

# Advanced programming on objects - project (232)

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Each student will work on an individual project. The project is structured in several stages.  
The project scoring condition: not to present compilation errors and to implement the given requirements.

Delivery deadlines:

- Stage I: week 8 - 12 April 2024
- Stage II: week 27 – 31 May 2024

## Stage I

### 1) System definition

Create a list based on the chosen theme with at least 10 actions/queries (Example actions: updating personal data, creating a card, balance inquiry, bank transfer, ...) that can be done within the system and a list with at least 8 types of objects (Example entities: user, account, debit account, savings account, transaction, ...)

### 2) Implementation

To implement in the Java language an application based on those defined in the first point.

The application will contain:

- simple classes with private / protected attributes and access methods
- at least 2 different collections capable of managing previously defined objects (eg: List, Set, Map, etc.) of which at least one must be sorted – uni-/two-dimensional arrays will be used in case the collections are not traversed until the date of the checkpoint
- use inheritance to create additional classes and use them within collections;
- at least one service class to expose system operations
- a Main class from which calls to services are made

## Stage II

### 1) Extend the project from the first stage by implementing persistence using a relational database and JDBC.

Create services that expose create, read, update and delete operations for at least 4 of the defined classes. Generic singleton services will be made for writing and reading from the database.

### 2) Realization of an audit service

A service will be created to write to a CSV file every time one of the actions described in the first step is executed. File structure: action\_name, times

## Suggested themes

1. catalog (student, subject, teacher)
2. the library (sections, books, authors, readers)
3. medical office appointment (client, doctor, appointment)
4. store stock management (categories, products, distributors)
5. banking application (accounts, account statement, transactions, cards, services)
6. e-learning platform (courses, users, learners, quizzes)
7. auction system (auctions, bids, products, users)
8. food delivery platform (premises, orders, drivers, users)
9. book loan platform - bookster type (affiliated companies, users, books)
10. e-ticketing platform (events, locations, customers)
11. the structure of an organization (employees, hierarchical relationships, salaries)
12. admission (candidate, faculty, exam)
13. credits (customer, credit, installments)
14. currency exchange house activity (currencies, rate history, customer, transactions)
15. transport company activity (cities, cars, routes, links)