

Problem Statement-2

Develop a restaurant billing website using Java Servlets and Java Server Pages (JSP) to streamline the ordering and billing process for restaurant customers. The aim is to create an interactive platform where customers can view the menu, place orders, and generate bills seamlessly.

Key Requirements:

User Interface:

- Design an intuitive and visually appealing user interface using JSP for displaying the restaurant's menu, order details, and billing information.
- Implement interactive features for adding/removing items from the cart and customizing order quantities.

Functionality:

Customers should be able to:

- View the restaurant's menu categorized by appetizers, mains, desserts, beverages, etc.
- Select items from the menu and add them to their order cart.
- Customize order quantities and special instructions (e.g., spice level, allergies).
- Review and modify the order before finalizing.
- Proceed to generate a bill with a summary of items, quantities, and total cost.
- Optionally, provide a guest checkout option without requiring user registration.

Data Management:

- Use Servlets to manage HTTP requests and responses.
- Implement JDBC (Java Database Connectivity) to interact with a database (e.g., MySQL) for storing menu items, order details, and customer information.

Session Management:

- Implement session management to maintain user-specific data across multiple pages (e.g., user's cart items).

Security:

- Implement basic security measures such as input validation and protection against SQL injection attacks.
- Ensure sensitive customer information (e.g., passwords) is securely stored in the database.

Admin Panel:

- Create an administrative panel accessible only to authorized personnel (e.g., restaurant staff).
- Allow staff to update the menu (add, edit, remove items), manage orders, and generate reports (e.g., sales reports).

Error Handling and Validation:

- Validate user inputs to prevent errors and ensure data integrity.
- Display appropriate error messages and notifications to users when necessary.

Deliverables:

- Complete source code of the restaurant billing website, structured into packages and classes.
- Database schema design and SQL scripts for setting up the necessary tables.
- Detailed documentation covering system architecture, database schema, setup instructions, and usage guidelines.