

Assignment 4

(may be done by a team of at most two students)

Assigned: Thursday, October 26

Due: Wednesday, November 7 (11:59 pm)

Part 1: Concurrent Mutator-Collector Simulator

See A4_Part.pdf posted on October 26.

Part 2: Design Patterns

One of the most important design patterns is the Observer pattern, also known as the Model-View-Controller (MVC) pattern, first introduced in the Smalltalk programming language. In this part of the assignment, you are asked to make use of the Observer pattern so as to achieve a modular interaction between a model and its viewers.

Posted on Piazza: Resources→Assignments is a file [ObserverPatternExample.java](#) which defines the following classes:

1. The “observer” classes [Table](#), [BarChart](#), and [PieChart](#). The classes [BarChart](#) and [PieChart](#) extend a class [Chart](#), which factors the commonalities between these two classes. The code for these classes is given to you in their entirety except for their respective [update\(\)](#) methods.
2. The “observable” class [Sales](#), which records and updates sales data for five regions, called North, South, Central, East, and West. The class is given in its entirety except for the code that notifies the observers.
3. The class [ObserverPatternExample](#) is the top-level class containing the [main\(\)](#) method. You are required to define the [main](#) method fully.

Complete the definitions of the above classes and run the program. The amount of coding is very small and much of it is similar to what was presented in Lecture 18. A correct implementation would enable you to see the table, bar-chart, and pie-chart.

What to Submit. Prepare a top-level directory named [A4_Part2_UBITId1_UBITId2](#) if the assignment is done by a team of two students; otherwise, name it as [A4_Part2_UBITId](#) if the assignment is done solo. (Order the [UBITId](#)s in alphabetic order, in the former case.) In this directory, place your completed [ObserverPatternExample.java](#). Compress the directory and submit the compressed file using the [submit_cse522](#) command. Only one submission per team is required.

End of Assignment 4 - Part 2