İTÜ
Computer Engineering Department
Assoc.Prof. Feza BUZLUCA
http://akademi.itu.edu.tr/en/buzluca/

26.04.2021

Object Oriented Modeling and Design 4th Assignment
Design with GoF 1

Problem:

Suppose that we design a "student automation system". Consider the following requirements.

- We add the send() method to the Student class that will send information contained in a :Student object (name, ID, grades for courses, etc.) to the remote system.
- There are currently two remote computer systems (A and B) with different interfaces.
- Depending on their attributes (such as registration year, department) some students are sent to the system A, while others are sent to the system B.
- In the future, another remote system C may be added to the automation system, or one of the existing systems may be discarded.
- Different remote systems may receive different information about students. For example, A receives only the name and ID, B receives ID and grades for courses. Later, C may receive all attributes of students.

The incomplete program oomd2021h4.cpp is given as a hint.

Design the explained part of the system considering stated requirements and problems. Use design principles and GoF design patterns to construct a flexible system.

1. Draw your **design model** as a **UML class diagram**.
2. Complete the given program oomd2021h4.cpp based on your design. Add missing parts to the given program. You may also modify the given program only if necessary.

SUBMISSION:

- Upload the files (class_diagram.pdf and completed program oomd2021h4.cpp) to Ninova until **23.00** on **May 9, 2021, Sunday**.
- **Late submitted assignments are not accepted.** Do not send your solutions by e-mail. We will only accept files that have been uploaded to the official Ninova e-learning system before the deadline. Do not risk leaving your submission to the last few minutes.
- **Cheating** will not be tolerated. Any cheating is subject to the University disciplinary proceedings.
  It is allowed to discuss how to solve a problem with your classmates; however, **this assignment is not a group-homework. The actual solution should be an independent effort**.