International Bot – Documentation

Contributors: Simonas Ramonas – 18763829

Choon Wei Tong – 17205786

Shijie Liu - 18439314

For the bot class, we decided to implement our own data structure. An Array list that holds a special word structure indicating the word and its scrabble score. We believe that this method would result in assuring that we output the highest scoring word, and also establish an all-round efficient searching algorithm.

Having 4 array lists:

- highestScoringWords – holds the all dictionary words in order of highest points to lowest. Using (makeHighestScoringWordsList function).
- wordsApplicable – holds words which are potentially a fit for board.(makeWordsFromFrame).
- anchorTiles – stores positions on the board which are anchor tiles (available tile where a character can be inserted) (function searchBoard).
- allLettersOnBoard – holds all existing letters on board, which can be a part of the next word. (searchBoard).

The search time was incredibly fast too since we used our own database. Only within the 100 range of milliseconds for the majority of the cases. Which we were really happy about.

InternationalBot: by default, our bot will always call the playGame function, which will either choose to call placeFirstWord function for the first turn or placewordFunction for later turns.

For placing first word, we can search through our highest scoring words and find the highest in the list with the letters we have.

After first word is placed, based on the positions available on the board, placeWord Function will determine a suitable area to place the word, which is chosen from wordApplicable array, that makes all possible words from Bot frame letters and letters on board. Which results in a list that ensures it is sorted from the highest scoring valid word to the lowest.

The search time was incredibly fast too since we used our own database. Only within the 100 range of milliseconds for the majority of the cases. Which we were really happy about