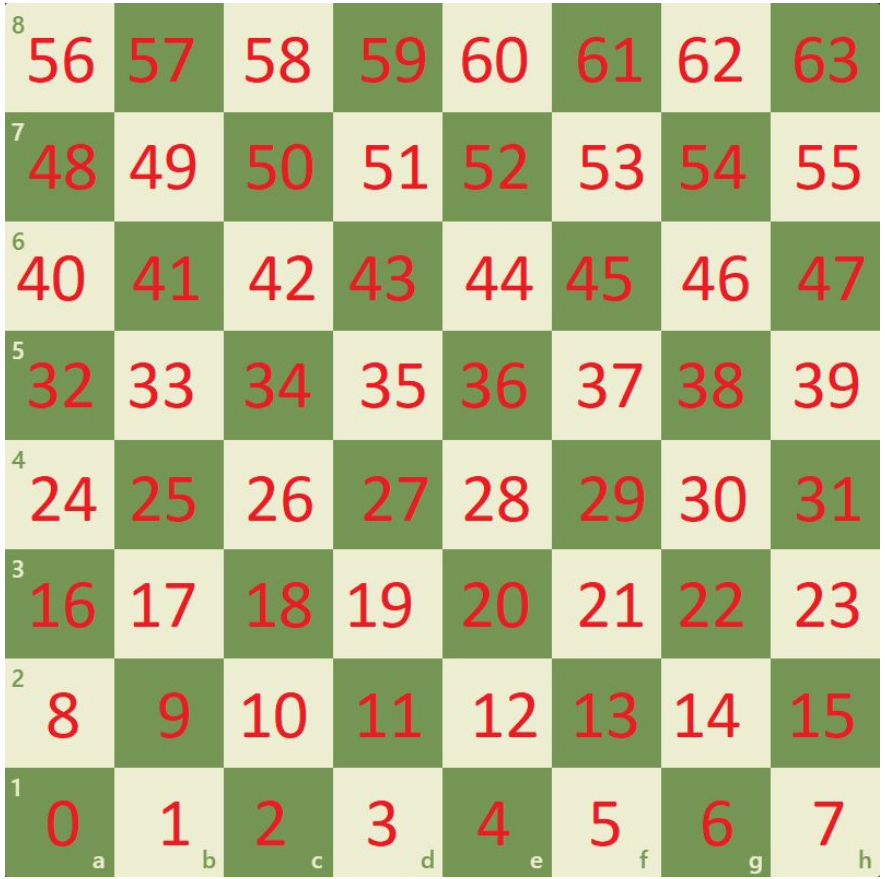

ChessWebsite
THE ALTERNATIVE CHESS EXPERIENCE

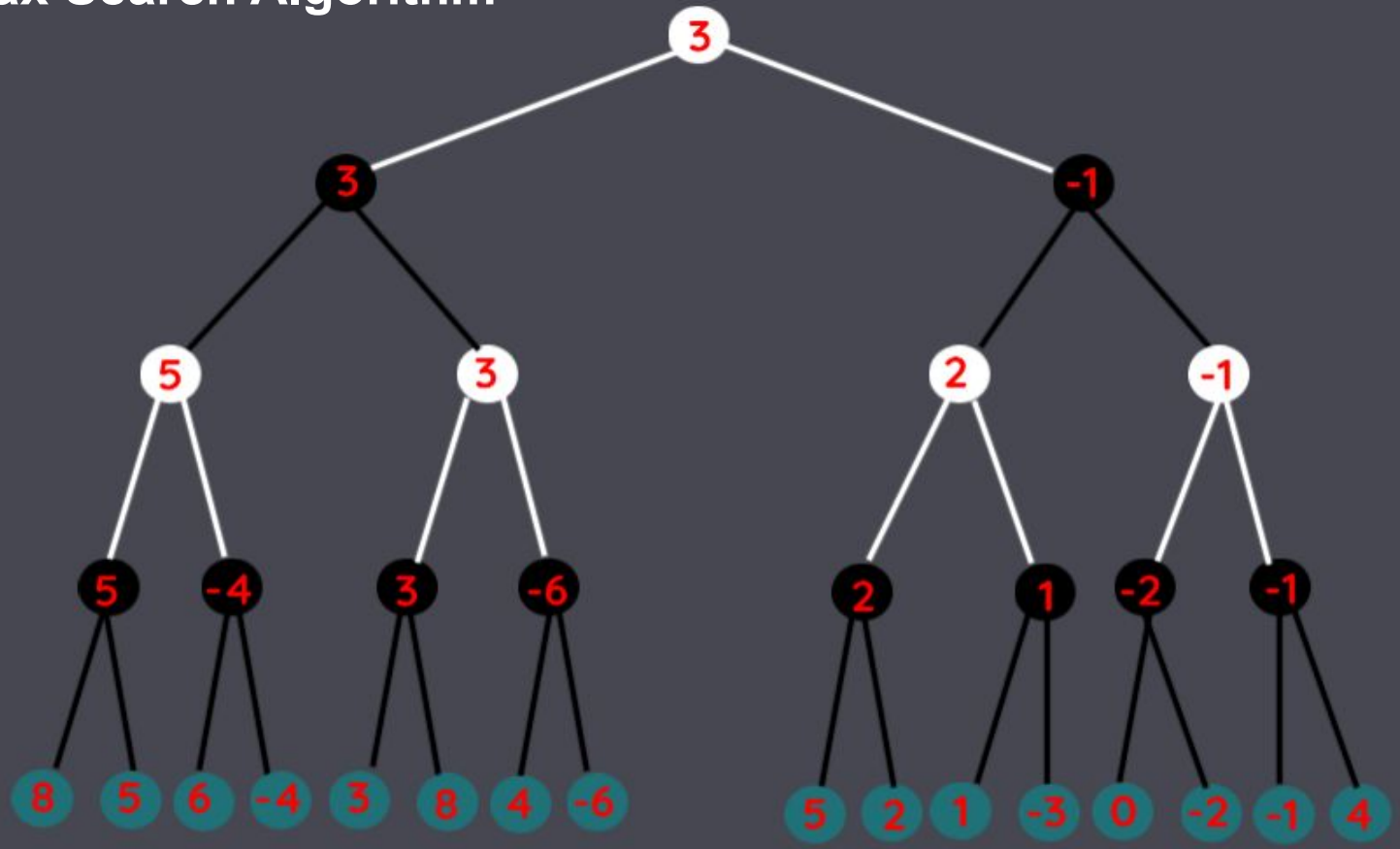
Bitboards

- Unsigned long longs
- Bit Operations increase efficiency versus string comparisons
- Need Several Bitboards i.e. All Pieces, White Pieces, Black Pawns etc.

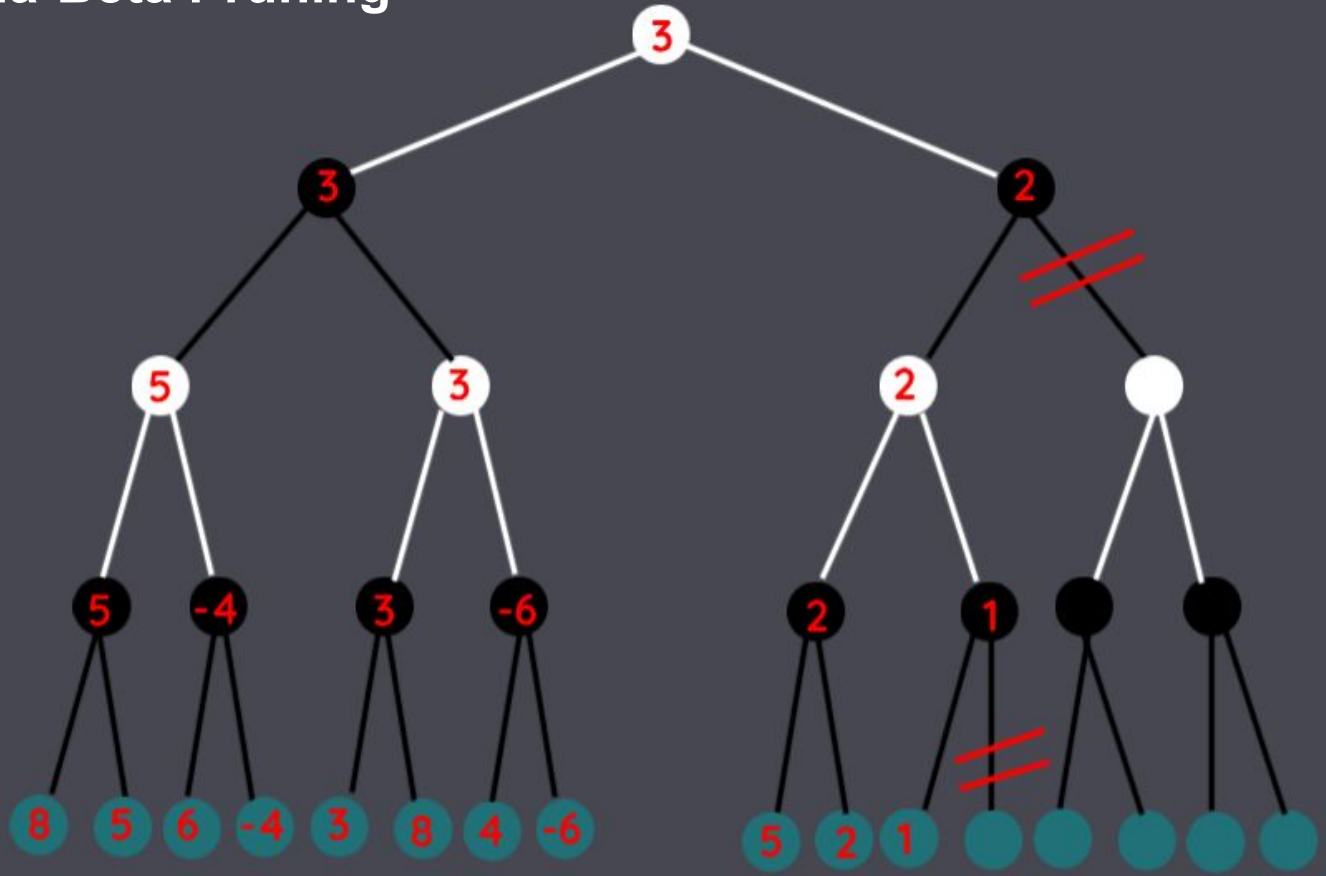
Ki_mvs = KLT[square] ^ (pieces[color] & KLT[square]);



Minimax Search Algorithm



With Alpha-Beta Pruning

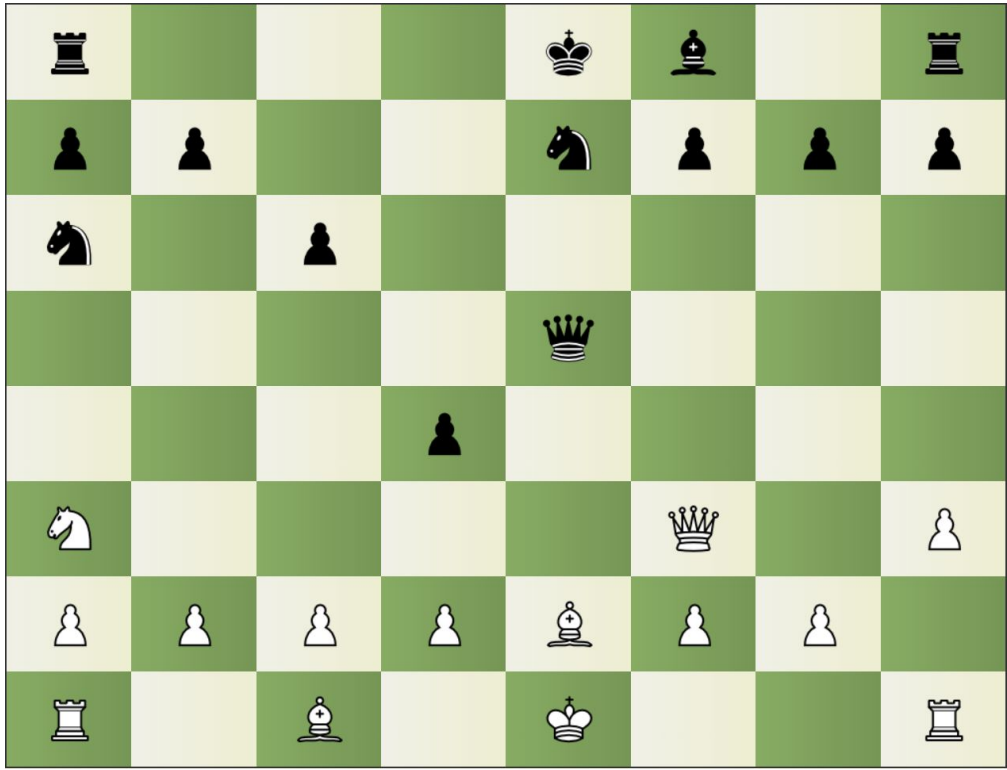


Evaluation

Engine scores each position based on certain characteristics:

- Material Imbalance
- King Safety
- Piece Development

This score is used in the Minimax search algorithm to find the best position.



WebAssembly

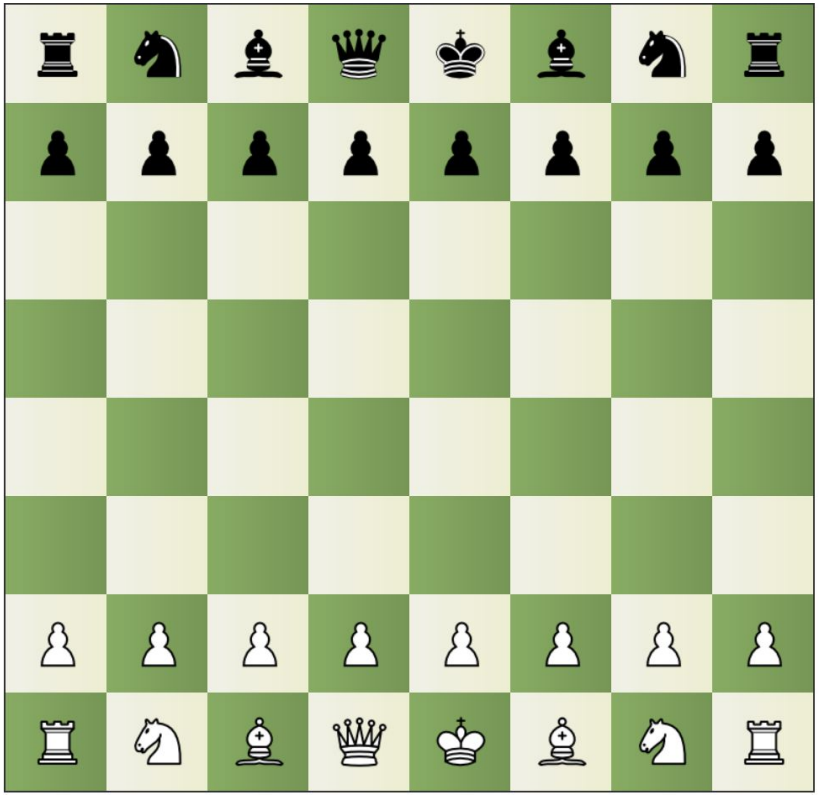
Works as a C++ compiler.

Instead of an executable it generates a .js and .wasm file.

Can then use any functions or classes you binded by using the .js file generated.

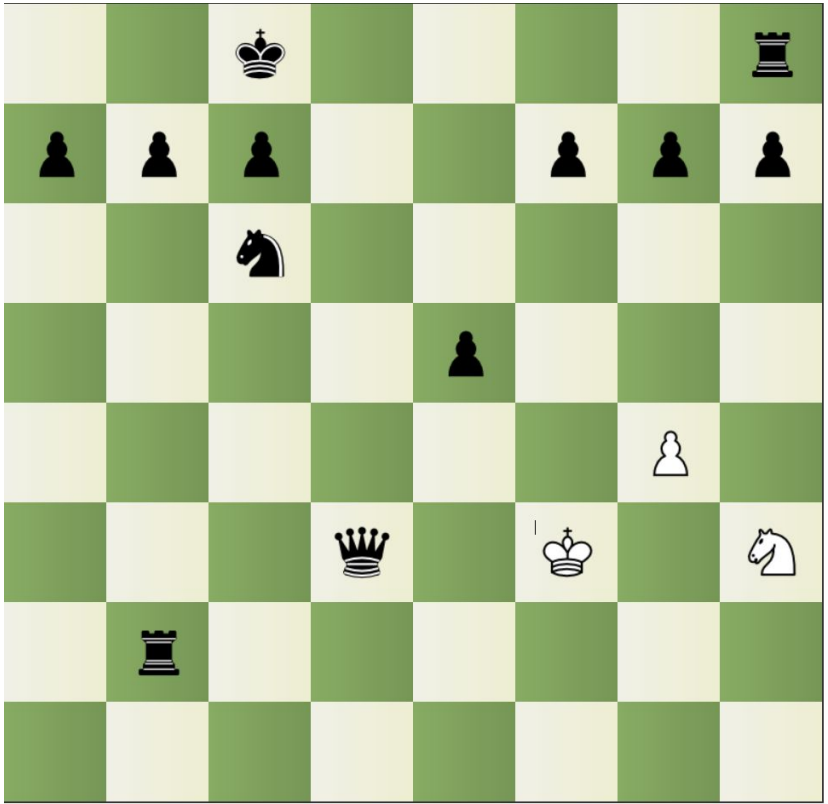
Fenstrings

rnbqkbnr/pppppppp/8/8/8/8/PPPPPPPP/RNBQKBNR w KQkq - 0 1



Fenstrings 2

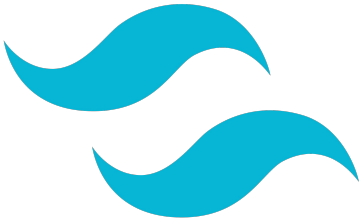
2k4r/ppp2ppp/2n5/4p3/6P1/3q1K1N/1r6/8 w - - 0 23



The Web Application

- Svelte (front-end framework used)
- TailwindCSS (majority of styling)
- HTML, CSS, JavaScript (used on chess board)

Take a look: http://localhost:5173



Citations for Images Used in Presentation

https://github.com/sveltejs/branding

https://en.wikipedia.org/wiki/WebAssembly

https://tailwindcss.com/

https://www.freepnglogos.com/images/html5-logo-31816.html