Word Solver (console)

Read in various input

↓

Create Scrabble board pieces

↓

Tile Bag *
(tiles used to play on board)

↓

Board

↓

Board Squares

Scanner
(scan in input from console/files)

Word Search trie
(used to search words in a given dictionary file

Rack
(for each player)

→

Tiles
(main game piece to handle)

Wordsolver
(most of the program — encapsulates a lot of objects / procedures)

↓

Find words in play on a given board/object configuration

↓

Check a word along a given direction

† Find all "candidate" anchor squares on the Board object

↓

Find unique anchor squares that needs to be checked
(so no redundant search is conducted)

↓

Several Anchor square objects

Set "left limits" for applicable Anchor Square objects

↓

Initialize the cross check sets for the "outside" anchor squares — applies to all "candidates"

↓

Find legal words for each checked Anchor square object

→ Check "left part" (if applicable)

→ Check "right part" — right extend

Update each part if successful; Revert each part if each call returned

Sort through all legal words and print highest scoring solution

* Tile Bag object should "refresh" after each input with how I handled placing the tiles on the Board object (keeps track of which Tile objects are still available for play

† "Candidate" squares are checked for applicability — only then, an Anchor object is created (search surrounding squares

Scrabble (GUI)

Start Game

↓

Setup the Pane and Scene

↓

Create Various GUI objects

↓

Human Player Score Label

Computer Player Score Label

↓

Play button (Human Player)

→

Plays the Tile objects on the board and switches to the Computer Player's turn

→

Event Handler that stores the board position (row, column index) of the Tile objects, if they are played

Allows (store the rack with images of the Tile objects

Human Player

Computer Player

Wordsolver object *

Rack → Tiles

Tilebag

Board

Board Square

Updates Board object whenever a word is played

* Setup of wordsolver is pretty much the same concept that the rack changes dynamically throughout the game