

Lab 4

Building dictionary application

1. Objectives

You are required to apply your knowledge about Data Structure for a practical application: English-English dictionary.

Building dictionary using these data structure:

- Array (sorted and use binary search)
- AVL Tree
- Hash table.

For each kind of dictionary, you need to implement on a seperable project. On the report, you need to show:

- Descript in detail how you make each implementation.
- Your experiments.
- Comparing time complexities with implementation of other data structure.
- Analyze strong and weak points of each data structure.
- A guide to show how to use your application.

2. Requirement

Your dictionary must be basic functions:

- Load content from a file.
- Search meaning of a provided word
- Add new word to dictionary. User need to input: keyword and meaning
- Edit meaning of a word
- Delete a word
- Save dictionary to a file

For each kind of data structure using to implement, you need to analyze different feature of these data structure, such as:

- Maximun heigh of search tree
- Average searching time
- Average editing time
- Average deleting time
- Loading time, saving time
- Memory use.
- ...

For example:

Time	Array	AVL Tree	Hash Table	...
Load				
Save				
Look up				
Insert				
Remove				
Edit				

Make a graph with the above information from table and analyze

3. Dictionary file

In this lab, you will use dataset: Oxford English Dictionary (provided)

```
Affiliate -v. (-ting) (foll. By to, with) attach, adopt, or connect as a member or branch.
Affiliation n. Affiliating or being affiliated.
Affiliation order n. Legal order against the supposed father of an illegitimate child for .
Affinity n. (pl. -ies) 1 liking or attraction; feeling of kinship. 2 relationship, esp. By
Affirm v. 1 assert, state as a fact. 2 law make a solemn declaration in place of an oath. [
Affirmative -adj. Affirming; expressing approval. -n. Affirmative statement or word etc.
Affix -v. 1 attach, fasten. 2 add in writing. -n. 1 addition. 2 gram. Prefix or suffix. [l.
Afflict v. Distress physically or mentally. [latin fligo flict- strike down]
```

You need to write code to extract appropriate information for your application from this text file.

4. Terms of submission

- Student are required to submit both source code, document and some additional files for this Lab.
- Compress them with the name <StudentID>.zip or <StudentID>.rar. Then submit this compressed file.

Similar source code, plagiarism or spam submissions will score 0 in this SUBJECT