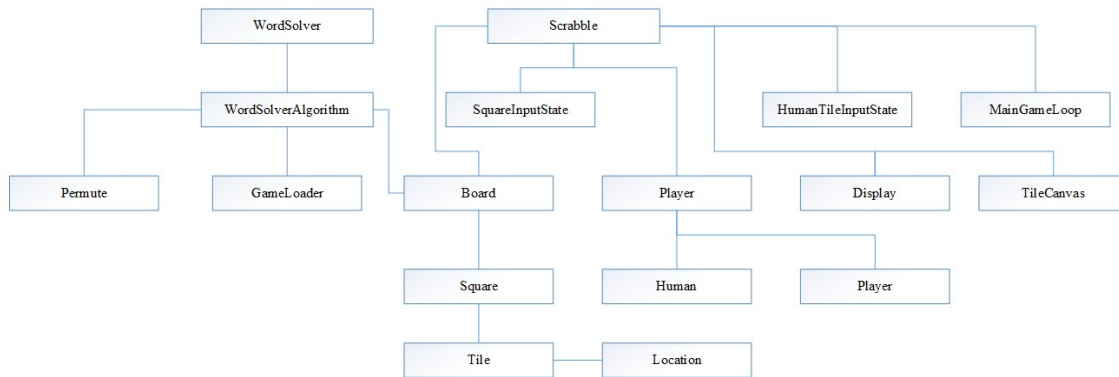


# Object-Oriented Design

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**Location:** the class stores x, y coordinate of the position of tile on board

**Tile:** the class contains the letter and a score

**Square:** it represents a square in the board. It contains a number such as 2 to double the score of the letter that put on it. In GUI program, it can handle the click event that calls the controller (MainGameLoop class) to process it

**Board:** Board is the 2 dimensional array of the Square objects.

**Player:** It is super class of the Human class and Computer class. The player has its score and the list of 7 Tiles.

**Computer:** The derived class of the Player class that uses the WordSolverAlgorithm class to decide which positions to put tiles

**Human:** The derived class of the Player class. It represents for the human player. The human class contains the list of canvas to display the tiles (7 tiles) on the GUI.

**GameLoader** class loads the dictionary, tiles, initial board from the text files.

Permute is the utility class that is used by the WordSolverAlgorithm to permute the letters

Display is the view of the program that shows the board, player tiles, message, game status on the screen

TileCanvas is the canvas of JavaFX that draw the canvas with the letter, score

HumanTileInputState is event handler for the clicking on the tile of human player

SquareTileInputState is event handler for the clicking on the square on the board

MainGameLoop manages the controller layer of the program. It processes the click event, calls computer to play its turn, shows the message....

WordSolverAlgorithm is algorithm that helps the computer to put the letters on board

Scrabble is the starting point to run the GUI version

WordSolver is the starting point of console version.

Text files:

sowpods.txt: the text file contains the dictionary scrabble\_tiles.txt: the text file contains the tiles

with letters, scores and number of tiles of the game

scrabble\_board.txt: the text file that contains the initial board (including the squares with scores such as double, triple score)