

Algorithm stuff!

This Scrabble Algorithm, happens in steps which will be outlined below.

First turn:

- We take all the letters from our Frame and find all possible permutations of these letters.
- We check the dictionary for all of these permutations, creating an arraylist of these actual words.
- After this the score of all these words are calculated to find the highest scoring word and that word is played.

After this:

- We check every space on the board looking for a tile.
- Once a tile is found, the playType of this tile is found. (i.e. If the word that will be played will be a Left-Right intersection, Up-Down intersection, adjacent word, etc..)
- The permutations of all the tiles in the Frame and this Tile on the board are found and checked against the dictionary, and the highest scoring word is found from this.
- This is repeated for every Tile on the board, each time adding this words to an arrayList of potential words, the highest scoring word of all of these are found and is played.

A few finicky bits:

Blank tile.

- If a blank tile is in the Frame, the bot will find the permutations for all the Tiles without it.
- Then letting the blank tile equal the letter 'a', it will insert 'a' into every position in each of the permutations.
- It will do this 26 times for every letter that the blank tile could be.
- Afterwards it adds these permutationsWithBlankTile to the permutationWithoutBlankTile, much like in the concept of Inclusion-Exclusion.

Middle of an intersection:

- If when checking to play a word, the bot comes across a tile that is already surrounded by other tiles it will ignore it and move on.