

Connect 4 API

Documentation

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Rest API

Input: Get request

With current game standings as string (rolled out Connect 4 board)

-> example: "BXXXXXBXXXXBXXXXBXXXXAAAXXXXXXXXXXXXXXXXXX"

Output: 'A' = Player A has won

'B' = Player B has won

'X' = No winner, game continues

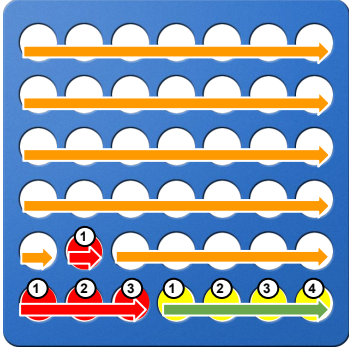
Special: backend algorithm works for all sizes of the board (ROW_COUNT x COLUMN_COUNT)

and all desired WINNING_CHAINs.

(Variables can be adjusted in code)

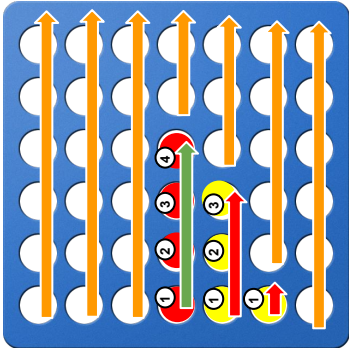
Possibility for improvement: these variables could be sent with a POST request

Working principle of method `is_winner()`



Check 4 in a row:

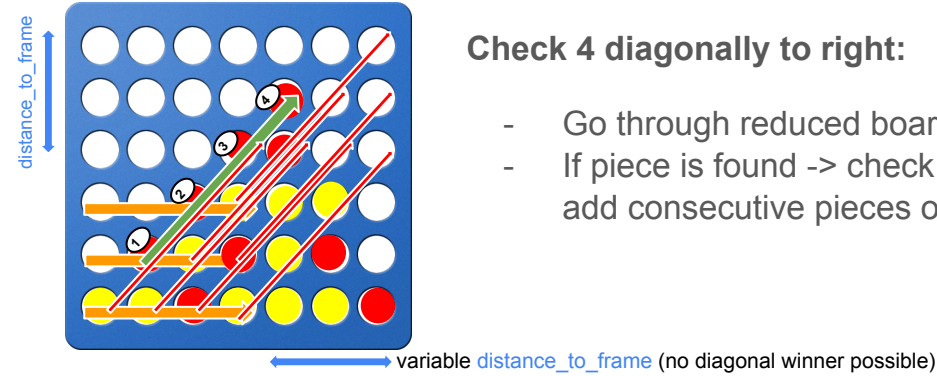
- Go through board
- Add consecutive pieces of one player (variable `chain_count`) until `WINNING_CHAIN` is found



Check 4 in a column:

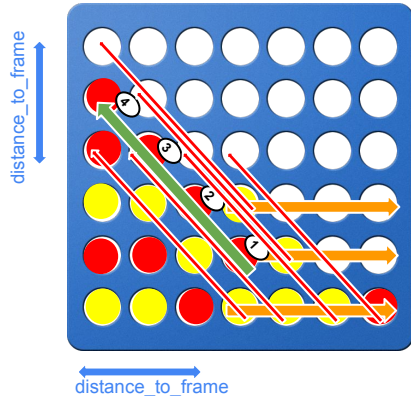
- Go through board
- Add consecutive pieces of one player (variable `chain_count`) until `WINNING_CHAIN` is found

Working principle of method `is_winner()`



Check 4 diagonally to right:

- Go through reduced board
- If piece is found -> check `WINNING_CHAIN` diagonally to right and add consecutive pieces of one player (variable `chain_count`)



Check 4 diagonally to left:

- Go through reduced board
- If piece is found -> check `WINNING_CHAIN` diagonally to left and add consecutive pieces of one player (variable `chain_count`)

multiple_winner error

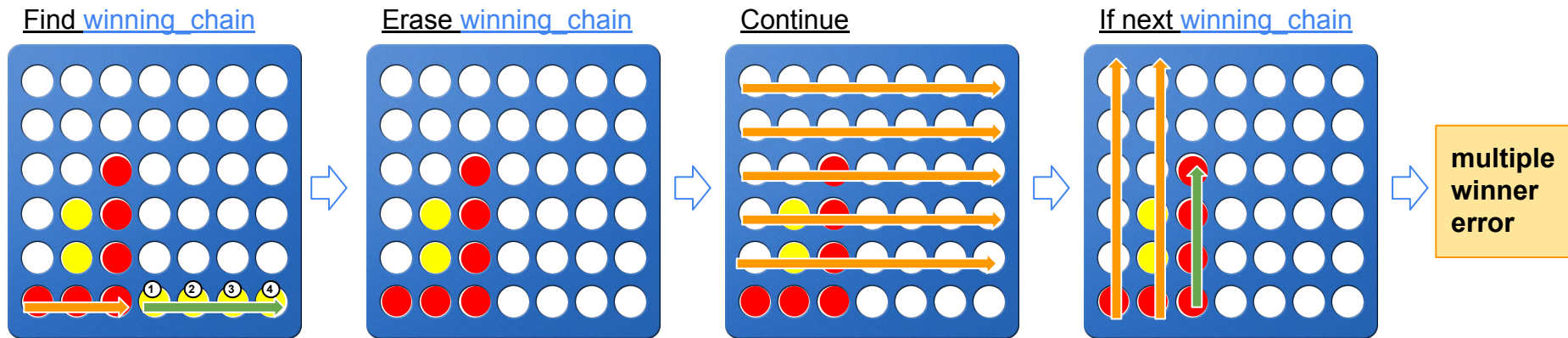
Requirements:

You should check that the string provided as input is a board position that can be encountered in a real game of Connect Four:

- There is *at most* one winner (no scenarios where both teams won should be considered)
- Winning chains must share at least one piece. This means that there cannot be two winning chains of 4 pieces that do not share any piece since this is not possible in a real game of "Connect Four"

Implementation:

If a `winning_chain` -> erase the `winning_chain` in the board and continue `is_winner()`: if another `winning_chain` is found -> `multiple_winner` error

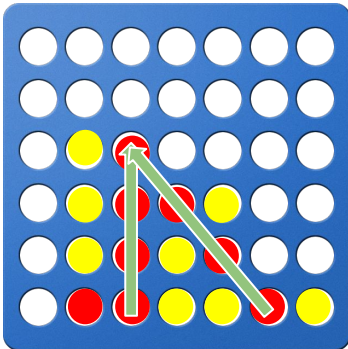


multiple_winner error

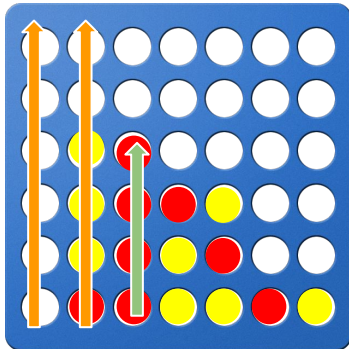
Case: winning_chains share 1 piece

-> no multiple_winner error

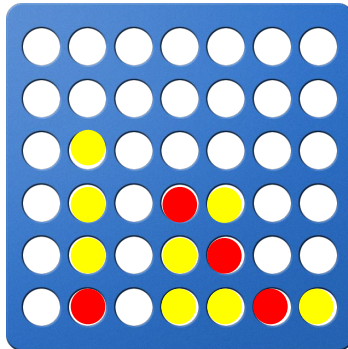
winning_chains



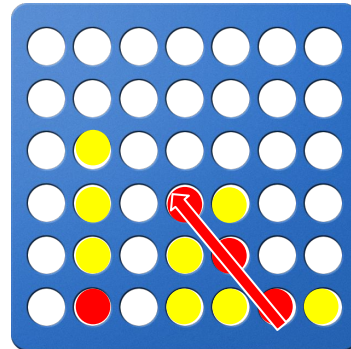
Find winning_chain



Erase winning_chain



Continue



No
multiple
winner
error