AGILE SCRUM

Summer Internship Report Submitted in partial fulfilment of the requirement for the undergraduate

GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)

Degree of

BACHELOR OF TECHNOLOGY in

COMPUTER SCIENCE AND ENGINEERING By

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Hyderabad-502329/March 2025

DECLARATION

I hereby declare that the internship work entitled "Agile Scrum Certification in Infosys Springboard Academy" was carried out as a part of my summer internship under the guidance of DR. YASWANTH GAVINI, Associate Professor, GITAM (Deemed to be University), Hyderabad.

This report is submitted in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at GITAM (Deemed to be University), Hyderabad. The results presented in this report have not been submitted to any other university or institution for the award of any degree or diploma.

Place: HYDERABAD
Date: 07-03-2025
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CERTIFICATE

This is to certify that the Industrial Training Report entitled "Agile Scrum Certification in Infosys Springboard Academy" is being submitted by KANDUKURI SAI VENKAT RAMESH *(HU22CSEN0101909)* in partial fulfilment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering at GITAM (Deemed to be University), Hyderabad, during the academic year 2024-2025

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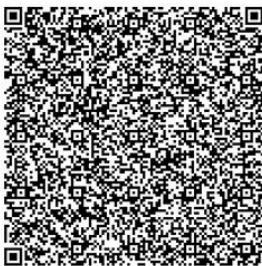
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It is a faithful record of work carried out by me under the guidance and supervision of *Dr.* YASWANTH GAVINI, Assistant Professor, GITAM (Deemed to be University), Hyderabad.
DR. YASWANTH GAVINI
Associate Professor
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ABSTRACT

This report outlines my learnings from the Agile Scrum Certification course at the Infosys springboard Academy. The course covered Agile Scrum methodologies in great detail, exploring fundamental concepts such as Scrum roles, ceremonies, artifacts, and the Agile mindset. I completed various tasks and assessments during this program that enhanced my understanding of Agile principles and my ability to work collaboratively in a Scrum environment. An overview of the course, its main takeaways, and how it influenced my project management and teamwork skills—skills that will be valuable in both my academic and professional endeavors—are given in this report.

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1. Overview

This section explains the report's goal and provides a summary of the **Agile Scrum Certification** course, which is a component of the educational process. It highlights the significance of Agile methodologies and the Scrum framework in project management and team collaboration. The section also explains the rationale behind selecting this course to improve skills, focusing on how Scrum practices can enhance productivity, communication, and adaptability within teams, making it a valuable addition to both academic and professional development.

2.Scrum Roles

In Scrum, there are three primary roles that are essential for the success of the framework: **Scrum Master**, **Product Owner**, and the **Development Team**. Each role plays a distinct part in the Scrum process, working collaboratively to ensure the team delivers high-quality products efficiently and effectively.

1. **Scrum Master**: The Scrum Master acts as a facilitator and servant leader to the Scrum team. Their primary responsibility is to ensure that the Scrum process is followed and to remove any obstacles or impediments that hinder the team's progress. The Scrum Master helps the team stay focused on delivering value and continuously improves the team's workflow. They also act as a liaison between the Scrum team and external stakeholders, ensuring clear communication and helping the team adhere to Agile principles.

2. **Product Owner**: The Product Owner is responsible for managing the Product Backlog, which is a prioritized list of features, requirements, and tasks. They work closely with stakeholders and customers to understand their needs and translate them into clear, actionable backlog items. The Product Owner ensures that the team is always working on the highest-priority items that deliver the most value. They also make key decisions regarding the scope and direction of the product.

3. **Development Team**: The Development Team consists of professionals who work collaboratively to build and deliver the product increment. The team is self-organizing and cross-functional, meaning they have the skills to

complete the tasks necessary for each sprint. They take responsibility for delivering high-quality work, managing their tasks, and ensuring that they meet the Definition of Done.

3. Scrum Ceremonies

Scrum ceremonies, also known as Scrum events, are crucial components of the Scrum framework, helping teams stay aligned, focused, and adaptive throughout a project. These ceremonies ensure that there is consistent communication, transparency, and feedback during each sprint cycle. There are four primary Scrum ceremonies: **Sprint Planning**, **Daily Scrum**, **Sprint Review**, and **Sprint Retrospective**.

1. **Sprint Planning**: This ceremony kicks off the sprint, where the Scrum Team, including the Product Owner, Scrum Master, and Development Team, meet to discuss the work to be completed during the sprint. The Product Owner presents the highest-priority items from the Product Backlog, and the team collaboratively decides which tasks they can commit to delivering. The team also establishes a clear **Sprint Goal** and defines the work required to achieve it.

2. **Daily Scrum**: The Daily Scrum, or **Daily Standup**, is a short, time-boxed meeting (usually 15 minutes) where team members share progress and discuss any challenges. Each member answers three questions: What did I accomplish yesterday? What will I work on today? Are there any obstacles preventing me from moving forward? This meeting ensures the team stays aligned and can quickly address issues.

3. **Sprint Review**: At the end of the sprint, the team conducts the Sprint Review to demonstrate the work completed. The Product Owner, stakeholders, and team members assess the product increment, provide feedback, and make necessary adjustments to the Product Backlog.

4. **Sprint Retrospective**: In this ceremony, the Scrum Team reflects on the sprint process itself. They discuss what went well, what could be improved, and how they can work more effectively in the next sprint. The goal is continuous improvement and team growth.

4. Scrum Artifacts

In Scrum, artifacts are tools that provide transparency and help manage the flow of work during the project. The three key Scrum artifacts are the **Product Backlog**, **Sprint Backlog**, and **Increment**.

1. **Product Backlog**: The Product Backlog is a prioritized list of features, requirements, and tasks needed for the product. It is continuously updated by the **Product Owner** to reflect changing customer needs and market demands. The backlog includes user stories, bugs, technical tasks, and other items, ensuring that the team works on the most valuable tasks first.

2. **Sprint Backlog**: The Sprint Backlog is a subset of the Product Backlog, consisting of the tasks selected for the current sprint. It is managed by the **Development Team**, who defines the work required to meet the **Sprint Goal**. The Sprint Backlog is a dynamic document that is updated regularly to reflect progress and new tasks that arise during the sprint.

3. **Increment**: The Increment is the sum of all completed Product Backlog items at the end of a sprint. It represents a potentially shippable product that meets the **Definition of Done** (DoD), ensuring that it is of high quality and ready for release. The Increment provides visibility into the team's progress and is crucial for making informed decisions about future development.

5.Agile Methodology

Agile Methodology is an iterative and flexible approach to project management and product development, primarily used in software development but applicable to various industries. The core philosophy of Agile focuses on delivering small, incremental improvements in a product over time, rather than following a rigid, linear process. Agile emphasizes adaptability, customer collaboration, and continuous improvement.

Key principles of Agile include:

- **Customer Collaboration**: Agile prioritizes ongoing communication with customers and stakeholders to ensure the product meets evolving needs.
- **Iterative Progress**: Work is broken down into small, manageable increments or sprints, typically lasting 1-4 weeks. This allows for regular feedback and adjustments.
- **Responding to Change**: Agile welcomes changes, even late in development, recognizing that customer needs and market conditions can evolve rapidly.
- **Cross-functional Teams**: Agile promotes collaboration among team members with different expertise, ensuring efficient problem-solving and quicker decision-making.

Popular Agile frameworks include **Scrum**, **Kanban**, and **Extreme Programming (XP)**. These frameworks provide structured processes for Agile teams, with specific roles, ceremonies, and artifacts to enhance productivity and streamline workflows.

Overall, Agile methodology fosters a culture of flexibility, quick delivery, and continuous feedback, enabling teams to create high-quality products that meet customer needs while adapting to changing requirements.

6.Hands-on Learning and Practical Exercise

Hands-on learning and practical exercises are essential in developing a deeper understanding of Scrum and its application in real-world projects. These exercises provide an opportunity to experience Scrum roles, ceremonies, and processes firsthand.

1. **Simulated Sprints**: Participants work in teams to complete time-boxed sprints, where they go through the process of sprint planning, daily standups, reviews, and retrospectives. This hands-on approach helps participants grasp the dynamics of each stage of the sprint.

2. **Role-playing**: Learners assume the roles of Scrum Master, Product Owner, and Development Team members, which allows them to better understand the unique responsibilities and challenges of each role in a Scrum environment.

3. **Backlog Creation and Prioritization**: Participants create and prioritize a Product Backlog, translating business requirements into user stories and ensuring that tasks are aligned with business goals. This practice highlights the importance of prioritization in Scrum.

4. **Sprint Planning and Estimation**: Teams practice estimating effort using story points, planning tasks for the sprint, and setting sprint goals, all of which are essential for effective Sprint execution.

5. **Sprint Retrospective**: After each sprint, teams reflect on their process, discussing what went well and identifying areas for improvement, reinforcing the principle of continuous improvement.

7.Scrum Implementation Challenges

Implementing Scrum in an organization can present several challenges, particularly if the team is new to the framework or if the organization has a traditional mindset. These challenges can impact the successful adoption and execution of Scrum.

1. **Resistance to Change**: Scrum requires a shift from traditional project management approaches. Employees and managers accustomed to hierarchical, top-down structures may resist the autonomy and self-organization that Scrum promotes, leading to friction during the transition.

2. **Lack of Understanding**: Inadequate training or misunderstandings about Scrum roles, ceremonies, and artifacts can hinder effective implementation. Without a clear understanding, team members might not fully embrace the Scrum values or practices, undermining the framework's potential.

3. **Unclear Roles and Responsibilities**: Scrum relies on well-defined roles—Scrum Master, Product Owner, and Development Team. Ambiguities or overlap in these roles can lead to confusion, accountability issues, and lack of effective decision-making.

4. **Ineffective Communication**: Scrum thrives on continuous communication and collaboration. Poor communication within the team or with stakeholders can result in misaligned goals, missed deadlines, and suboptimal delivery of value.

5. **Scaling Issues**: For larger projects or organizations, scaling Scrum can be challenging. Managing multiple Scrum teams and aligning them towards a common goal requires careful coordination and additional frameworks like SAFe or LeSS.

Addressing these challenges requires training, clear role definitions, commitment from leadership, and continuous improvement to ensure Scrum's success in an organization.

8. Certification Exam

The **Agile Scrum Certification exam** assesses a candidate's knowledge of Scrum principles, roles, ceremonies, and artifacts. It tests understanding of Scrum roles like Scrum Master, Product Owner, and Development Team, as well as ceremonies such as Sprint Planning, Daily Standups, and Retrospectives. Candidates also need to demonstrate their ability to manage Scrum artifacts like the Product Backlog, Sprint Backlog, and Increment. The exam typically includes multiple-choice questions and requires preparation through study materials, practice exams, and

hands-on exercises. Upon passing, candidates earn certification, validating their skills in applying Scrum methodologies effectively in real-world scenarios

9. Conclusion

In conclusion, Agile Scrum Certification is an essential credential for individuals looking to enhance their skills in Agile project management. It equips professionals with a deep understanding of Scrum roles, ceremonies, and artifacts, enabling them to implement Scrum effectively within their teams and organizations. By learning how to manage Product Backlogs, prioritize tasks, and ensure continuous delivery of value, certified Scrum practitioners are well-prepared to address the complexities of modern, fast-paced projects.

The certification also fosters a culture of collaboration and adaptability, essential for managing change in dynamic environments. Additionally, it provides professionals with the tools to contribute to high-performing teams that can respond quickly to evolving customer needs and deliver quality results.

For organizations, having Scrum-certified individuals enhances overall productivity, efficiency, and communication, leading to successful project outcomes. As the demand for Agile practices grows across industries, Agile Scrum Certification not only boosts career prospects but also positions professionals as valuable assets to their teams, contributing to long-term success and innovation.

I would like to thank Infosys Springboard Academy for making this course available and GITAM University for granting me the chance to develop my technical skills. I am looking forward to extending my knowledge of Agile Scrum and putting these learnings into practice on future projects and professional work.