

# chessPieceLogic

Created by: peterdownie.com

Software Version: 2.41e

Greater Code Name: Atomic

Lesser Code Name: Proton

Service Version: 1.04

## Purpose

\* Chess Piece logic calculates legal moves or just makes them from a fen or arrays

## lowerText

## technicalSpecifications

To use this webservice you will need to call one of two functions. `startingPieces` Or `setPieceArray` Basically they create a list of pieces with positions. When you want to save this data to your database (not provided in this webservice) you call `getPieceArray`. `return[1]` is white and `return[2]` is black in feed. You can check to make sure that a move is legal before you commit it with `checkForLegalMove` and if you want to see all legal possible moves you can view `netmoves`. To change data 1 at a time you can use `makeAMove` and if you want to change multiple use `multiMove`.

## Main Methods

`startNewGame`

`generate_fen`

`set_fen`

`__construct`

`getPieceArray`

`setPieceArray`

`makeAMove`

`multiMove`

`netMoves`

descriptionOf\_pawn  
descriptionOf\_knight  
descriptionOf\_bishop  
descriptionOf\_rook  
descriptionOf\_queen  
descriptionOf\_king  
descriptionOf\_multiPiece  
descriptionOf\_all\_moves  
checkForLegalMove  
descriptionOf\_calculateCastleMoves  
descriptionOf\_getLastEnemyMove  
descriptionOf\_getLastMove  
descriptionOf\_noMoves\_STALEMATE\_OR\_CHECKMATE\_Detect

## Method Details

### startNewGame

\* This is the fen when the game starts  
\* This replaces the old version

### generate\_fen

Gets the current fen

### set\_fen

*Parameter #0 [ <required> \$fen ]*

Set a fen!

### \_\_construct

Check to see if you can connect to webservice. Also returns the class name for smarter connection. You do not really need to call this, makes connection easier.

### getPieceArray

get the array white and then the array black in 1 and 2 in feed  
This is just here for legacy reasons, you should really just return the FEN

### setPieceArray

*Parameter #0 [ <required> array \$white ]*

*Parameter #1 [ <required> array \$black ]*

*Parameter #2 [ <optional> \$turn = 1 ]*

*Parameter #3 [ <optional> \$castlingAvialabilty = " ]*

*Parameter #4 [ <optional> \$enpassant\_move = " ]*

*Parameter #5 [ <optional> \$halfMoveClock = " ]*

*Parameter #6 [ <optional> \$fullMoveClock = " ]*

sets the pieces of white and black. You could also use startingPieces instead if the game has not started.

You may now pass null and it will leave the pieces as they are for that color. If you leave both null you will get a warning.

Turn is either 1 or 2

Castling availability must be KQkq(any combination in order) or - It now be blank for neither

## **makeAMove**

*Parameter #0 [ <required> \$color ]*

*Parameter #1 [ <required> \$move ]*

*Parameter #2 [ <optional> \$real = true ]*

MakeAMove takes an input and makes a move regardless if the move is legal or not. Used to return piece value. Now returns array of data."

. ". See tech.

\* Update! Returned to using 1 or 2

\* Setting real to false disables this function. This is used to find moves that are illegal, which would otherwise write the moves as made!

## **multiMove**

*Parameter #0 [ <required> \$color ]*

*Parameter #1 [ <required> \$moves\_csv ]*

MultiMove takes a move csv and calls makeAMove with the values. More Info in Tech. Returns an output see tech specs.

## **netMoves**

*Parameter #0 [ <required> \$color ]*

*Parameter #1 [ <required> \$csvMoves ]*

netMoves calculates all legal moves and returns an array of moves. Returns in feed a2-a3,a2-a4,a7-a8=Q,e1-f1. Gets rid of illegal moves when the king is in check and cannot castle as well as enabling enpassante.

The csv Moves is for enpassante and such, it does not calculate from there as this uses addition computer resources.

## **descriptionOf\_pawn**

## **descriptionOf\_knight**

## **descriptionOf\_bishop**

## **descriptionOf\_rook**

## **descriptionOf\_queen**

## **descriptionOf\_king**

## **descriptionOf\_multiPiece**

## **descriptionOf\_all\_moves**

## **checkForLegalMove**

*Parameter #0 [ <required> \$color ]*

*Parameter #1 [ <required> \$move ]*

*Parameter #2 [ <required> \$csvMoves ]*

Takes a move and makes sure that it is legal, does not check all of the other moves to save processing power

checkForLegalMove takes a move in the format square1-square2, ie a2-a3... The net moves takes a value from netMoves in an array. If the value is in the array than the move is indeed legal. This function returns 1 of 3 values, the first is LEGAL\_MOVE and the second is ILLEGAL\_MOVE. IF there are no moves than CHECKMATE or STALEMATE is given and the game is over

## **descriptionOf\_calculateCastleMoves**

**descriptionOf\_getLastEnemyMove**

**descriptionOf\_getLastMove**

**descriptionOf\_noMoves\_STALEMATE\_OR\_CHECKMATE\_Detect**

## **Method Technical Specifications**

# startNewGame

This replaces the old starting pieces, has less complexity and returns the value of set FEN.

# generate\_fen

No technical specifications found

# set\_fen

No technical specifications found

# \_\_construct

No technical specifications found

# getPieceArray

Possible output values

CANNOT\_RETURN\_EMPTY\_BLACK\_AND\_WHITE (MINOR): Black and white pieces were not set. You should call startingPieces or setPieceArray.

OUTPUTTING\_FEED(NOMINAL): feed will return [1] for white and [2] for black.

# setPieceArray

Possible outputsPOINTLESS\_CALL(MINOR): This will change not a thing.

PIECES\_SET\_SUCCESSFULLYNOMINAL: pieces modified successfully.

# makeAMove

Color Possible Input Values

1: The color is white

2: The color is black

white: Not case sensitive, the color is white!

black: Not case sensitive. The color is black!

Move Possible inputs

should be of the format a2-a3, rank(small case) file then dash than the rank and file to without spaces. If you reach a promotion square than it must have the format equals and than the upper case piece. Not square is variable and not static like the examples. Castling will be explained below promotion

Possible Promote Pieces

e7-e8=N: Promote to kNight. Notice this is not K which is King!

a2-a1=B: Promote to Bishop

h2-h1=R: Promote to Rook

h7-h8=Q: Promote to Queen

Castling

Castling is obtained when the king moves two squares instead of one to a preset square. This means if the program has been modified than it will not work likely. If the king is e and moves to g or if the king is e and moves c than it will castle. You need to make sure this is legal before doing it as strange results may occur if it is not possible.

Piece Arrays

contain all the pieces in an array 'Pa2,'Pa3...'

## multiMove

Moves must conform with the specifications detailed at [makeAMove tech](#). No longer returns pieces

Possible outputs!

MULTIPLE\_MOVES\_MADE\_SUCCESSFULLY(NOMINAL): Moves made.

MULTI\_MOVE\_FAILED:(VARIABLE): Errors, see error\_message array element.

## netMoves

Explanation of parameters required.

Color

1 or white: white, the string value is case insensitive.

2 or black: black, the string is case insensitive.

CsvMoves: Must be in the form of e2-e4,e7-e5,g1-f3,b8-c6

White/Black pieces array takes an array of black pieces in the form Pa2,Pb2,...Nb1..

## descriptionOf\_pawn

No technical specifications found

# descriptionOf\_knight

No technical specifications found

# descriptionOf\_bishop

No technical specifications found

# descriptionOf\_rook

No technical specifications found

# descriptionOf\_queen

No technical specifications found

# descriptionOf\_king

No technical specifications found

# descriptionOf\_multiPiece

No technical specifications found

# descriptionOf\_all\_moves

No technical specifications found

# checkForLegalMove

Explanation of Inputs first and then returns.

color1 or white: white, the string is case insensitive

2 or black: black, the string is case insensitive.



Move: The move you intend to make, must be in the format of a2-a3, a7-a8=Q

csvMoves: moves in csv of the same format as move.

White/Black Pieces array is an array of pieces Pa2,Pb2...Possible outputs!

LEGAL\_MOVE(NOMINAL): The move is legal!

ILLEGAL\_MOVE(NOMINAL): The move is not legal!

CHECK\_FOR\_LEGAL\_MOVE\_FAILURE(VARIABLE): Function hfailed, see error\_message array element.

# descriptionOf\_calculateCastleMoves

No technical specifications found

# descriptionOf\_getLastEnemyMove

No technical specifications found

# descriptionOf\_getLastMove

No technical specifications found

# descriptionOf\_noMoves\_STALEMATE\_OR\_CHECKMATE\_Detect

No technical specifications found