Assignment Title: Development of an E-Commerce Application using Java Technologies

Course Module: Development of Enterprise Applications (Java Server Pages, Java Classes, and Servlets)

Group Size: Maximum of 10 students

Overview:

This assignment is designed to provide hands-on experience in developing a real-world e-commerce application using Java technologies such as Java Server Pages (JSP), Servlets, and Java classes. The application will interface with a database to manage product inventory, user data, and transaction records. The primary goal is to apply theoretical knowledge acquired in the course to solve practical problems in web application development, emphasizing backend logic, database connectivity, and basic front-end development.

Project Description:

Your group is tasked with developing an e-commerce web application that allows users to browse products, add them to a cart, and make purchases. The application should provide an admin interface for managing product inventory.

Key Features:

User Authentication: Implement user registration, login, and logout functionalities.

Product Catalog: Display available products to users. Each product should have a name, description, price, and category.

Shopping Cart: Allow users to add products to a shopping cart and manage the cart's contents.

Checkout Process: Implement a checkout process that includes order confirmation and user data collection.

Admin Interface: Enable admins to add, update, or delete products, view orders, and manage users.

Technical Requirements:

Frontend: Use JSP for the presentation layer. Focus on functionality over design.

Backend: Use Servlets and Java classes for business logic, handling HTTP requests and responses.

Database: Utilize JDBC to connect to a relational database (e.g., MySQL, PostgreSQL) for storing user data, product information, and orders.

Version Control: A GitHub repository will be created for the project. Each student must commit their contributions daily, with clear commit messages describing the changes.

Instructions:

Divide Roles: Although collaborative understanding is vital, each member should focus on specific aspects like frontend development, backend logic, database management, or documentation to ensure broad learning.

GitHub Workflow:

The team leader will create a GitHub repository and add all team members as collaborators.

Use feature branches for new features or bug fixes, then merge them into the main branch upon completion.

Commit changes daily with meaningful messages that clearly state what has been added or modified.

Documentation: Maintain a project diary within the repository, documenting challenges faced, how they were overcome, and the contributions of each team member.

Presentation: Prepare a brief presentation showcasing your application's functionality, architecture, and what each team member contributed.

Submission Details:

Deadline: 1st May 2024

Submission Link: A link to your GitHub repository should be submitted through the course's learning management system (LMS).

Presentation Date: To be announced.

Evaluation Criteria:

Functionality: How well does the application work?

Code Quality: Clarity, structure, and adherence to Java best practices.

Teamwork and Individual Contribution: Active participation and contribution tracked through GitHub commits.

Documentation and Presentation: Clarity in documentation and effective demonstration of the project.

This assignment will not only test your technical skills but also your ability to work as part of a team. It's a great opportunity to demonstrate creativity and problem-solving abilities. Good luck!