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**CS 250**

**Sprint Review and Retrospective**

**1. Introduction**

This document provides a comprehensive review and retrospective of the work completed during the development process, highlighting how the Scrum-Agile approach facilitated the success of the application for SNHU Travel, a travel agency looking to expand its client base with innovative tools. The Scrum-Agile approach was chosen for its flexibility, iterative development, and emphasis on collaboration, which was crucial for accommodating the evolving requirements of the SNHU Travel project.

**2. Applying Roles**

The success of the SNHU Travel project was largely due to the effective collaboration and specific contributions of each role within the Scrum-Agile Team.

* **Scrum Master (SM):** The Scrum Master facilitated all Scrum ceremonies, including Sprint Planning, Daily Stand-ups, Sprint Reviews, and Retrospectives. By removing impediments and ensuring that the team adhered to Scrum practices, the Scrum Master maintained a smooth workflow. During a sprint, the team encountered a delay due to an integration issue. The Scrum Master quickly organized a meeting with the stakeholders to address and resolve the issue, minimizing downtime and keeping the sprint on track.
* **Product Owner (PO):** The Product Owner managed the product backlog, prioritized user stories, and ensured that the features developed aligned with the client's vision and requirements. In one instance, the Product Owner received new client feedback requesting a feature to compare hotel prices. The PO prioritized this user story and communicated its importance to the team, ensuring it was included in the next sprint.
* **Business Analyst (BA):** The Business Analyst worked closely with the Product Owner to gather and refine requirements, ensuring that user stories were well-defined and that acceptance criteria were clear. The BA conducted a series of interviews with the client to gather detailed requirements for the booking system. This helped the Development Team understand the business needs and build a solution that met the client's expectations.
* **Development Team (Developers):** The Development Team, consisting of cross-functional members, was responsible for coding, unit testing, and delivering increments of the product. The developers worked collaboratively on the flight booking module, breaking down the user story into smaller tasks and completing them within the sprint. Their continuous integration and testing practices ensured that the module was functional and met the defined acceptance criteria.
* **Quality Assurance (QA):** The QA team focused on testing the developed features to ensure they were bug-free and met the quality standards. Before the end of each sprint, the QA team conducted thorough testing of the new features, including regression tests. They identified and reported several critical issues, which were promptly fixed by the developers, ensuring a stable and high-quality product release.

**3. Completing User Stories**

**Sprint Planning and User Story Breakdown:** During each Sprint Planning session, the team worked together to break down user stories into smaller, manageable tasks. This collaborative effort ensured that everyone understood the requirements and scope of each user story.

**Daily Stand-ups and Progress Tracking:** Daily Stand-ups provided a platform for team members to discuss their progress, share updates, and address any impediments. This constant communication kept everyone aligned and focused on the sprint goals. During one stand-up, a developer mentioned difficulty with the API integration task for the flight booking feature. The team quickly brainstormed and provided solutions, allowing the developer to overcome the challenge and proceed with the implementation. This real-time problem-solving approach ensured that tasks were completed on schedule.

**Incremental Development and Continuous Feedback:** The iterative nature of Agile allowed the team to develop and deliver small increments of the product, which were reviewed and tested continuously. This approach facilitated regular feedback and adjustments. After completing the first increment of the hotel booking feature, the team conducted a Sprint Review where they demonstrated the functionality to the Product Owner and stakeholders. Feedback received during the review highlighted the need for a more intuitive user interface. The team incorporated this feedback into the next sprint, improving the user experience and ensuring the user story met the client's expectations.

**Sprint Reviews and Adaptation:** Sprint Reviews provided an opportunity for the team to showcase their work and gather valuable feedback from stakeholders. This iterative feedback loop was essential for refining user stories and ensuring they met the project requirements.

**Sprint Retrospectives and Continuous Improvement:** Sprint Retrospectives allowed the team to reflect on their performance, identify areas for improvement, and implement changes to enhance productivity and efficiency. The team noticed during a retrospective that communication gaps were causing delays in user story completion. To address this, they decided to increase the frequency of check-ins and improve their use of collaboration tools like Jira and Slack. This adjustment resulted in more streamlined communication and faster completion of user stories in subsequent sprints.

**4. Handling Interruptions**

**Changing Client Requirements:** Midway through the project, the client requested a major change: adding a new feature for vacation package booking, which was not part of the original scope. The flexibility of the Agile approach enabled us to adapt quickly to the new requirements without derailing the entire project. The team efficiently integrated the vacation package feature into the project plan, completing it within the subsequent sprints.

**Unexpected Technical Challenges:** During the development of the flight booking module, the team encountered unforeseen technical challenges with the third-party API integration, which caused delays.

**Team Member Availability:** At one point, a key developer had to take an unexpected leave, which could have impacted the sprint’s progress. The Scrum Master and the team quickly reassessed the situation during a Daily Stand-up. Tasks assigned to the absent developer were redistributed among the remaining team members based on their skills and availability. Additionally, the team decided to adjust the sprint goals to ensure that critical tasks were prioritized. This flexibility in task allocation and sprint planning allowed us to accommodate the absence without significant delays in project delivery.

**Scope Creep Management:** As the project progressed, there were several additional features suggested by stakeholders, leading to potential scope creep. The Scrum Master and Product Owner worked closely to manage these suggestions by evaluating their impact on the project’s timeline and resources.

**5. Communication**

**Daily Stand-up Meetings:** Each morning, we held a 15-minute Daily Stand-up via Zoom, where every team member shared their progress, plans for the day, and any impediments they faced. This format ensured everyone was aware of each other’s tasks and progress, which facilitated real-time problem-solving and knowledge sharing. It fostered a sense of accountability and kept the team aligned with the sprint goals.

**Slack Channel for Instant Communication:** We used a dedicated Slack channel for instant messaging to address quick questions and updates throughout the day. This immediate and direct form of communication allowed for swift updates and responses, reducing downtime and ensuring that team members could quickly address any urgent matters. It also created a collaborative environment where team members felt comfortable reaching out for help and offering assistance.

**Jira for Task Management:** We used Jira to manage our tasks, track progress, and document user stories, bugs, and sprint retrospectives. Using Jira ensured that all tasks and communications were documented and transparent. This centralized platform allowed team members to see the status of each task, comment, and collaborate effectively. It also provided a clear history of project development, which was helpful for retrospectives and continuous improvement.

**Sprint Retrospective Meetings:** After each sprint, we conducted a Sprint Retrospective to discuss what went well, what could be improved, and actionable steps for the next sprint. Retrospectives promoted an open and honest dialogue about the team’s performance. They encouraged continuous improvement by allowing team members to reflect on their experiences and collaboratively develop strategies to enhance future sprints.

**6. Organization Tools**

**Jira for Task Management and Sprint Planning:** Jira was our primary tool for managing the product backlog, tracking tasks, and monitoring sprint progress. During Sprint Planning, the Product Owner and Development Team used Jira to prioritize the product backlog and break down user stories into manageable tasks. This facilitated clear visibility of tasks, assignees, and deadlines.

**Slack for Real-Time Communication:** Slack provided a platform for instant messaging, file sharing, and quick updates among team members. Slack is instrumental during Daily Stand-ups, allowing team members to share updates and address blockers in real time, especially in a remote working environment.

**Zoom for Virtual Meetings:** Zoom was used for all virtual meetings, including Sprint Planning, Daily Stand-ups, Sprint Reviews, and Retrospectives. Zoom facilitated face-to-face interactions, which were crucial for effective communication and collaboration.

**Confluence for Documentation:** Confluence was used for documenting project details, meeting notes, and user stories. Confluence served as a central repository for all project-related documentation.

**Scrum Board for Sprint Tracking:** A physical or digital Scrum board displayed the progress of tasks within a sprint. The Scrum board provided a clear and immediate visual representation of the sprint’s progress.

**7. Evaluating Agile Process**

**Pros of the Scrum-Agile Approach:**

**Flexibility and Adaptability:** The iterative nature of Agile allowed the team to adapt to changing requirements and priorities. When the client requested new features or modifications, these could be incorporated into the upcoming sprints without significant disruption.

**Continuous Feedback and Improvement:** Regular Sprint Reviews and Retrospectives facilitated continuous feedback from stakeholders and iterative improvement of the product. This ensured that the project remained aligned with the client’s vision and that any issues were promptly addressed.

**Enhanced Collaboration and Communication:** The Scrum-Agile framework promoted regular communication and collaboration among team members through Daily Stand-ups, Sprint Planning, and other Scrum ceremonies. This fostered a cohesive and collaborative team environment.

**Transparency and Visibility:** Tools like Jira and the Scrum board provided clear visibility into the progress of tasks and overall project status. This transparency helped the team stay focused and allowed stakeholders to track development in real time.

**Cons of the Scrum-Agile Approach:**

**Scope Creep:** The flexibility of Agile can sometimes lead to scope creep, as new requirements and features are frequently added. This can extend the project timeline and increase the complexity of the development process. Continuous addition of new features, such as the vacation package booking, required a constant re-evaluation of priorities and sometimes led to delays in completing initial sprint goals.

**Dependency on Client Availability:** Agile’s reliance on continuous feedback requires regular client involvement, which can be challenging if the client is not readily available or responsive. There were instances when delayed feedback from the client stalled the progress of certain user stories, impacting the sprint timeline.

**Determination of Suitability for SNHU Travel Project:**

The Scrum-Agile approach was indeed the best approach for the SNHU Travel development project for several reasons:

1. **Frequent Requirement Changes:** The travel industry is dynamic, with frequent changes in user preferences and market demands. Agile’s flexibility allowed the team to adapt quickly to these changes and incorporate new features as needed.
2. **Client-Centric Development:** Regular interactions with the client ensured that the project stayed aligned with their vision and requirements. This client-centric approach helped in delivering a product that truly met the client’s needs and expectations.
3. **Incremental Delivery:** The ability to develop and deliver the product incrementally allowed the team to gather early user feedback and make necessary adjustments. This iterative process improved the overall quality and usability of the application.
4. **Enhanced Team Collaboration:** The structured communication channels and collaborative environment fostered by Agile practices ensured that the team worked cohesively towards common goals, enhancing productivity and morale.