Rationale

- Vineet Joshi (@vineetj)

Scrabble:

This class holds the main contents of the game and represents the current progress. It has a board, active players and a tile box as its key attributes. Most of the functions related with checking validation, making a move and user choices are part of this class. The move selected by the user in the GUI is directly passed to this class and this class is the heart of game implementation. It is here that we check if a move is valid and based on that ask a player to submit another move if it is not or execute the move and assign points. If the player makes his move he can then be granted a new special tile that he requested during calling his move based on his current points. The special tile can be placed on the board along with the regular tiles during a move. On every turn the current player is recorded in a separate variable and all the actions associated during the move are added to that player's attributes. The current player is replaced by the new player at the end of the current move and related actions.

Board:

Represents the current state of the game board. It is composed of 225 squares represented in a 2-d array that can either hold tiles or be empty. This class holds how a board has been filled and where are the available squares. Board has some key methods that allow us to calculate the total score after playing a valid new move and also gives us a list of all words (valid/invalid) formed after placing the set of tiles in a move. Each square contains a tile array that can hold one regular tile and many special tiles, keeping in mind the regular tile is always on the top.

Tile Box :

Tile box is the class that holds all remaining playable regular tiles during the course of the game. The tiles are subsequently removed as users take in more tiles from the box.

Tiles:

Tiles are the key building blocks of the game. They are the most elementary units that enable users to interact with the board and form words. Tiles are placed on squares in the board. Tiles are of two categories, regular and special. Regular tiles are simple tiles that hold letters and a score and are used to form words. Special tiles are not directly involved with word formation but each one has a special effect method. When such a tile is used the effect method is called which performs some effect on the current game state. Only one regular tile can be placed in a square and no other tile can be place over a regular tile. Special tiles can be placed on top of one another but not regular tiles.

Player:

A player class holds the current scores and inventory of a player. It has methods to add tiles to player's inventory, refill the player's rack with regular tiles and update his/her scores. A player's inventory can hold only 7 regular tiles and an unlimited number of special tiles.