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Analysis Document - Assignment 02
CS 2420 – September 7, 2016

1. This assignment is traditionally done with Pair Programming. Were there times you wish you had a partner to bounce ideas off of? We will ask you to compare your experiences with these first, "single" to assignments to the paired assignments later on in the semester. Please use your answer here for reference later.

There were definitely times, especially the beginning of Phase 2 that I did a lot of guesswork, just going from error to error with type casting and trying to fix everything. I felt like I understood the concepts of Java 5 generics from reading the textbook but wanted someone to discuss with in practice. The first time I apply a concept it's definitely nice to discuss. It worked out, however and I learned by doing.

2. Java's built-in classes Comparable and Comparator are both interfaces for doing comparisons among objects. What is the difference in the two interfaces? Give a situation when it is best to use each. Is it possible to change the extra features in LibraryGeneric such that the Comparable interface is used instead of Comparator? Why or why not?

Comparable catches errors at compile time regarding type-casting for the compareTo method. If the compiler can't verify that the type casting will work, we must solve this problem some other way. Also, if the objects specified are not type Comparable and therefore cannot use the compareTo method, then there must be another way to compare them. The solution includes passing the comparison function as another parameter, which involves the Comparator. The Comparator that determines the signature of an abstract method to be filled out, in this case:

public int compare(LibraryBookGeneric<Type> lhs, LibraryBookGeneric<Type> rhs).

We won't be able to use a Comparable interface for the extra features in LibraryGeneric because it will be difficult to agree on a definition for what a compareTo method would mean in every case. We want this code to be generic and reusable and defining the compareTo method for getting book inventories and overdue lists may not be compatible with future types.

3. Comment about the efficiency of your programming time. Did you utilize the time spent on this assignment effectively? How might it be improved?

I did utilize this time effectively. I definitely want to get an even greater head-start on the textbook reading for this next assignment. Chapter 4 was a long chapter and the sections on Java 5 Generics and functors were near the end. Reading the textbook and going over lecture notes helped me be extremely efficient. It was also incredibly helpful to have a refresher on the debugger.

4. Reiterate why writing Generic code is important for this course. Phrase your answer in terms of Data Structures and Algorithms.

Writing generic code is important for this class for code reuse. This class does not focus on the minutiae of small code improvements. Rather, the true efficiency of code can be determined by

spending time on choosing proper algorithms. Being able to reuse and simplify code helps the focus being on the algorithm and not necessarily the code.

5. How many hours did you spend on this assignment?

I spent about 5 hours on the actual assignment and about 10 hours on textbook notes and reading.