# CS 250 Final Project

## Sprint Review and Retrospective Report

**Applying Roles in Scrum-Agile Development**

In the SNHU Travel project, the application of Scrum roles—Scrum Master, Product Owner, and Development Team—was pivotal in ensuring project success. Although this was an individual assignment, I assumed all three roles during the development process, experiencing firsthand the multifaceted responsibilities required for a successful Scrum implementation.

As Scrum Master, I was responsible for managing the sprint framework, removing potential roadblocks, and ensuring each development cycle adhered to Scrum values. I maintained consistent timeboxing of sprints and simulated daily stand-ups through scheduled checkpoints in my workflow. This self-enforced routine helped keep the project on track and focused.

As Product Owner, I gathered and analyzed user requirements, prioritized backlog items, and made strategic decisions about feature implementation based on business value. The user stories were based on realistic client scenarios, such as "As a traveler, I want to search for packages based on price and destination so I can find the best deal."

Finally, as the Development Team, I implemented and tested the features incrementally. The application was built using modular design principles, applying the SDLC (Software Development Life Cycle) in an Agile setting, from planning to testing and review.

According to Schwaber and Sutherland (2020), Scrum roles are deliberately lightweight but powerful when effectively practiced. By assuming all three roles, I gained deep insight into the full Scrum framework and the discipline needed to succeed in an Agile software engineering project.

**Completing User Stories and Project Iteration**

Each sprint began with clear sprint goals and planning, guided by the product backlog. I employed user stories as the fundamental unit of work. This Agile practice allowed me to deconstruct larger goals into specific, testable pieces of functionality. For example:

* User Story: “As a traveler, I want to view package details so I can make an informed decision.”
* Tasks: Design package detail UI → Implement backend retrieval logic → Link database query to UI.

Breaking stories into granular tasks made development more predictable and manageable. During each sprint, I focused on completing user stories that delivered tangible business value.

At the end of each sprint, I conducted a Sprint Review, evaluating whether the sprint goal was achieved. I used a personal checklist that mirrored team demo meetings—reviewing whether acceptance criteria were met and features worked as intended. A Retrospective followed, in which I reflected on what went well and what needed improvement.

This inspect-and-adapt cycle was invaluable. For instance, during Sprint 2, I realized my initial time estimates were too optimistic. I adjusted my planning process for Sprint 3 by applying planning poker–style estimation to better anticipate complexity (Cohn, 2005). This resulted in improved delivery timelines and reduced stress.

**Responding to Interruptions and Changes**

Even in an individual setting, I encountered unexpected interruptions that tested my agility. One such example occurred when the design for the package filtering system proved too complex for my initial approach. Originally, I planned a multi-criteria filtering method, but the logic became overly nested and hard to debug.

In true Agile spirit, I paused development and reevaluated the user story. I created a simplified version of the filter, focusing on one key criterion (price range), and planned enhancements for future sprints. This mirrors how Agile teams respond to changing requirements or blockers: by adapting while preserving sprint integrity.

This experience highlighted the flexibility of the Scrum framework. By embracing change and focusing on delivering a minimum viable product (MVP), I continued moving forward rather than stalling. The Agile Manifesto promotes “responding to change over following a plan,” which I directly applied (Beck et al., 2001).

**Communication Simulation and Documentation**

Although I worked solo, I emulated Agile communication practices through documentation and task tracking. I created a personal Kanban board using Trello to simulate sprint boards. Each task was logged, moved across columns (To Do → In Progress → Done), and annotated with blockers or notes.

I also maintained a Development Journal, where I wrote daily notes simulating Scrum stand-ups:

* What did I do yesterday?
* What will I do today?
* What is blocking me?

This practice kept me aligned with my sprint goals and highlighted recurring issues, such as overcommitting or poor time estimation. Had this been a team project, these notes would’ve served as an excellent communication tool for team transparency.

Documentation also helped during the sprint retrospective. For instance, reviewing my Sprint 1 journal revealed that unclear acceptance criteria caused rework. In Sprint 2, I made sure to define “done” more precisely, which led to more stable features and fewer bugs.

Use of Organizational Tools

To simulate a professional Agile workflow, I used the following tools:

* Trello: For Kanban-style sprint board and task tracking.
* GitHub: For version control, issue tracking, and managing commits by sprint cycle.
* Google Docs: For requirements documentation, sprint planning logs, and retrospective notes.

The combination of these tools provided a realistic approximation of a professional Agile work environment. It also reinforced key Agile principles such as transparency, traceability, and iterative feedback (Highsmith, 2009).

Burndown charts created in Trello (via extensions) gave me a visual understanding of sprint velocity and helped ensure I wasn’t accumulating technical debt or falling behind.

**Evaluating the Agile Process**

In hindsight, implementing Agile with Scrum was instrumental in the successful completion of the SNHU Travel application. The following are the most significant insights:

Benefits:

* Incremental delivery allowed me to focus on building one working feature at a time.
* Timeboxing sprints ensured a sustainable pace and prevented over-engineering.
* Sprint retrospectives encouraged me to reflect and improve with each cycle.
* Adaptability to change reduced frustration when facing technical issues or shifting priorities.

Challenges:

* Assuming all roles alone required significant discipline and structure.
* Planning and estimating were difficult without peer input or review.
* Without a team, real-time feedback was simulated rather than organic.

Despite these limitations, I strongly believe that Agile was the ideal approach for this project. Waterfall would not have provided the same level of adaptability, especially when unforeseen changes arose.

The project not only allowed me to build a solid software product but also deepened my appreciation of Agile as a mindset—not just a process. As stated by Sutherland (2014), “Scrum is not a methodology; it’s a framework for learning how to develop.”

**Conclusion**

The Sprint Review and Retrospective process in the SNHU Travel project reinforced the power of Agile in real-world software engineering. By experiencing the roles of Scrum Master, Product Owner, and Developer simultaneously, I developed a deeper understanding of how to deliver customer value iteratively and adaptively.

The combination of user story–driven development, structured retrospectives, and real-time problem-solving shaped a productive and fulfilling development experience. I leave this project better prepared to work in real Scrum teams and more confident in my ability to handle evolving client needs through agility and resilience.

### References

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