A DICTIONARY

CS163 - Final Project, 21APCS1, 21APCS2

Project Features

A dictionary is a popular application to help users look up the meanings of words.

In this project, groups of students are asked to write a general dictionary using the C/C++ programming language.

The app should be in console mode or GUI mode.

Note that, because the number of words in a dictionary is enormous, up to thousands of words, students should use CS163 knowledge to design suitable data structures and algorithms.

To test the app, you should collect several dictionary data sets, from smallest to largest, including emojis, slang words, English to English, English to Vietnamese, and Vietnamese to English data sets.

Here is the list of features.

1. Users can switch between data sets. Users specify a data set, and the program should build data structures for this data set and store them in the RAM. Remember to store the data structures to files so that every time users open the app, and it does not need to rebuild the data structures again.
2. Users can search for a keyword. Users can add the word to the favorite list to view again later.
3. Users can search for a definition.
4. Users can view the history of search words again.
5. Users can add a new word and its definition. Does the app need to rebuild the data structures from scratch, or can it build incrementally?
6. Users can edit the definition of an existing word.
7. Users can remove a word from the dictionary.
8. Users can reset the dictionary to its original state.
9. Users can view a random word and its definition.
10. Users can view the favorite list.
11. Users can remove/add a word from the favorite list.
12. The app can make random a word with four definitions, and users guess its meaning.
13. The app can provide a random definition with four keywords, and users choose the correct word.

Technical Requirements

1. Use Trello to manage the tasks.
2. Use Git to manage your source codes.

3. Test the app with data sets provided by teaching assistants and other big data sets. Challenge your app with other teams.

4. Write a technical report explaining your design and algorithms when loading a dataset, searching, adding, updating, or deleting a word. Evaluate the O notation of every action. Report the running time.

5. C/C++ language is required in the project. You must build your data structures and algorithms. Only array and vector classes are allowed to support you.