**Homework of CSCD320**

**To turn in: please wrap up all your java source files into a zip file, then** turn in the single zip file on the **EWU Canvas** by going to CSCD320-01 course page on Canvas, then clicking AssignmentsHW4->submit. Please name your zip file with your last name, followed by the first initial of your first name, followed by hw4. For example, if you are John Smith, name you file as smithjhw4.zip

**Requirements**

**1, Based on the provided Trie2.java source code, please write a Java method wordsPrefixedBy(TrieNode root, String p) in the provided Trie2 Prefix tree class, as described in below.**

**// First, please add this public method into the provided Trie2 class.**

**// Then implement the private helper method below this method.**

public LinkedList wordsPrefixedBy(String p) {

return wordsPrefixedBy(this.root, p);

}//end of method

// **The** **method returns a LinkedList of all words that have a prefix p. For example, if the current prefix**

**// tree object stores a set of words {apple, bike, bake, pen, did, ape, child, cat, file, hello, he, hell},**

**// the method call wordsPrefixedBy(root, “ap”) returns two words in the tree {“apple”, “ape”}**

**// Helper methods are allowed.**

private LinkedList wordsPrefixedBy(TrieNode root, String p) {

// **Write me**

//……..

}//end of method

2, Write a main() method in a separate **Tester.java** file, in which you will do the following,

2.1) Create a prefix tree instance named **myTrie**.

2.2) Insert into **myTrie** the following set of words, **{**apple, bike, bake, pen, did, ape, child, cat, file, hello, he, hell}, by repeatedly calling its insertString() method.

2.3) Your call **myTrie.wordsPrefixedBy(“ap”)** will return two words in the tree {“apple”, “ape”}. Please explicitly display on the standard output the list of words returned by your method call.

2.3) Your call **myTrie.wordsPrefixedBy(“he”)** will return three words in the tree {“hello”, “he”, “hell”}. Please explicitly display on the standard output the list of words returned by your method call.

3, Please organize your source code so that I can compile **all** your source files in **one** folder using command, **javac \*.java**, and run your program using command on command line, **java Tester.**

**4, You can have your own design for any details that have NOT been specified in this document. You have the freedom to add or change the code that I have provided.**