

# Checkers Game Data Model Concept

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Description: create a data model concept for the game of Checkers (Draughts).

Purpose: Gain experience with creating data models.

Rules: Draughts is played by two opponents, on opposite sides of the gameboard. One player has the dark pieces; the other has the light pieces. Players alternate turns. A player may not move an opponent's piece. A move consists of moving a piece diagonally to an adjacent unoccupied square. If the adjacent square contains an opponent's piece, and the square immediately beyond it is vacant, the piece may be captured (and removed from the game) by jumping over it.

Only the dark squares of the checkered board are used. A piece may move only diagonally into an unoccupied square. Capturing is mandatory in most official rules, although some rule variations make capturing optional when presented.[5] In almost all variants, the player without pieces remaining, or who cannot move due to being blocked, loses the game.

Classes:

1. Checkerboard: We build an 8 x 8 checker board with functions and attributes.
2. Player: We need name and color to determine play order
3. Piece: We use a 2D array to save the location of each piece, when jump or move we determine whether it is valid.

Details:

```
Checkerboard {  
    Build ();  
    getBoard ();  
    getWidth ();  
    getHeight ();  
    getNumCols ();  
    getNumRows ()  
    getLightColor ();  
    ....  
}
```

```
Player {  
    String name;  
    Color roleColor;  
    getColor ();  
}  
Piece {  
    Jump ();  
    Move ();  
    CheckJump ();  
    CheckMove ();  
    getLocation ();  
}
```