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Object-Oriented Modeling and Design 3rd Assignment
Design with GRASP

Problem:
In this assignment, we will design a part of the **student administration system**.

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 a remote (external) system.
- There are currently two remote computer systems (RemoteA and RemoteB) with different interfaces.
- Depending on their attributes (such as registration year and department), some students are sent to RemoteA, while others are sent to RemoteB.
- In the future, another remote system, e.g., RemoteC, may be used, or one of the existing systems may be discarded.
- Different remote systems may receive different information about students. For example, RemoteA receives only the name and ID, RemoteB receives the ID and grades for courses, and later, RemoteC may receive all attributes of students.
- Before their graduation, students' remote systems may change. For example, in the first two years, data from a student can be sent to RemoteA and, in the following years, to RemoteB.

To Do:

1. To solve this problem, a developer writes the program oomd2324h3.cpp. Although this program can compile and run correctly, it is **not appropriately designed**.
   Consider the problems that this design may cause.

   Design the explained part of the system considering stated requirements and problems. Use design principles and GoF design patterns to construct a flexible system. Draw your **design model** as a **UML class diagram**. File: class_diagram.pdf

2. Write a new program oomd2324h3_new.cpp in C++ based on your appropriate design in (1). Add missing parts to the given program. You may also modify the given program only if necessary.

SUBMISSION:

- Upload two files, i.e., class_diagram.pdf and the new program oomd2324h3_new.cpp, to Ninova by **23.00** on **April 30, 2024, Tuesday**.
- **Late submitted assignments are not accepted.** Do not risk leaving your submission to the last few minutes.
- Do not send your solutions by e-mail. We will only accept files uploaded to the official Ninova e-learning system before the deadline.
- **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 group homework. The actual solution should be an independent effort**.