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Object-Oriented Programming (OOP)- 2nd Year CPI

**Lab 07: Practice with Java Collections Framework (Source: Ohio State University USA)**

**Objective**

In this lab you will experiment with the Java Collections Framework (JCF) by implementing the static methods giveRaise and incrementAll both with the OSU CSE collection components and also with the JFC components and comparing and testing the two solutions.

**Setup**

To get started, import the project for this lab, JCFExplorations, from the JCFExplorations.zip file available at this [link](https://cse22x1.engineering.osu.edu/2231/web-sw2/extras/instructions/java-collections-framework/JCFExplorations.zip). If you don't remember how to do this, see the [Setup instructions](https://cse22x1.engineering.osu.edu/2231/web-sw2/extras/instructions/sequence-on-stack/sequence-on-stack.html#setup) in an earlier lab.

**Method**

1. First carefully look through the file JCFExplorations.java. It contains the skeletons for two versions each of two static methods, giveRaise and incrementAll. The two versions of each method only differ in the type of one of the parameters. We used types fully qualified with the package name to make the distinction clear.
2. In JCFExplorations.java, complete the bodies of the two versions of the giveRaise *static* method by pasting the code you wrote for the homework.
3. Open the file JCFExplorationsTest.java in the test folder and review the 2 sample test cases provided for giveRaise to see how they are set up and how you can test your implementations of giveRaise. Add appropriate test cases for both implementations of giveRaise and run the JUnit test fixture until you are confident both that your implementations are correct and that your JUnit test fixture adequately tests your implementations.
4. In JCFExplorations.java, complete the bodies of the two versions of the incrementAll *static* method.
5. In JCFExplorationsTest.java, review the 4 sample test cases provided for incrementAll to see how they are set up and how you can test your implementations of incrementAll. Add appropriate test cases for both implementations of incrementAll and run the JUnit test fixture until you are confident both that your implementations are correct and that your JUnit test fixture adequately tests your implementations.

**Additional Activities**

1. Can you think of any other ways you could correctly implement each version of giveRaise and incrementAll? In particular, are other ways to iterate over Map and Set with either the OSU CSE collection components or with the JCF components viable alternatives to the ones you chose? If you have not experimented with other approaches you should do so to get a better understanding of what can and cannot be done while iterating over collections.