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 use a `while` or `do…while` loop to repeat until the user answers 2 (no). For an implementation of the `Map` data structure in Java, use the class `java.util.HashMap`.

Deliverable

EngVieDictionary.java

Activity 2

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`.

Deliverable

BuildVocabulary.java

Activity 3

(optional)

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 name and shows his score or the text "`Score not found`" if his name is not amongst the keys of the `Map` object.

Hint

This program is very similar to the `EngVieDictionary` program except that it doesn't ask the user if he wants to look up again.

Deliverable

ScoreChecker.java

Activity 4

(optional)

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`.

Deliverable

ClassManager.java