Reflective Essay

What was the most difficult aspect of this course in general, and what was the most difficult aspect of team projects?

The most difficult component of this course was the accelerated timeline. Due to the shortened semester, our team had approximately six to seven weeks to develop a complete project. While this pace was intense, it also felt empowering. The rapid development cycle pushed me to adapt quickly, prioritize effectively, and return to tasks promptly.

Analyze your work on the group design project and reflect on the issues that your project confronted. Discuss how you would approach teamwork if you had another semester to work on the project.

The most challenging aspect of the group work was maintaining consistency in naming conventions and coding standards while balancing the varying levels of knowledge within the group. Coordinating schedules and merging updates without conflicts required constant communication and clarification of needs and intentions.

With another semester to work on the project, I would start with a reverse-engineering mindset of a much larger project, intentionally reflecting on the skills of the team members and encouraging self-study to fill any noted gaps. I would also apply the needed design and mapping strategies from the beginning.

Describe the technical challenges you encountered in the development of your software product.

One major technical challenge was transitioning from HTML/CSS to React for front-end development. Learning React's component-based architecture while managing state and props was initially overwhelming. Additionally, identifying and configuring the correct dependencies to support required features took time and effort. Debugging these integration issues required patience and collaborative problem-solving.

What topics do you feel should be covered in a prerequisite course for this course?

- Design principles (UML diagrams, architecture patterns)
- Front-end development

- Back-end development

Describe how the software engineering techniques you learned in this course helped you address those challenges.

Agile methodology, particularly iterative development and sprint planning, helped us stay organized and deliver incremental progress. Version control with Git allowed us to manage changes effectively, and UML diagrams aided in visualizing system design.

Which techniques were the most useful to your group and why?

Agile methodology was the most useful technique. It provided a framework for managing scope and prioritizing tasks in a fast-paced environment.

Which techniques were the least useful to your group and why?

Some formal documentation templates felt repetitive for our small team and tight timeline. While useful in theory, they consumed time that could have been spent coding.

Based on your experience, do you think it is better to work on an already defined project (not necessarily continuing the work of a past group), or to define your own new project? Explain your answer.

I believe building a brand-new project is more rewarding than extending an existing one. Creating something from scratch requires full-scope thinking, from ideation and planning to execution. This process enhances problem-solving, attention to detail, and adaptability as you encounter real-world constraints and need to refactor code for evolving requirements.

What challenges did you individually experience by working on a software project as part of a team?

- Coordinating schedules and task assignments among team members

- Integrating code changes and resolving merge conflicts
- Maintaining consistency in shared files

What benefits did you individually experience by working on a software project as part of a team?

- The ability to design, develop, and see functional outcomes with others who share the same goal
- Brainstorming approaches and optimizing outcomes
- Receiving feedback and assistance with debugging, corrections, and skill-sharing

Describe what other knowledge you feel might have helped you with the project development. Overall, how did the course meet your needs or fall short?

Having functional links, as well as consistency in project instructions and expectations, would have been helpful.

Discuss topics covered that helped or did not help in advancing your knowledge of software development.

Having the textbook was very helpful, especially prior reports. Overall, the course met my expectations by offering practical exposure to software development practices and real-world collaboration challenges. The textbook and prior project reports were extremely helpful in understanding both theory and application. However, a more structured introduction to design patterns and their application before needing to use them would have significantly enhanced the learning experience.