Assignment 5

Due date

- 11.59 PM EST Thursday, May 1st.

Submit your code as per the provided instructions.

Updates

Assignment Goal

Apply the design principles you have learned so far to develop and test code for the given problem. Apply the visitor pattern and any other applicable pattern(s).

Team Work

- You are required to work alone on this project.

You CANNOT collaborate or discuss the design, implementation, or debugging ideas with any other student. However, discussion on design is encouraged via the listserv.

Programming Language

You are required to program this project in Java.

Compilation Method

- You are required to use ANT for the following:
  - Compiling the code
  - running the code
  - Generating a tarball for submission
  - Generating javadocs
- Your code should compile and run on *bingsuns* or the *debian-pods* in the Computer Science lab in the Engineering Building.

Policy on sharing of code

- EVERY line of code that you submit in this assignment should be written by your team or be part of the code template provided for this assignment. Do NOT show your code to any other group. Our code-comparison software can very easily detect similarities.
- Post to the listserv if you have any questions about the requirements. Do NOT post your code to the listserv asking for help with debugging. However, it is okay to post design/concept questions on

programming in Java/C/C++.

Project Description

Sorted Insert Visitors

The purpose of this assignment is to create two visitors and apply it to two different elements.

1. the first visitor does a sortedInsert (inserts in the correct spot).
2. the second visitor adds an element to the end of the data structure and calls a sorting algorithm to sort the entire data each time. You can write your own sorting algorithm, or use a sorting library.
3. Create two ADTs: MyVector and MyArray that internally store a vector of integers and an array (or arrayList) of integers respectively.
4. Apply the two visitors to MyVector and MyArray. Create two instances of each of the two ADTs. So, each visitor is applied to a different instance.
5. The two ADTs should have a method display(). Call this method on the two ADTs from the driver to print the sorted arrays.
6. The input integers should be stored in a file. Each line should have one integer. Assume that the input does not contain any duplicates.
7. Design a class FileProcessor.java that reads from the input file and returns one integer everytime the *nextInt()* method is called. Remember to convert the string in each line of the file to an integer.
8. The visitors should read integers via an instance of FileProcessor.
9. The driver should accept the input file name via the command line.

Some General Design Considerations

- Same as before

Code Organization

- Your directory structure should be the following:

```
-firstName_lastName
---sortedInsertVisitors
----build.xml
----README.txt
   ----src
       ---sortedInsertVisitors
                ------driver
                        ---------Driver.java
                ------util
                        ---------SortedInsertVisitor.java
                        ---------SlowInsertVisitor.java
                        ---------Visitor.java
                        ---------MyVector
                        ---------MyArray
                        ---------FileProcessor
                        ------Any other Class/file you need
```

Code Templates

- None provided.

Submission

- Same as Assignment-1.

Late Submissions

- The policy for late submissions is that you will lose 10% of the grade for each day that your submission is delayed.

Grading Guidelines

Grading Guidelines.

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