7-1 Final Project Submission

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Software Development Lifecycle

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## Abstract

ChadaTech shifts the software development methodology from traditional waterfall to agile. The purpose is to have an iterative software development methodology with visible progress every iteration. We will start using agile methods in SNHU Travel application development. This document serves as an overview of our approach, benefits, and teams.

## Roles

The scrum team contains different roles. Each team has its responsibility to move the project forward. The different teams are the Product Owner, Scrum Master, Tester, and Developer.

### Scrum Master

The scrum master acts as the bridge between the development team and the product owner. Here the development team means the tester, developer, and any others who are actively participating in development, testing, and DevOps. The major responsibilities of the scrum master include facilitating the daily standup, working with the product owner in the preparation of the backlog refinement, and facilitating the sprint review, and retrospective meetings. For the SNHU Travel project, our scrum master has been a great help in filling the gap between the product owner and the development team. Moreover, scrum master has been a great help in time limiting the daily standup. The developer and tester always go to the scrum master whenever they are not clear with the user story or have any questions with the product owner and have gotten their questions answered.

### Product Owner

The product owner is responsible for maximizing the product value. They have a great understanding of the client’s requirements and priorities. The important task of the product owner is to make sure the backlog items make sense to the development team, and they can start writing the software or test cases with it. They are the one who has a direct connection with the stakeholders, and it is essential for them to understand the stakeholders’ needs and wants. For SNHU Travel, the product owner played an important role in understanding the requirements and briefing the scrum master. Whenever there are requirement changes, it is important for the product owner to be transparent with the team. Our product owner has been transparent and met with the team to brief them about it.

### Tester

As agile seeks the active participation of each team member, testers are involved from the very beginning of agile software development. With the test-driven development (TDD), the SNHU Travel testers have already prepared the different test cases based on the user stories so far. They are involved in the backlog refinement meeting to assign the proper story points. The agile approach has motivated them and allowed them to freely communicate with the team whenever there is doubt in the user stories. With the test cases already in place, it is easier for them to execute them whenever the user story is completed by the developer. The agile methodology has allowed them to iteratively update the test cases based on the changes in user stories or create new user stories based on the new feature request. Moreover, our testers are also looking into automated testing and researching the selenium framework.

### Developer

The developer uses user stories to write the software code. It is important for them to understand the requirements thoroughly. In case there is a doubt, they can raise their concern about it with the scrum master or with the product owner. As agile is completely different from the waterfall approach and seeks team collaboration, our developers have worked with testers to understand the defects created by them. They have also communicated with the product owner to gather more fine-grained requirements. The developers play an important role in daily standup to report their progress and share any blockers that can be eventually resolved with team collaboration. As research is also part of a user story, our developers have been able to research different modern frameworks, cloud providers, and tools that can be beneficial for not only this project but also future projects.

## User Story

The user story is the translation of the requirements. They are the fundamental part of agile software development. For SNHU Travel, the product owner had a couple of meetings with stakeholders to thoroughly understand the requirements. The user stories were created and modified based on the stakeholders’ wants. The user stories were a great help for the testers to create their test cases. In fact, each of the test cases is associated with the user story. The detailed acceptance criteria of the user story provide the information to the developers to start writing the code. Developers and teasers have communicated with the product owner and scrum master several times to understand the user story whenever there was confusion. Each user story point is assigned based on the team discussion during the backlog refinement. As agile is an iterative methodology and expects changes, the user story point may be off for the initial few sprints or even for a project. However, it gets improves with experience. The story points of the user story are used for the estimation, which is essential for any successful project.

## Change In Direction

Communication is the key to success in any project. The beauty of agile methodology is it encourages communication and transparency. When there were changes in the requirements as the stakeholders wanted to focus SNHU Travel on wellness and detox travel destinations, the product owner promptly met with the entire team and briefed them about the changes. Obviously, there was some dissatisfaction in the team, but it was not a major change, and the core business idea was still the same. The scrum agile method allowed the team to come together to work with the updated requirements by updating the user stories in the project management tool.

## Effective Communication

**Email from tester:**

Recipient: Product Owner (Christy)

Sample Email:

To: Christy

Subject: User Story Clarifications

Hello Christy,

I like to connect with you regarding the test cases I am writing. I think we are missing the user story related to the user interface. Have we captured the high-level user interface from the client?

Moreover, I want to have a clear picture of the search feature and how it is going to be used. I feel the search is different from the user story 1: top 5 destinations list. Should we have a separate user story for the search?

Please let me know at your earliest convenience.

Regards,

Sulochana Pradhan

Tester

SNHU Development Team

**Effectiveness:**

The email is effective as it is to the point and does not contain unnecessary sentences. The tester has concerns about the user interface and search functionality and wants input from the product owner. The user interface is an important factor for the public website and cannot be ignored. The sooner there are these user stories, the better for the developers too, as they do not need to change the code later.

**Email from the developer:**

Recipient: Product Owner and Tester

Sample Email:

To: Product Owner and Tester

Subject: User Story Clarifications

Hello,

I am looking into the user stories assigned to me. I want to make sure I understand the work item as intended. Here are a few things I want to understand about the few user stories:

User stories: 2 and 4 don’t have full requirements and purpose.

User stories: 1 and 3 story points need to be readjusted as there needs to be done some research. I can schedule a quick meeting about it.

I have asked a question about the responsive UI and device support in the user story, but haven’t gotten a response yet.

Product Owner: Could you please help us resolve the above issues?

Testers: With this iterative approach, we will be communicating with you more frequently via the Project Management tool or our messaging channel. I would suggest you look for the automated emails from our project management tool so that you can know the status of the work item and plan to test accordingly.

Regards,

Sulochana Pradhan

Developer

SNHU Development Team

**Effectiveness:**The email is to the point and has pointed to the user stories, the developer is having concerns. It also attempts to follow up on the last question they asked and is yet to get a response back. Moreover, it prompts the tester to not ignore the automated emails from the project management tool that can be related to status changes of the user story.

## Organizational Tools

The project management tool JIRA has been a tremendous help with our agile approach. It has not only allowed us to use the kanban board to track user stories of the sprint but has also helped in finding the team's performance and helped the team improve in the future through different charts. Moreover, there is no need to separate email communication about the user story status changes as it automatically sends automated emails. More importantly, we have integrated with the Slack messaging tool and GitHub. The team gets Slack notification whenever there is new code changes or changes in their user story.

## Effectiveness of Scrum-Agile approach for the SNHU Travel Project

Overall, the Scrum-agile approach has been a big success for the SNHU Travel project. I agree we had some initial hiccups but we found the right track right after 2 weeks. The team has never been this transparent and everyone is proud of their role in this project. The team has collaboratively come together whenever there was a blocker, requirement changes, or any other issues and was able to resolve them. The daily standup has been so effective in pushing the team altogether and doing something each and every day. The retrospective meeting allowed the team to improve itself and choose right the way the team wants to be. That’s the beauty of agile. There is no hard and fast rule in agile, and each team is different. The best method is determined by the team during the iteration.