Lab 8

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 eample:

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: OPTED-Dictionary (provided)

	A	B	C	D
1	Word	Count	POS	Definition
2	A	1	""	"The first letter of the English and of many other alphabets. The capital A of the alphabets of Middle and Western Europe as also the small letter (a) besides
3	A	1	""	"The name of the sixth tone in the model major scale (that in C) or the first tone of the minor scale which is named after it the scale in A minor. The second s
4	A	1	""	"An adjective commonly called the indefinite article and signifying one or any but less emphatically."
5	A	1	""	"In each; to or for each; as """"twenty leagues a day"""" """"a hundred pounds a year"""" """"a dollar a yard"""" etc."
6	A	1	"prep."	"In; on; at; by."
7	A	1	"prep."	"In process of; in the act of; into; to; -- used with verbal substantives in -ing which begin with a consonant. This is a shortened form of the preposition an (wh
8	A	1	""	"Of."
9	A	1	""	"A barbarous corruption of have of he and sometimes of it and of they."
10	A	1	""	"An expletive void of sense to fill up the meter"
11	A-	2	""	"A as a prefix to English words is derived from various sources. (1) It frequently signifies on or in (from an a forms of AS. on) denoting a state as in afoot on f
12	A 1	3	""	"A registry mark given by underwriters (as at Lloyd's) to ships in first-class condition. Inferior grades are indicated by A 2 and A 3."
13	Aam	3	"n."	"A Dutch and German measure of liquids varying in different cities being at Amsterdam about 41 wine gallons at Antwerp 36 1/2 at Hamburg 38 1/4."
14	Aard-vark	9	"n."	"An edentate mammal of the genus Orycteropus somewhat resembling a pig common in some parts of Southern Africa. It burrows in the ground and feeds e
15	Aard-wolf	9	"n."	"A carnivorous quadruped (Proteles Lalandii) of South Africa resembling the fox and hyena. See Proteles."

You need to write code to extract appropriate information for your application from this csv 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