Chess++: UML Diagram

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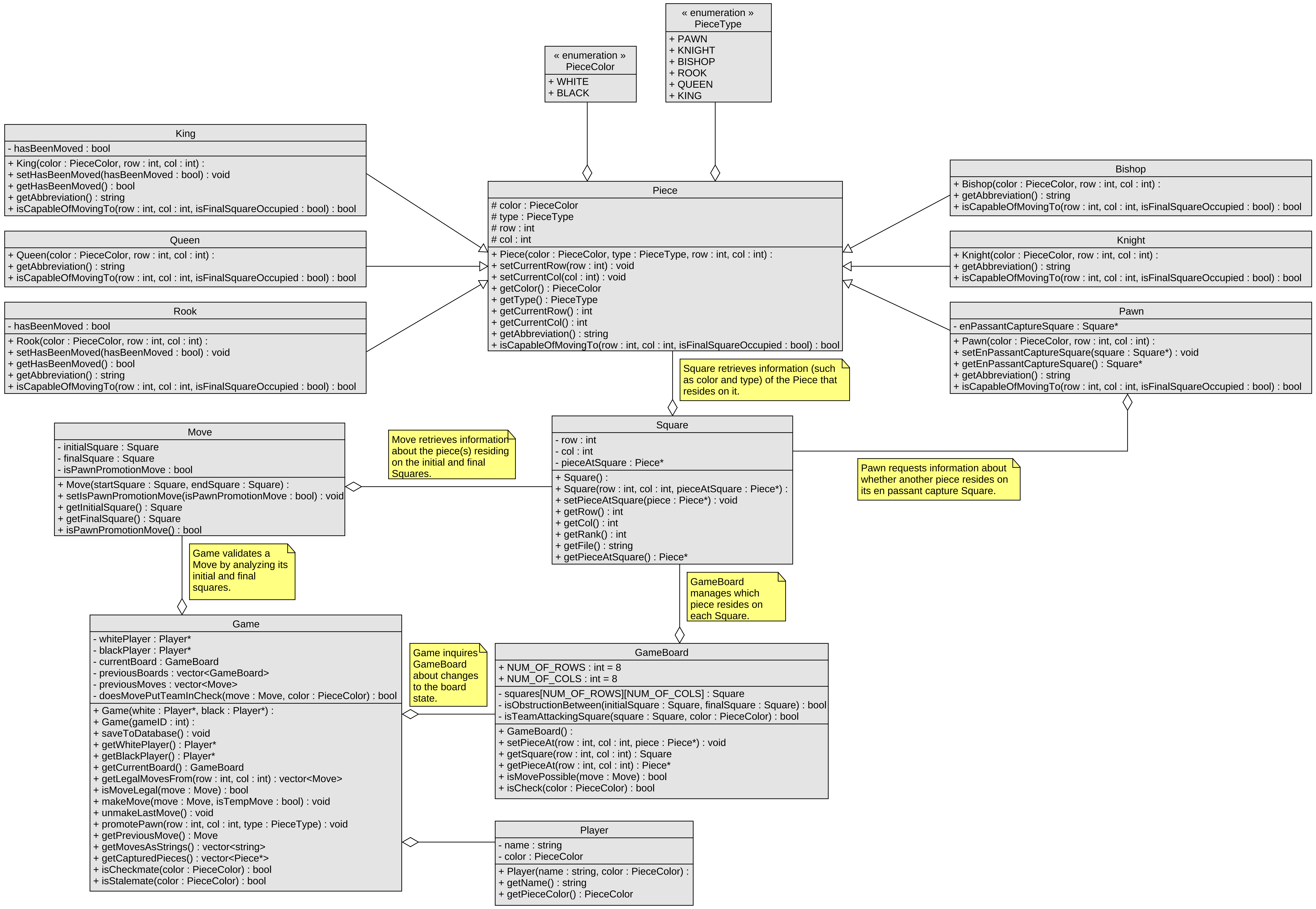

« enumeration »
PieceColor
+ WHITE
+ BLACK
« enumeration »
PieceType
+ PAWN
+ KNIGHT
+ BISHOP
+ ROOK
+ QUEEN
+ KING
King
- hasBeenMoved : bool
+ King(color : PieceColor, row : int, col : int) :
+ setHasBeenMoved(hasBeenMoved : bool) : void
+ getHasBeenMoved() : bool
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Queen
+ Queen(color : PieceColor, row : int, col : int) :
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Rook
- hasBeenMoved : bool
+ Rook(color : PieceColor, row : int, col : int) :
+ setHasBeenMoved(hasBeenMoved : bool) : void
+ getHasBeenMoved() : bool
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Piece
# color : PieceColor
# type : PieceType
# row : int
# col : int
+ Piece(color : PieceColor, type : PieceType, row : int, col : int) :
+ setCurrentRow(row : int) : void
+ setCurrentCol(col : int) : void
+ getColor() : PieceColor
+ getType() : PieceType
+ getCurrentRow() : int
+ getCurrentCol() : int
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Bishop
+ Bishop(color : PieceColor, row : int, col : int) :
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Knight
+ Knight(color : PieceColor, row : int, col : int) :
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Pawn
- enPassantCaptureSquare : Square*
+ Pawn(color : PieceColor, row : int, col : int) :
+ setEnPassantCaptureSquare(square : Square*) : void
+ getEnPassantCaptureSquare() : Square*
+ getAbbreviation() : string
+ isCapableOfMovingTo(row : int, col : int, isFinalSquareOccupied : bool) : bool
Move
- initialSquare : Square
- finalSquare : Square
- isPawnPromotionMove : bool
+ Move(startSquare : Square, endSquare : Square) :
+ setIsPawnPromotionMove(isPawnPromotionMove : bool) : void
+ getInitialSquare() : Square
+ getFinalSquare() : Square
+ isPawnPromotionMove() : bool
Square
- row : int
- col : int
- pieceAtSquare : Piece*
+ Square() :
+ Square(row : int, col : int, pieceAtSquare : Piece*) :
+ setPieceAtSquare(piece : Piece*) : void
+ getRow() : int
+ getCol() : int
+ getRank() : int
+ getFile() : string
+ getPieceAtSquare() : Piece*
Game
- whitePlayer : Player*
- blackPlayer : Player*
- currentBoard : GameBoard
- previousBoards : vector<GameBoard>
- previousMoves : vector<Move>
- doesMovePutTeamInCheck(move : Move, color : PieceColor) : bool
+ Game(white : Player*, black : Player*) :
+ Game(gameID : int) :
+ saveToDatabase() : void
+ getWhitePlayer() : Player*
+ getBlackPlayer() : Player*
+ getCurrentBoard() : GameBoard
+ getLegalMovesFrom(row : int, col : int) : vector<Move>
+ isMoveLegal(move : Move) : bool
+ makeMove(move : Move, isTempMove : bool) : void
+ unmakeLastMove() : void
+ promotePawn(row : int, col : int, type : PieceType) : void
+ getPreviousMove() : Move
+ getMovesAsStrings() : vector<string>
+ getCapturedPieces() : vector<Piece*>
+ isCheckmate(color : PieceColor) : bool
+ isStalemate(color : PieceColor) : bool
GameBoard
+ NUM_OF_ROWS : int = 8
+ NUM_OF_COLS : int = 8
- squares[NUM_OF_ROWS][NUM_OF_COLS] : Square
- isObstructionBetween(initialSquare : Square, finalSquare : Square) : bool
- isTeamAttackingSquare(square : Square, color : PieceColor) : bool
+ GameBoard() :
+ setPieceAt(row : int, col : int, piece : Piece*) : void
+ getSquare(row : int, col : int) : Square
+ getPieceAt(row : int, col : int) : Piece*
+ isMovePossible(move : Move) : bool
+ isCheck(color : PieceColor) : bool
Player
- name : string
- color : PieceColor
+ Player(name : string, color : PieceColor) :
+ getName() : string
+ getPieceColor() : PieceColor

Square retrieves information (such as color and type) of the Piece that resides on it.

Move retrieves information about the piece(s) residing on the initial and final Squares.

Pawn requests information about whether another piece resides on its en passant capture Square.

Game validates a Move by analyzing its initial and final squares.

GameBoard manages which piece resides on each Square.

Game inquires GameBoard about changes to the board state.