

Programare avansata pe obiecte - Project Requirements

Each student will work on an individual project. It will be presented in stages as detailed below. In order for a project to be graded at any of the stages, it must:

- not have compilation errors
- implement requirements for that stage

Timeline for presenting each stage:

- Stage I: April 1st, 2022
- Stage II: April 29th, 2022
- Stage III: May 27th, 2022

Stage I

Assignment definition

Select a system to be implemented that allows at least 10 actions/queries to be performed on at least 8 types of objects.

Implementation

Implement a project using the Java language that complies to the requirements above.

The application will:

- include simple classes with private/protected attributes and methods
- include at least 2 different collections capable of administering the objects in the application
- use inheritance for some of the classes used within the collections
- at least one service class that exposes the system's operations
- a main class that calls the service's methods

Stage II

Persistent storage

Extend the project from the 1st stage by persisting the data using files:

- CSV files will be used to store at least 4 types of objects from the first stage. Each column in the file is separated with a comma. Example: `name, surname, age`
- Generic singleton services will be created for reading and writing from/to files
- At system startup, the data will be automatically loaded from the files.

Auditing

An auditing service will need to be created that will log to a CSV file each time an action from the first stage is performed. Structure of the file: `name_of_action,timestamp`.

Stage III

Database persistence

Replace the services created in the second stage with others that use JDBC to store the data in a database of your choosing.

A service will be created that will expose create/read/update/delete operations for at least 4 of the defined classes.

Topic Suggestions

- catalog (student, subject, professor)
- library (sections, books, authors, readers)
- medical office scheduling system (client, medic, appointment)
- store produce management (category, produce, distributors)
- banking application (accounts, bank statements, transactions, cards, services)
- e-learning platform (courses, users, applications, quizzes)
- auctioning system (auction, bids, items, users)
- food delivery platform (venues, orders, deliveries, users)
- book lending system (partners, users, books)
- e-ticketing platform (events, venues, clients)