Assignment 2

1. 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 given distributed system, subsystems interact in a complex and uncontrolled fashion. The goal is to design the system so that access to some of the services of each subsystem can be restricted dynamically (for a certain subset of its clients). These restrictions should be continuously reconsidered and reapplied at runtime, based on the status of the system (as to workload distribution) and the history of problematic accesses (e.g., erroneous service requests).

- A number of subsystems interact with a common subsystem in a complex fashion. Providing security to the common subsystem has become important. Security methods are complex, and impose a heavy load on system resources; hence, they are not applied at the same level all the time. The level of security depends on administrator settings and the level of risk encountered. The goal is to design the system so that the common subsystem is provided with adequate security at all times, while system resources are used sparingly.

2. Study Chapter 4 of the POSA book (available on the course webpage). Then study: http://en.wikibooks.org/wiki/More_C%2B%2B_Idioms/Print_Version, and briefly introduce two C++ idioms that you have used in programming without knowing that they are actually idioms.