Mandatory assignment 2
Databases for Developers

Continue with the implementation of the final project. You have designed a relational database that will store the data needed for your online application. Now implement the backend application and connect it to the database.

You can use the Postman or Swagger UI to simulate the frontend (web client). Your application should define RESTful endpoints (REST APIs) or GraphQL for HTTP communication.

The goal is to:

- Create a backend that will connect to your relational database.
- Functionality:
    - CRUD (Create, Read, Update, Delete).
    - Login/logout – authentication and authorization (for example admin and normal user)
    - The rest of the functionality depends on your business model
- Use an ORM (Object Relationship Mapping) tool to map the database to your application – for example Hibernate, Entity Framework, Sequelize, etc.
- You can also try native queries.
- Implement some security measures:
    - users and privileges
    - prevent the possibility of SQL injection.
    - database backups
- Continue with writing the report that you have from the 1st assignment. Now cover the parts that you did in this assignment.
- Create a migrator app that will do a one-time migration of the data from SQL database into MongoDB and Neo4j. For this, you need to have the designs for your MongoDB and Neo4j databases. The migrator will query all the data from your SQL database, map them to the MongoDB or Neo4j structure and store them in those databases.

Artifacts

- SQL scripts for creation of users and privileges.
- The source code of the CRUD application - as a link to an external public code repository (like GitHub).
- The source code of the migrator application.
- A brief installation procedure that specifies how to organize the code and import the database in a test environment with full operational capabilities.
- Report:

- Extend the report from the 1st assignment so that it contains the description of the newly added features, especially the application. Follow the report structure described in the final project description. If you have made changes to the database design, you should describe it in the report. It is acceptable if some requirements are not fully implemented as the project will continue. In that case you should describe your ideas about how you are going to do the missing parts later.

Delivery

Hand in to the itsLearning before the deadline.