Entities:

|  |  |
| --- | --- |
| **Tile** | |
| * letter * value * getLetter, getValue |  |

|  |  |
| --- | --- |
| **Bag** | |
| * tiles - list of tiles currently in the bag * drawTile - remove and return a tile from tiles * swapTiles - put some tiles in and remove and return the same amount | * Tile |

|  |  |
| --- | --- |
| **Square** | |
| * tile - the tile on the square, possibly null * modifier - the modifier for the square, e.g. normal, double letter, triple word, etc * setTile, getTile, getModifier | * Tile |

|  |  |
| --- | --- |
| **Board** | |
| * squares - two-dimensional array of Squares representing the board * checkWord - check if a word would fit, given the current tiles on the board * lettersNeeded - returns the additional letters needed to complete a word on the board * insertWord - insert a word, returns total points of the word * countValue - tally points of a word on the board | * Square * Tile |

|  |  |
| --- | --- |
| **Dictionary** | |
| * words - set of valid words * isValid - check if word is valid |  |

Use case

|  |  |
| --- | --- |
| **Player** | |
| * rack - a list of tiles in their rack * points * name * addPoints * addTile * removeTile * getRackSize * HasLetters - check if player has certain letters in their rack | * Tile |

|  |  |
| --- | --- |
| **BoardRenderer** | |
| * renderBoard | * Board |

Controller

|  |  |
| --- | --- |
| **Game** | |
| * player1, player2 * board * bag * dictionary * play - the main game loop. Goes between players and handles I/O, running checks and updating the players, board, and bag as necessary | * Bag * Player * Board * Dictionary * Tile |