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Reflection

Throughout the development of my final project, PuzzleHub, one of the most challenging aspects was building a system that could generalize across a variety of games. Each puzzle—whether it was Wordle, Sudoku, or Minesweeper—had its own logic, UI needs, and validation patterns. I had to carefully architect a flexible game loader that could support different rule sets while maintaining a consistent user experience. This pushed me to think modularly and reuse components when possible, which in turn sharpened my understanding of frontend architecture. I leaned heavily on the course's starter files and templates, which gave me a strong foundation for structuring the frontend and backend. In-person office hours were also incredibly helpful, especially when I was troubleshooting tricky MySQL connection errors. While I was able to implement the core games, there were a few features I had initially planned but didn't have time to complete. For instance, I hoped to integrate a custom NYT-style crossword builder I had created in a side project, as well as a Minesweeper solver. Both of these ideas required more backend logic than I could fit into the project timeline. Their absence left a gap I would have loved to fill, but also reminded me of the importance of scoping and prioritizing deliverables in project planning. If I had one more week, I would add features that enhance user engagement and usability. A leaderboard for each game based on time or

accuracy would add a competitive element. I'd also like to implement a dark mode toggle and refine the UI interactions to make switching between games feel more intuitive.

Expanding the game library and adding more solvers would push PuzzleHub closer to the vision I had at the outset. The most rewarding part of the project was seeing everything come together—watching static HTML and CSS evolve into an interactive hub of puzzles, complete with backend integration and stateful logic. I was extremely proud of being able to load in-progress games. Debugging dynamic rendering issues and finally seeing everything function correctly was an especially gratifying moment, reaffirming why I enjoy full-stack development. The checkpoints provided throughout the quarter were instrumental in keeping me on track. By breaking the project down into stages—proposal, wireframes, UI implementation, and backend integration—I was able to approach the work in manageable chunks. This structure prevented the project from becoming overwhelming and made each milestone feel like tangible progress. To future students tackling the final project, I'd emphasize starting early. Even small actions like creating wireframes or stubbing out component files can provide momentum. It's also crucial to test backend components early on—errors become harder to fix once the frontend is complete. Tools like nodemon streamline development, and organizing your code modularly makes debugging significantly easier. And always double-check your SQL schemas! Overall, PuzzleHub was a fulfilling and educational experience. It pushed me technically and creatively, and I'm proud of how far the project came.