Programming 1

Tutorial 11

# Activity 1

Write a program called EngVieDictionary which can translate from English words to Vietnamese meanings. The program should store words and their meanings in a Map<String, String> object. It should ask the user to enter an English word, then shows the word’s meaning or the text “Meaning not found” if the word doesn’t exist in the data of the program (the Map object above). The program should also asks if the user wants to look up another word. The user should answer 1 (yes) or 2 (no).

(\*) Hint: This program should contain a while or do…while loop. For an implementation of the Map data structure in Java, use the class java.util.HashMap.

# Activity 2

Write a program named ScoreChecker which lets a student to look up his score. The program should store student names and scores in a Map<String, Double> object. It should ask the user to enter his full name and shows his score or the text “Score not found” if his full name is not amongst the keys of the Map object.

(\*) Tips: This program is very similar to the EngVieDictionary program except that it doesn’t ask the user if he wants to look up again.

# Activity 3

Create a text file which contains several English paragraph and fill it with some content that you can find. In the file, there should be words that a duplicated. Write a program to read the content of this text file and prints out a vocabulary of all the words in the text, without duplicates. Your program should be case-insensitive, which means the two strings "Hello" and "hello" should be considered the same word.

(\*) Hint: You should use String.split() method to split the text content into words. You should also convert everything into lowercase (or uppercase) to make your program case-insensitive. Utilize the properties of the Set data structure to create a list with unique items. Java has a few implements of Set, which are HashSet, TreeSet and LinkedHashSet.

# Activity 4 (\*)

It is possible to create a Map<String, List<String>> object. The Map has String keys can List values. Each such List contains String elements. Write a menu-driven program which provides two features:

1. Add a student to a class. It should ask the user to enter the class’ name and the student’s name.
2. Display all students in a class. This feature should ask the user to enter the class’ name. If the class is not found in the program’s data, show the text “Class not found”.

(\*) Hint: Three possible choices for Map are HashMap, TreeMap and LinkedHashMap. Two possible choices for List are ArrayList and LinkedList.