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February 4, 2014

Design

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## Object oriented design for chess game

Object Oriented design represents the real world objects in code.

Think of how you play chess:

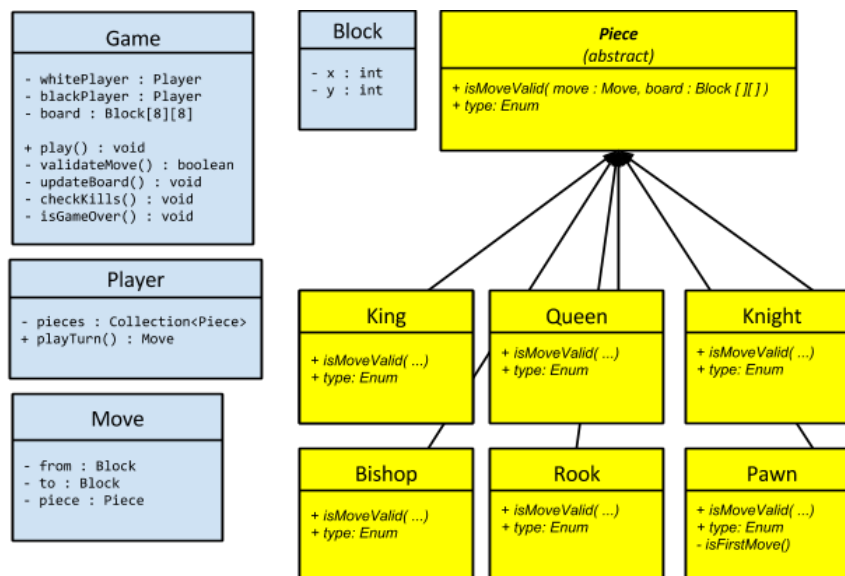
- A Board '**is**' collection of blocks (ΣBlock)
- A Player '**is**' collection of pieces ( Player = ΣPiece )
- A Game has :
  - one board
  - one black player
  - one white player

When making a move a Player chooses a Piece  
Depending on type of piece, the Player checks valid moves. Which means that validity of move is :  
tightly coupled to type of piece  
**is a property of piece**

When thinking about valid moves, the player 'is aware of'  
the board  
**location of all the pieces on the board**

Last point implies that the move validation routine should have access location of all the pieces on the board

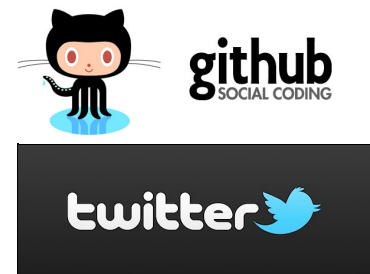
On the board, block '**contains**' a piece



### Gameplay

1. A Player gets a turn [ Game.play() ]
2. Player makes a plays a turn and returns the played 'move' to Game [ Player.playTurn() ] (selected piece, from block and to block are encapsulated in a data-type 'Move')
3. Game delegates the move validation processing to the moved Piece instance, passing destination-block and board instances. ( Piece.isValidMove( ... ):boolean )(Board

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instance is required to check is a piece lies in path of the move)

4. Piece calculates validity of the move and returns a boolean to Game
5. If move is valid, GameController
  - A. updates location of Piece on board (Game.updateBoard(...))
  - B. checks if move has performed any kills ( Game.checkKills(...))
  - C. checks if any of game terminations conditions are valid ( Game.isGameOver(...))

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ladder@yahoo.com said:  
August 27, 2014  
9:18 am

this is a very neat and concise design for a chess game. thank you for the help!

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