Assignment 2

In each of the following situations, use combinations of GoF and GoV patterns to achieve the goals stated. In each case, provide a brief discussion on the potential deficiencies of your proposed solution:

- In a distributed interactive system, data is located in a central data store, and multiple views of the data are simultaneously provided to different users. Complex data processing and presentation services, which are distributed on multiple servers, are provided to the users in a location-transparent manner. Administrators should be able to dynamically limit the access to certain data, and the limitations should be immediately applied to the views corresponding to those data; these changes may even result in the closing of a view (window). The goal is to design the system so that while satisfying the above requirements, coupling among system components is reduced to the point where the system and its processing/presentation services can be easily extended.

- A critical system consists of subsystems which interact with each other. The security of the system and its subsystems is of utmost importance, and in order to ensure security, the whole system and each of its subsystems should be protected. It is also necessary to monitor the interactions among the subsystems. Security methods impose a heavy load on system resources and slow down the system; hence, they are not applied at the same level all the time: Application of these methods (on the system as a whole, on each subsystem, and on the interactions among subsystems) depends on the desired level of security and the current level of risk. The goal is to design the system so that the desired level of security is provided, while system resources are used sparingly.

- Study Chapter 4 of the POSA book (available on the course webpage). Then study: http://c2.com/cgi/wiki?JavaIdioms, and briefly introduce two Java idioms that you have used in programming without knowing that they are actually idioms.