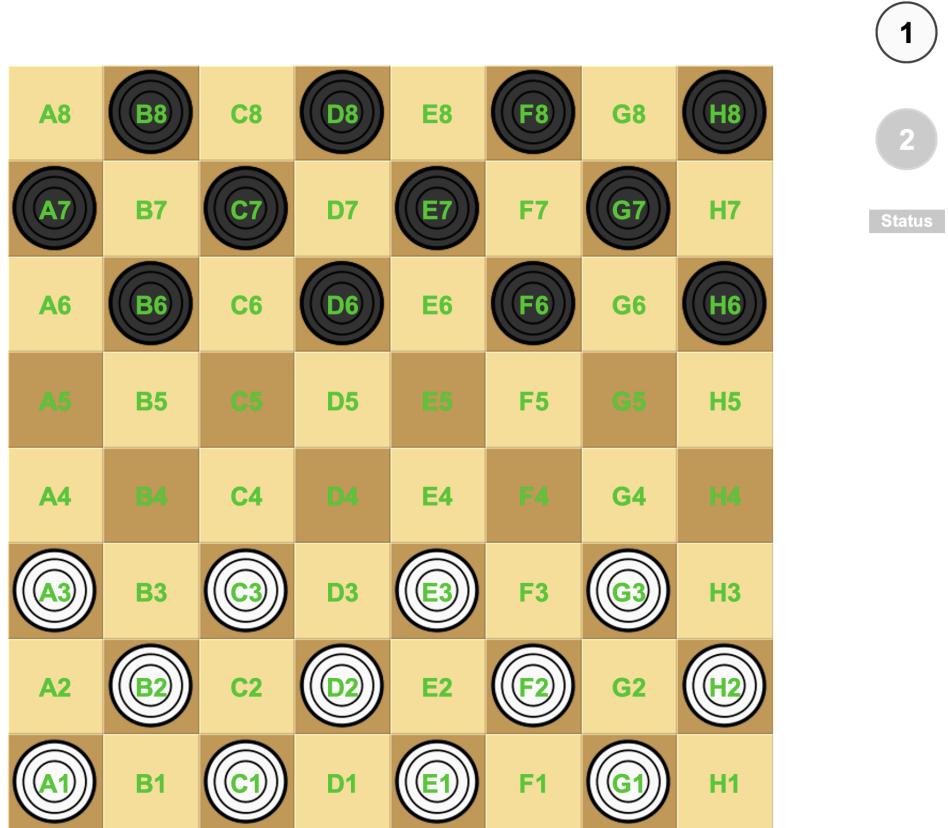
12.1 International Draughts



12.2 Canadian Draughts



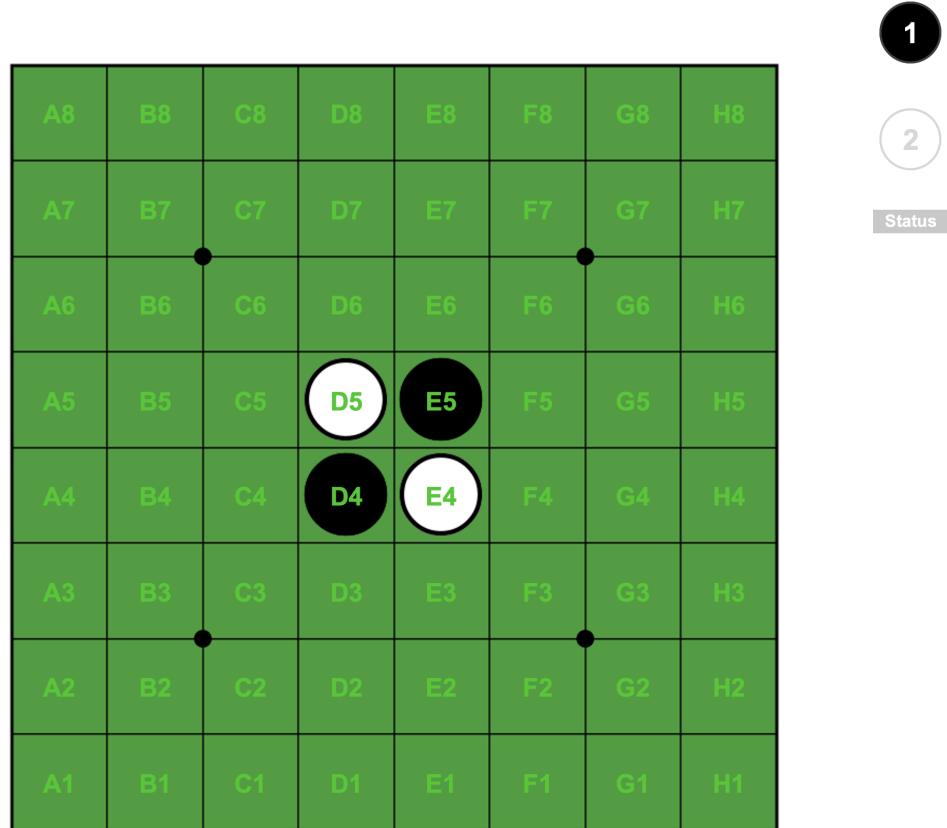
12.3 Brazilian Draughts



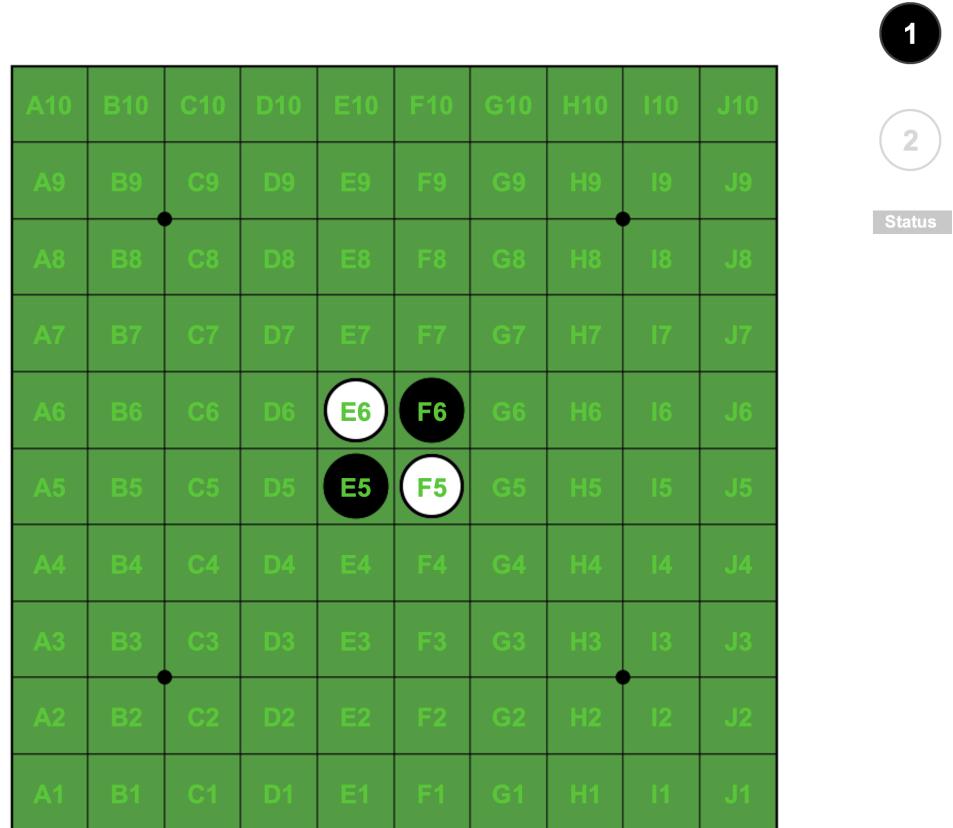
13 Othello (Reversi)

Moves : placements.

13.1 Othello 8x8



13.2 Othello 10x10



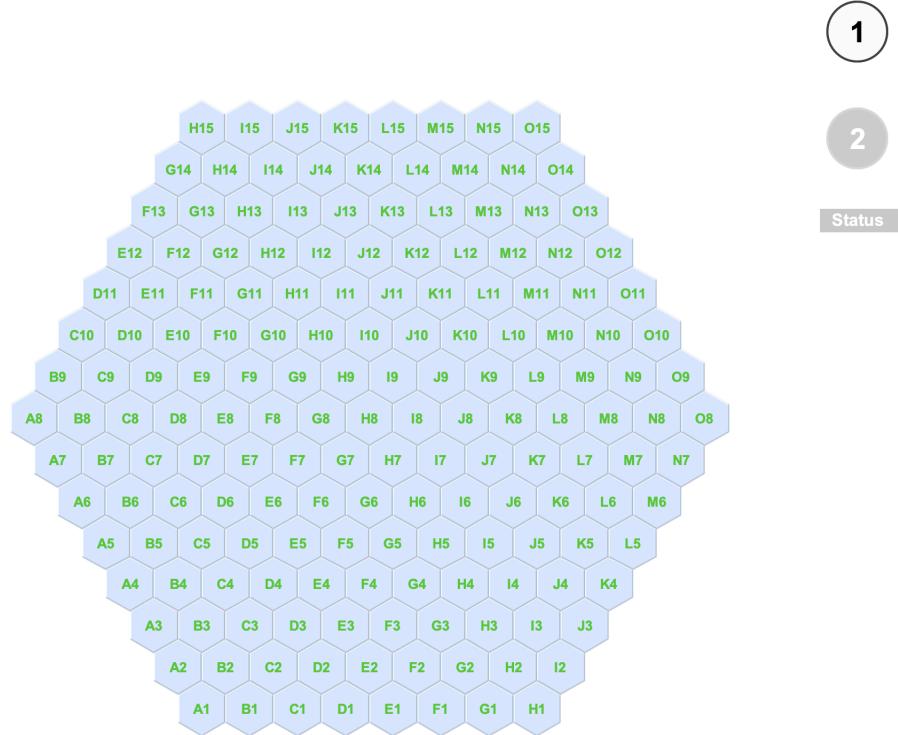
13.3 Othello 16x16

A16	B16	C16	D16	E16	F16	G16	H16	I16	J16	K16	L16	M16	N16	O16	P16
A15	B15	C15	D15	E15	F15	G15	H15	I15	J15	K15	L15	M15	N15	O15	P15
A14	B14	C14	D14	E14	F14	G14	H14	I14	J14	K14	L14	M14	N14	O14	P14
A13	B13	C13	D13	E13	F13	G13	H13	I13	J13	K13	L13	M13	N13	O13	P13
A12	B12	C12	D12	E12	F12	G12	H12	I12	J12	K12	L12	M12	N12	O12	P12
A11	B11	C11	D11	E11	F11	G11	H11	I11	J11	K11	L11	M11	N11	O11	P11
A10	B10	C10	D10	E10	F10	G10	H10	I10	J10	K10	L10	M10	N10	O10	P10
A9	B9	C9	D9	E9	F9	G9	H9	I9	J9	K9	L9	M9	N9	O9	P9
A8	B8	C8	D8	E8	F8	G8	H8	I8	J8	K8	L8	M8	N8	O8	P8
A7	B7	C7	D7	E7	F7	G7	H7	I7	J7	K7	L7	M7	N7	O7	P7
A6	B6	C6	D6	E6	F6	G6	H6	I6	J6	K6	L6	M6	N6	O6	P6
A5	B5	C5	D5	E5	F5	G5	H5	I5	J5	K5	L5	M5	N5	O5	P5
A4	B4	C4	D4	E4	F4	G4	H4	I4	J4	K4	L4	M4	N4	O4	P4
A3	B3	C3	D3	E3	F3	G3	H3	I3	J3	K3	L3	M3	N3	O3	P3
A2	B2	C2	D2	E2	F2	G2	H2	I2	J2	K2	L2	M2	N2	O2	P2
A1	B1	C1	D1	E1	F1	G1	H1	I1	J1	K1	L1	M1	N1	O1	P1

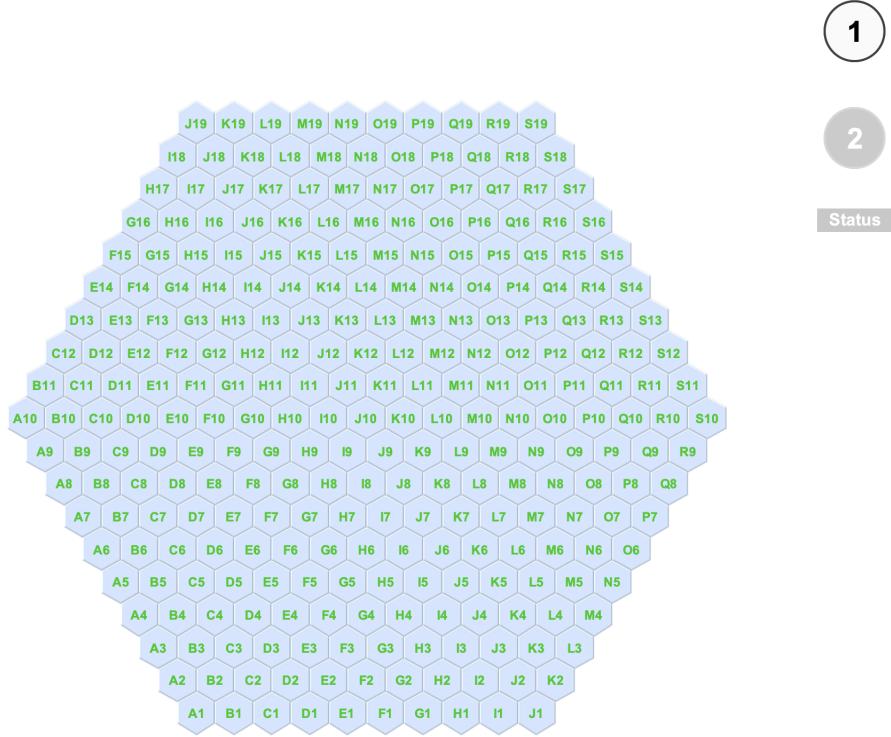
14 Havannah

Moves : placements and the swap action, denoted by the keyword “swap”.

14.1 Havannah 8



14.2 Havannah 10



15 Arimaa

Moves : placements, movements and “pass” (to indicate an early end of turn).

There is a notable difference between this game and Ludii. Regarding the placement phase, when a player places their pieces, they start by placing those with the lowest values (beginning with the rabbits) and then the others. This doesn’t change the rules of the game, but it simplifies the syntax of placement actions, since they now consist of only a position coordinate (for example, "A1" is the action of the first move for the first player, who will thus place their first rabbit).

In addition, there is also another difference with Ludii : pushing and pooling actions are unitary actions (instead of a sequence of actions). Thus, they are tuples of three or four coordinates, for instance A8-B8-B8-C8.

For the pushing actions : they are three coordinates. The first two coordinates represent the movement of your piece and the last coordinate is the new position of the opponent’s piece being pushed.

For the pulling actions : they are four coordinates. The first two coordinates represent the movement of your piece. The last two coordinates represent the movement the opponent’s piece being pulled.

1
2
Status

A8	B8	C8	D8	E8	F8	G8	H8
A7	B7	C7	D7	E7	F7	G7	H7
A6	B6	C6	D6	E6	F6	G6	H6
A5	B5	C5	D5	E5	F5	G5	H5
A4	B4	C4	D4	E4	F4	G4	H4
A3	B3	C3	D3	E3	F3	G3	H3
A2	B2	C2	D2	E2	F2	G2	H2
A1	B1	C1	D1	E1	F1	G1	H1

16 Shobu

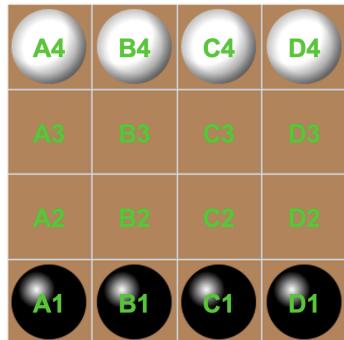
Moves : movements.



1

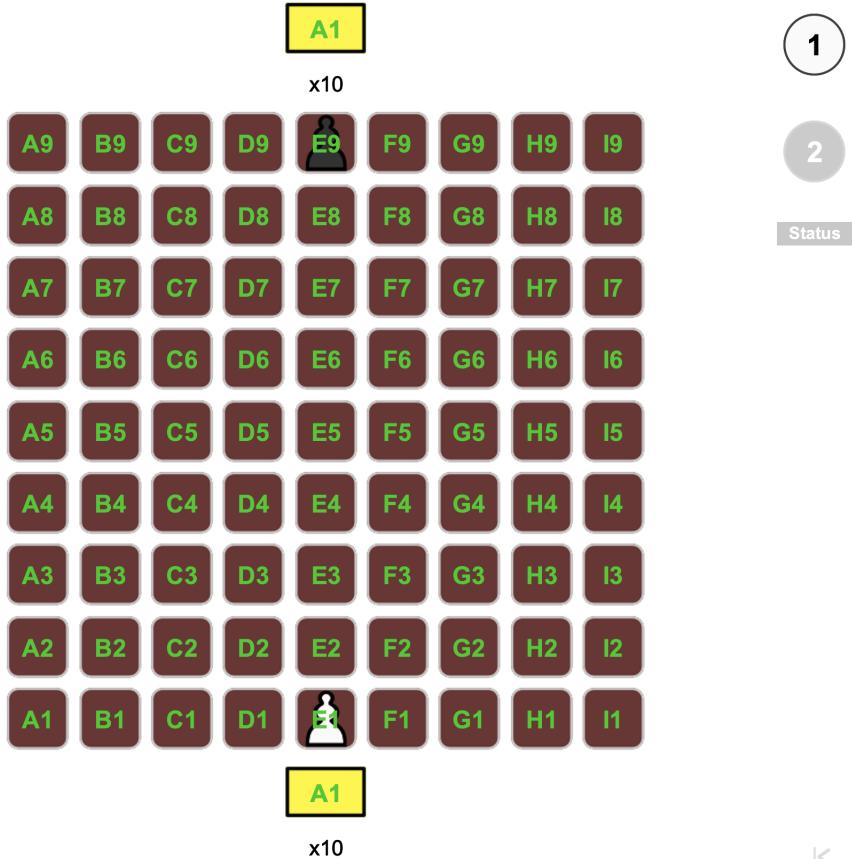
2

Status



17 Quoridor

Moves : placements and displacements.



Concerning the placements of walls, a move corresponds to 4 coordinates : “<coordinate1>-<coordinate2>-<coordinate3>-<coordinate3>”, for example A1-A2-B1-B2. The first two coordinates indicates that the wall is between these first two coordinates. The last two coordinates indicates that the wall is also between these last two coordinates. Thus, the move A1-A2-B1-B2 corresponds to the wall placement in Figure 1. To remove the potential redondancy (to obtain unicity of moves), the coordinates are ordered in the move : the two first are ordered, the two last are ordered and the first two are ordered with the last two coordinates). The letters are lexicography ordered and the number are ordered from largest to smallest. For instance : A2-A1-B2-B1 is correct but not : B1-B2-A1-A2 or A1-A2-B2-B1 or A2-A1-B1-B2 or B2-B1-A2-A1, etc.

Note : Arimaa is bugged in Ludii (in particular wall placements).

18 Backgammon

Moves : deplacements and “dices throws”.

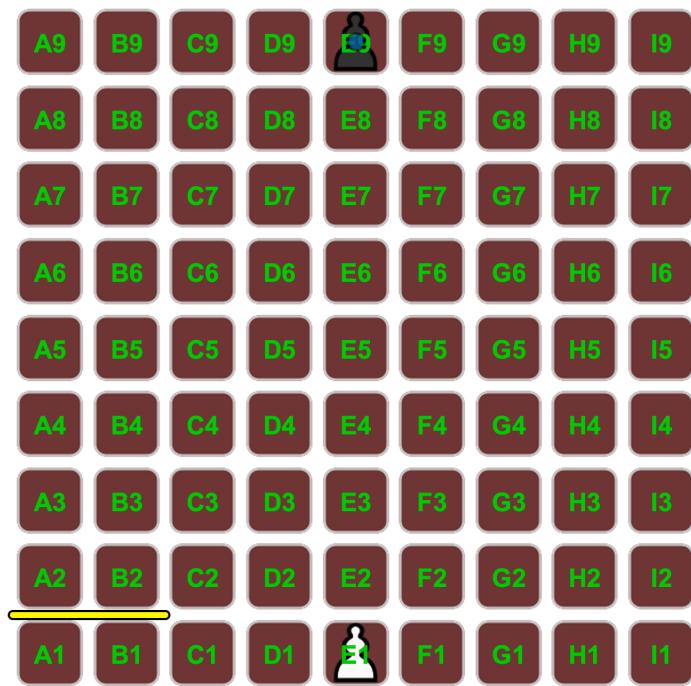
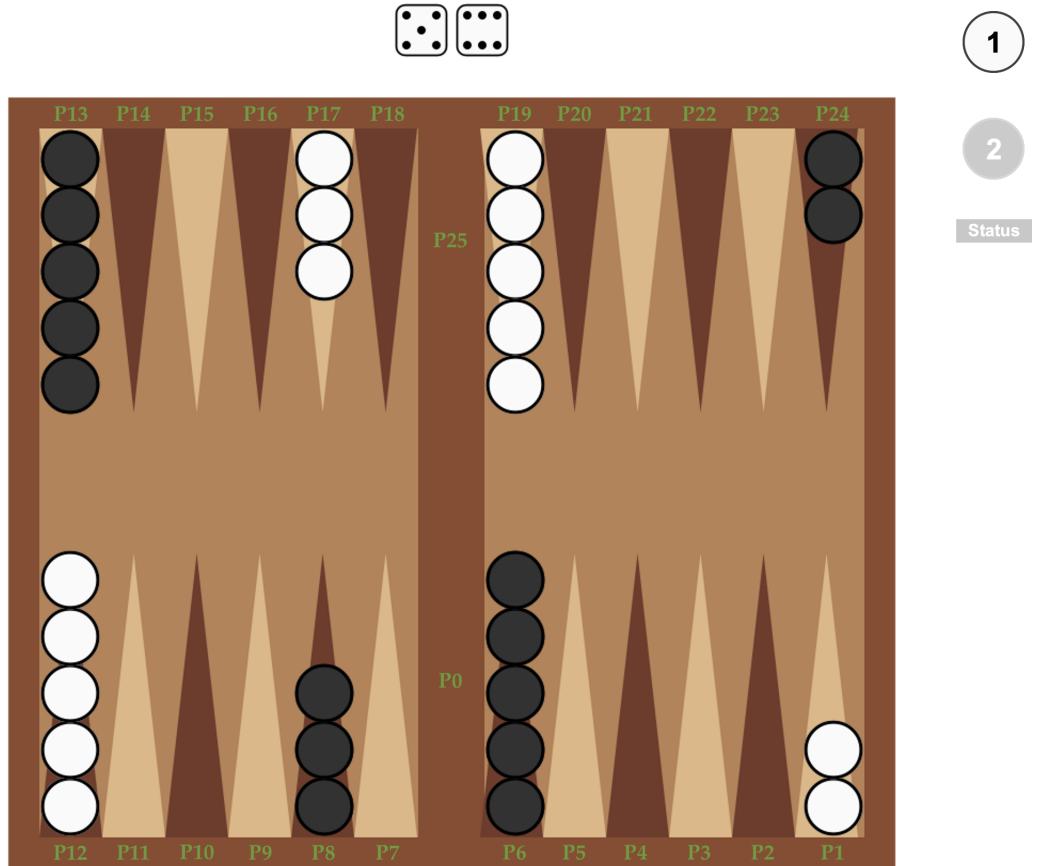


FIGURE 1 – Example of the wall placement corresponding to “A1-A2-B1-B2”.



Chance events (dice throws) are communicated by the referee using the format "<dice_value1>-<dice_value2>", for example "5-6".

If no movement is possible, the player's action must be "pass".

The standard action consists of moving two pieces. Its format is "<position1>-<dice1>-<position2>-<dice2>". For example, if the dice values at the start of the game are 5 and 6, one legal action is P1-6-P12-5 (see the backgammon figure). This action moves a piece from position P1 by 6 points (using die 6), then a piece from position P12 by 5 points (using die 5).

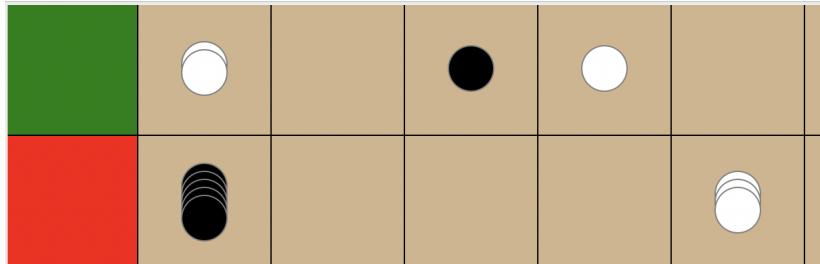
If only a single piece can be moved, the format is simply "<position1>-<dice1>". For example : "P19-6".

In the case of doubles, the action format is one of the following : "<dice>-<position1>-<position2>-<position3>-<position4>" or "<dice>-<position1>-<position2>-<position3>" or "<dice>-<position1>-<position2>" or "<dice>-<position1>". For example, "2-P1-P12-P17-P19".

The bar position for the first player is P0. The bar position for the second player is P25.

Example of a game start :

1. chance : 3-1
2. player 0 : P19-3-P19-1
3. chance : 3-2
4. player 1 : P24-2-P6-3
5. chance : 2-2
6. player 0 : 2-P0-P2-P19-P19



This corresponds to the following figure :

19 Kingdomino

In the game Kingdomino, you must first distinguish the actions of the “chance player” (random events) from those of the other players. There are two types of chance actions : king draw and tile draw.

The textual format of a king draw is simply the number of the player of the king : “ n ” with $n \in \{0, 1\}$. For example, the value 0 means that the first player’s king is drawn, and 1 means the second player’s king is drawn. Recall that the king-drawing order determines the play order for the first round.

The textual format of a tile draw is simply the textual format of that tile : “tile”. More precisely, the textual format of a tile is a triplet joined by hyphens : “crown-landscape1-landscape2” where “crown” is the number of crowns on the first square of the tile, “landscape1” is the terrain type of the first square of the tile, and “landscape2” is the terrain type of the second square. The terrains are : ‘field’, ‘forest’, ‘lake’, ‘meadow’, ‘swamp’, ‘mine’. For example, “0-field-field” is the crownless tile with two fields, and “2-meadow-lake” is the tile with two crowns on the meadow square and the other square being lake.

There are then two types of actions for human/AI players : choosing a tile and placing the chosen tile.

The textual format of choosing a tile is the digit “ o ” ($o \in \{0, 1, 2, 3\}$) corresponding to the rank of the tile among the available ones (0 for the lowest-value tile among those available and 3 for the highest-value one ; recall that a tile’s value is the number printed on its back ; see also the following figure for the correspondance).



To have a fixed coordinate system, we work on a 13×13 board. Coordinates therefore range from A1 to M13. Note that tiles must always be placed within a 7×7 square. The castle is located at the center of this board (position G7).

The textual format of placing a tile is “tile-coordinate1-coordinate2”, where coordinate1 is the coordinate of the tile’s square containing the crowns. For example, with “2-meadow-lake-G8-G9” : G8 is the position of the meadow square, which has 2 crowns and G9 the position of the lake (with 0 crown).

If a player cannot place their tile, they instead perform the action “pass”.

Example of a game start :

1. chance : 0-meadow-meadow
2. chance : 2-mine-swamp
3. chance : 1-forest-field
4. chance : 1-forest-meadow
5. chance : 0
6. player 0 : 1
7. chance : 1
8. player 1 : 3
9. chance : 1
10. player 1 : 0
11. chance : 0
12. player 0 : 2
13. chance : 2-mine-field
14. chance : 1-meadow-lake
15. chance : 1-forest-field
16. chance : 1-field-forest
17. player 1 : 0-meadow-meadow-G14-G15
18. player 1 : 3
19. player 0 : 1-forest-field-I15-H15
20. player 0 : 0
21. player 0 : 1-forest-meadow-J14-I14
22. player 0 : 1
23. player 1 : 2-mine-swamp-H15-H16
24. player 1 : 2
25. chance : 0-field-lake

This corresponds to the following figure :



20 Azul

In the game Azul, you must first distinguish the actions of the “chance player” (random events) from those of the other players. There is one type of chance action : drawing a tile. The textual format of a tile draw is “color”, where color is one of the following : “yellow”, “blue”, “black”, “red”, “white”.

The “non-chance” player actions are of two types : collecting a group of tiles and choosing a line on which to place them.

The textual format for collecting a group of tiles is “ n -color” where $n \in \{0, 1, 2, 3, 4, "center"\}$ is the number of the factory (tile zone) or the center, and color is the chosen tiles color.

The textual format for choosing the line on which to place the collected tiles is “ n ” where $n \in \{1, 2, 3, 4, 5, "floor"\}$, indicating the chosen line (the number corresponds to the maximum number of tiles that can be placed on that line, except for “floor”, which is the last line).

Example of a game start :

1. chance : yellow

2. chance : blue
3. chance : blue
4. chance : yellow
5. chance : black
6. chance : yellow
7. chance : black
8. chance : red
9. chance : black
10. chance : yellow
11. chance : white
12. chance : white
13. chance : black
14. chance : red
15. chance : black
16. chance : yellow
17. chance : black
18. chance : black
19. chance : black
20. chance : white
21. player 0 : 3-yellow
22. player 0 : floor
23. player 1 : 4-white
24. player 1 : 4
25. player 0 : 0-yellow
26. player 0 : 2
27. player 1 : 1-black
28. player 1 : 5

This corresponds to the following figure :

