SOEN 387: WebBased Enterprise Applications Design

Assignment 2

Due Date: Friday November 11, 2022 by 23:59

Introduction

The main objective of this assignment is to implement a web application using JSP with focus on implementing Data Source Architectural Patterns.

Requirements

In your project you must consider the following requirements:

1. **Concurrency**: The server must handle multiple concurrent clients (connections) and respond to each and every client requesting service. Your design must prevent any concurrency issues such as inconsistent reads, lost updates, deadlocks and guarantees atomicity, consistency, isolation and durability for each transactions.

2. **Use Object Oriented Methodology**: You must use Object Oriented methodology in your design. In this assignment you must implement the following gateway patterns:

   - Table Data Gateway: usually consisting of several find methods to get data from the database and update, insert, and delete methods.

   - Row Table Gateway : acts as an object that exactly mimics a single record, such as one database row.

   - Data Mapper : moves data between objects and a database while keeping them independent of each other and the mapper itself.

Each team must use GitHub or an alternative source control during development phase. Using a source control software is mandatory.

Report

As part of the submission, you must write a report that includes presentation and discussion of your design. In your report you must present the following :
- The Use-Case Diagram of the system;
- The Class Diagram of the system (illustrating the classes and associations in the business layer as well as the data access layer);
- The Entity Relationship Model in the form ERD or a UML diagram;
- Sequence Diagram for the scenario when a student adds a course, show all classes involved.
- Sequence Diagram for the scenario when an administrator creates a course, show all classes involved.

Assignment Submission

You are allowed to work on a team of 4 students at most (including yourself). Each team should designate a leader who will submit the assignment electronically on Moodle. ONLY one copy of the assignment is to be submitted by the team leader. Upon submission, you must book an appointment with the marker team and demo the assignment. All members of the team must be present during the demo to receive the credit. Failure to do so may result in zero credit. This is an assessment exercise. You may not seek any assistance from others while expecting to receive credit. You must work strictly within your team). Failure to do so will result in penalties or no credit.

You need to submit:

The report in pdf format in addition to the code. For you submission create one zip file, containing all needed files for your assignment and submit electronically on Moodle based on the instruction given by your instructor as indicated above: https://moodle.concordia.ca

Submission Due date is: **Friday November 11, 2022 by 23:59**. .

Grading Scheme

The assignment is graded based on the following rubric:

CATEGORY	very Poor(1)	Poor(2)	Good(3)	Very Good(4)	Exceptional(5)
Presentation Layer(**client side**)	User interface does not work	User interface is poorly formatted and/or Javascript code is poorly design	User interface is formatted and the Javscript is designed but improvements are needed	User interface is well formatted and the Javscript is well designed	Exceptional clinet side
Business Logic (*Student*)	None of the business logic requirements related to the user *Student* are implemented	Implemented but with major improvements needed	Implemented but with minor improvements needed .	Implemented as per the requirements	Exceptional Business logic design
Business Logic (*Administrator*)	None of the business logic requirements related to the user *Administrator* are implemented	Implemented but with major improvements needed	Implemented but with minor improvements needed .	Implemented as per the requirements	Exceptional Business logic design
Data Logic (**Tables**)	No Database	Database tables are poorly designed	Database tables are designed but improvements are needed	Database tables are well designed	Exceptional design
Data logic (**SQL**)	No SQL queries	Majority of the SQL queries donot work	SQL queries work but improvements are needed	SQL quaries work as per the requirements	Exceptional SQL code