Programare avansata pe obiecte - proiect (231)

Butan Silvia
silvia.butan@endava.com
butan.silvia@gmail.com

Each student will work on a chosen project. There will be several checkpoints for the project during the labs sessions.

Project scoring condition:

- No compilation errors present
- Implement the given requirements

Deadlines:
- **1st Checkpoint:** 2nd april 2020
- **2nd Checkpoint**: 26th april 2020

1st Checkpoint:

1. **Modeling the system:**

    a. Define a list based on the chosen project containing minimum 10 possible actions within the system and a list with at least 8 types of objects within the system.

2. **Implementation:**

    a. Implement in Java an application based on the requirements defined in the first point. The application will contain:

        i. Simple classes with private/protected attributes and accessors/mutators

        ii. At least 2 different collections capable of handling previously defined objects (eg: List, Set, Map, etc.) of which at least one is sorted - *one-dimensional / two-dimensional arrays will be used if the collections are not covered during lab sessions until the checkpoint.*

        iii. Use inheritance to create additional classes and then use them in collections;

        iv. At least one service class that exposes the system's operations

        v. A main class used to make calls to the service

2nd Checkpoint:

1. **Extend the project implemented for the 1st Checkpoint to use file-based persistence (*see Lab 6*):**

    a. CSV files will be created for at least 4 of the classes defined in the first checkpoint;

       i. Each column in the file is separated by a comma. Eg: *name, surname, age*

    b. Implement generic singleton services for writing and reading from files (*see Lab 5 and Lab 6*);

    c. When starting the app, the data from the files will be loaded using the services created;

2. **Implement an audit service;**

    a. Design a service that writes to a CSV file every time when

       i. One of the actions described in the first checkpoint is executed; File structure: *action_name, timestamp.*

Suggested projects:

1. Structure of an organization (employees, hierarchical relationships, salaries)
2. Appointments diary (categories, meetings, tasks)
3. The activity of a transport company (cities, connections, cars, routes)
4. Loans (customer, credit, installments)
5. Medical office (patients, doctors, prescriptions)
6. Admission (candidate, faculty, exam)
7. Online ticket sales (client, event, location)
8. Cash register software (payment method, customer, product)
9. Reservation app (show, place, guests)
10. Exchange services (currencies, exchange rate history, customers, transactions)
11. File management system (users, file type, group, user type)