

# Software Development Life Cycle: A Retrospective

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Throughout this project we were to develop an application, the ‘SNHU Travel App’, in which the customer had tasked us with specific features to implement. Throughout the project, each role contributed to their unique tasks to develop new features for the ‘SNHU Travel App’. As scrum master I guided my team to refine the backlog, ensure tests were complete at the appropriate time and bring in suggestions either relayed from the product owner or the user stories. To organize the project and help guide the team, we used agile practices as opposed to a waterfall strategy. This ensured that we found bugs on time and did not have to fix the code while sorting through thousands of lines of code. This also allowed us to implement any changes that the product owner might relay any suggestions or changes from the users or customers, if a waterfall approach had been taken whole sections would have had to be re-done if there had been any changes or bugs that prevented operation.

- Applying Roles:

Each role provided their unique specialties to the project that all came together in the end to provide a working product as shown below:

- The Scrum Master

- The scrum master is comparable to a director on a TV or movie set, in which the scrum master would be the director. The scrum master works with the developers and testers to meet the specifications brought to the scrum master by the product owner. The role of a scrum master includes providing protection for the team if any conflict between any of the teams erupts while simultaneously working with and guiding the team to the final product. They ensure what can be done on the sprint, how long it will be, and the strategies to be used during the sprint. The scrum master is a leader and not a dictator that provides guidance and ensures smooth sprints to provide quality features to the product owner. In this specific instance we used strategies such as sprint planning which I would work with the team to plan sprints and sprint strategies to use during sprints throughout a few days to a week. We would also have daily stand-ups to ensure everyone was on the same page, bring up any concerns, and to refine the backlog. After the sprint we would do a sprint retrospective in which anyone brings up any improvements or concerns that may need to be implemented into the next sprint.
- The Product Owner
  - The product owner is the lead visionary of the project and the one that organizes and manages the product backlog the product owner meets with the customers and stakeholders that provide updates for the project and updates the product backlog to represent those updates. The product owner also meets with the scrum master so that the team will stay updated on the backlog and can make any necessary changes ahead of time. Based off my last comparison,

if the scrum master is the director the product owner would be the producer providing all the specifications and going to all necessary meetings related to the product. I chose to focus on three specific user stories to refine during this project that were of varying sizes (small, medium, large) that were a personal profile for the user, a filter for the search section, and the ability to select your vacation type before searching. The product owner then provided an update from the customer to focus on wellness retreats because it was trending. These features would ensure the user enjoyed a smooth and enjoyable experience.

- The Development team
  - The development (or commonly referred to as dev) team is the heart of the operation; they are the ones that provide all the engineering and development of the app features. The development team works on going through the product backlog to translate them into features and code them into the application for final deployment. The dev team works together to communicate any complications or suggestions that the team provides and then presents things such as UML design and pseudocode to convey those suggestions to the scrum master. They also have to be in constant communication with the testers and scrum master so that there is no confusion. The development team were to work on an update provided about wellness retreats. To do this we implemented pictures and updated the search section and profile section to show a slideshow preview of the selected vacations. We also came up with some suggestions for implementing

scalability options for mobile platforms in which we sent an updated UML and some pseudocode to provide an example of what that might look like.

- The Testers
  - The role of the tester is to ensure that the development teams' efforts are functioning well, preventing bugs in future updates and that there are no bugs within the code. To do this they held regular meetings and retrospectives after sprints to ensure the same problems do not happen or that any futures sprints could go more smoothly and efficiently. Sometimes the testers can be part of the development or part of their own team in projects. They also ensure that the final product is functional and up to the standards of the specifications provided in the user stories. In this project we made sure that the icons in the search, profile and home pages were working perfectly while syncing up with the search filters. We suggested a sprint retrospective to bring up problems that had occurred through tests and suggested more information about how to improve these features.
- Completing User Stories:
  - Using agile practices for this project helped the team to ensure that large stories and requested updates can be completed fully and on time. For this we implemented the same large story into two different tasks, in two separate sprints so that the large ominous task can be broken down into two easier and shorter sprints. The agile framework also helped to implement the new features that were brought to the team in the middle of development and allowed the team to pivot to these new features quickly from the data provided

by the testers. The agile framework in this situation made it easy for the team to switch to a new task without any delay, whereas in waterfall it might have been a complete restart in the section or project.

- Handling Interruptions

- The shift in focus to the wellness retreats came as a shock to the team but, due to agile, we were able to shift with no delay. I used daily stand-ups to identify the issues that needed to be addressed due to the change while also getting clarification and changing the order of the backlog from the product owner to ensure the focus change. Agile allowed for rapid adaption to the shift. This helped avoid wasting any work with organization and communication. If the team had been using the waterfall method, it might have resulted in a costly re-planning strategy.

- Communication

- The most important part of the agile method in my opinion is the ability to successfully establish a communication line throughout the team. This keeps everyone on the same page and avoids confusion between shifts in focus, added features, or possible bugs. If communication is not used properly and efficiently agile will surely fail as it is the heart of the agile process. To address this, it was brought up in daily stand-ups and implemented JIRA, a scrum tracking tool that helps organize sprints and alerts the team to changes, to help the team stay up to date and on topic in sprints. JIRA helps to visualize the progress the team is making and helps to organize the data of the sprint

allowing for better workflow and the need for spreadsheets and helping the team stay on track.

- Organizational Tools

- As mentioned before, we used Jira to help communication within the team and during sprints. This software is helpful in organizing the teams' sprints, meetings and workflows. When used by the product owner it helps to prioritize user stories and assign deadlines while updating and acceptance criteria in the backlogs, this ensures a clear visible way for the teams to see any updates or important changes from the product owner. It is also great in planning for sprints as the scrum master can assign stories to developers or testers and is able to see progress through a drag and drop design replacing spreadsheets. This is also a huge help for the testers as well, any time a line of code is committed it is assigned to a tester right away notifying the tester, this saves time in testing and enables a pipeline of ideas throughout the team. JIRA in this instance was used to help the team communicate effortlessly.

- Evaluating the Agile Process

- Agile helped the team to create a working product where waterfall would have failed. The change in focus to the wellness vacations would have required a complete overhaul with waterfall, due to agile the team was able to adapt on the fly and deliver a functioning product due to the backlog refinement. The pros of agile would include its flexibility and ability to fix bugs quickly with its only cons being extra refinement of the user stories and extra preparation.

This project helped to prove Agiles' flexibility, collaboration abilities, and any interruptions were dealt with appropriately and in a timely manner. The team was able to deliver the new features on time due to the shift in backlogs and further refinements of the backlog catalog and the ability to quickly communicate. For any future updates the team suggests that ChadaTech adopt the agile approach and go through training for all levels especially scrum master training and Jira onboarding classes.