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Module 4 Part 2 Summary

In this module, I worked on creating a login and authentication system using PHP and PostgreSQL and troubleshooting issues that arose during the process. The project began with designing two key files: authentication.php for handling user authentication and db_config.php for securely storing database credentials. Separating these components showed me the importance of modular code design, simplifying management, and enhancing security. The db_config.php file centralized sensitive connection details like the hostname, port, database name, username, and password, making it easier to maintain and debug.

In authentication.php, I also established a database connection with PostgreSQL using pg_connect and validated user login credentials through pg_query_params, a technique that prevents SQL injection. Incorporating PHP's password_verify function for password hashing further strengthened my understanding of secure authentication practices. Additionally, I added logout functionality using a query parameter (?logout=true), allowing users to end their sessions securely. Upon successful login, a personalized welcome message and a logout link were programmed to display, which will enhance the user experience.

One of my most significant challenges was resolving an error when attempting to serve the authentication.php file. The error, "Warning: session_start(): open(C:\xampp\tmp\sess_xxx, O_RDWR) failed: Permission denied (13)," highlighted a permission issue with the session directory (C:\xampp\tmp). The error persisted despite multiple attempts to fix the permissions on the folder. To ensure the issue wasn't related to the PostgreSQL connection, I created a test.php file. This file isolated the database connection logic and confirmed that PostgreSQL was

functioning correctly. I tried reinstalling Xampp, but that did not work. I also tried creating an entirely new session folder, which did not work. Overall, I am disappointed that I could not figure out how to get it to work, and I hope to receive partial credit and get some answers as to what I was doing wrong.