King Fahd University of Petroleum & Minerals
College of Computer Sciences and Engineering

ICS 202
Project: Dictionary

by

Mostafa Othman 201943910

For

Mr. Alwaleed Alkhodairi

Data structure and algorithms

ICS 202-51

General idea:

I used five classes in my work: *dictionaryDriver, WordPair, AVLTree, BST, BTNode.*

classes:

dictionaryDriver: this is the main class in this class We open the file and insert its contents in the avltree in the *main* method *O(n)*.

And we also interact with the user in the *menu* method *O(n)*.

WordPair: in this class we define the word pairs in a class and provide its constructor each method is O(1).

AVLTree: this is the same class provided in the lab with some modifications to allow *the handling with WordPair type.*

In this class we added the methods*: WordPair find(String word)* O(logn) to find the word in the avl tree.

insert(WordPair el) O(logn) to insert a word in the avl tree.

delete(String word) O(logn) to delete a word from the avl tree.

modifyWord(String word, String newMeanings) O(logn) to change the meaning of a word in the avl tree.

printAll(WordPair proot, String prefix) O(n) to print all the word with the given prefix.

printSorted() O(n) that prints all the words in the tree sorted using in order traversal.

visit(WordPair<T> p) O(1) a method to help with the traversal of the tree.

Close(WordPair<T> proot ,FileWriter myWriter) O(n) to save the changes done on the avl tree to the file.

BST: this is the same class provided in the lab with some modifications to allow the handling with WordPair type.

BTNode: this is the same class provided in the lab.