Fatoumata Kamara

CIS 344

Final project

As a computer Information systems student exploring web development through this class, I recently attempted to complete a restaurant reservation management system that integrates multiple technologies to create a functional, user-friendly web application. The project served as a practical exercise in understanding full-stack web development principles, database management, and user interface design.

The base of the application relies on PHP for server-side processing and MySQL for database management, creating a solid backend infrastructure. By implementing a structured approach to data handling, the system allows restaurants to efficiently manage customer reservations. The application follows a simple design, separating concerns between database interactions, business logic, and user interface - a fundamental principle in software development.

Key technical components include a Restaurant Database class that manages database connections and operations, and a Restaurant Portal class responsible for routing user requests and processing form submissions.

Security was a critical consideration in the development process. I implemented prepared statements to prevent SQL injection, incorporated input validation, and ensured careful data sanitization. These practices are crucial in developing professional-grade web applications that protect both user and business data.

The project demonstrated several important software development concepts:

- Modular architectural design
- Secure database interactions
- Responsive web design
- User input processing
- Error handling and debugging

The development process was not without its challenges. I struggled significantly with database responsiveness and data retrieval. The most persistent issue was ensuring that reservation data would populate in the view - a problem that required long hours, extensive debugging and careful examination of database connection parameters, SQL queries, and error handling mechanisms. There were many moments of frustration where the database

kept failing, with no clear indication of why reservations weren't being displayed, forcing me to implement detailed error logging and systematically troubleshoot each component of the database interaction. Unfortunately, in the end I still was not able to resolve this issue.

This project was more than just a coding exercise; it was a practical exploration of how different web technologies can work together to create a functional, user-friendly application. It reinforced the importance of thoughtful design, security considerations, and the iterative nature of software development. Projects like these offer hands-on experience in practical, real-world solutions. They highlight the complexity and creativity involved in modern web application development.