# Assignment 6.1

## Introduction to Agile and Scrum

### Agile Methodology Cheat Sheet

#### Core Agile Principles

1. Customer Satisfaction: Deliver valuable software early and continuou
2. Welcome change: Embrace changing requirements, even late in development.
3. Frequent Delivery: Deliver working software frequently, from a couple of weeks to a couple of months.
4. Collaboration: Business people and developers must work together daily.
5. Motivated Individuals: Build projects around motivated individu - als, trust them.
6. Face-to-face Communication: The most efficient and effective method of conveying information.
7. Working Software: The primary measure of progress.
8. Sustainable Development: Maintain a constant pace indefinitely
9. Technical Excellence: Continuous attention to technical excellence and good design.

10. Simplicity : Maximize the amount of work not done.

11. Self-Organizing Teams : The best architectures, requirements, and design emerge from self-organizing teams.

12. Reflect and Adjust : Regularly reflect on how to become more effective, then tune and adjust behaviour accordingly.

Agile Frameworks

(1) Scrum

(2) Kanban

(3) Extreme Programming (XP)

(4) Lean Software Development

(5) Crystal.

Scrum Framework Cheat Sheet

Scrum Roles

(1) Product Owner :

- Defines the features of the product
- Decides on release dates and content.
- Prioritizes features according to market value.
- Accepts or rejects work results.

(2) Scrum Master

- Ensures the team follows Agile practices.

- Remove impediments.
- facilitates meetings.
- Shields the team from external interference.

(3.) Development Team

- Cross - functional group (designers, developers, testers, etc)
- Self - organizing and self - managing.
- Responsible for delivering potentially shippable product increments.

Scrum Artifacts

(1) Product Backlog

- Ordered list of all desired work on the project.
- Managed by the Product Owner.

(2) Sprint Backlog

- List of tasks to be completed during the sprint.
- Selected from the product Backlog by the Development Team.

(3) Increment

- Sum of all product Backlog items completed during a Sprint.
- Must be in a usable condition and meet the team's Definition of Done.

# Scrum Events

1. Sprint
   - Time-boxed iteration (1-4 weeks).
   - A shippable product increment is created.
2. Sprint planning
   - Defines what can be delivered in the increment.
   - Develops a plan for achieving the Sprint Goal.
3. Daily scrum
   - 15-minute time-boxed meeting.
   - Synchronizes activities and creates a plan for the next 24 hrs.
   - Each team member answers:
     - → what did I do yesterday?
     - → what will I do today?
     - → Are there any impediments?
4. Sprint Review
   - Held at the end of the Sprint.
   - The team presents what was accomplished during the Sprint.
   - Collaborative discussion on the product increment and any changes to the product Backlog.
5. Sprint Retrospective
   - Held after the Sprint Review and before the next Sprint Planning.

- Team discusses what went well, what didn't, and how processes can be improved.

Scrum Values

(1.) Commitment

(2.) Courage

(3.) Focus

(4.) Openness

(5.) Respect

Agile and Scrum Practices

Agile Practices

(1) User Stories: Short descriptions of a feature from the perspective of an end user.

(2.) Test-Driven Development (TDD): Writing tests before code.

(3.) Continuous Integration: Integrate and test code frequently.

(4) Pair Programming: Two developers work together at one workstation.

Scrum Practices

1. Definition of Done (DOD): A checklist of criteria that must be met for a product increment to be considered "done".

2. Burndown charts: Visual representation of work left to do versus time.

3. Sprint Goal: Objective set for the Sprint that can be met through the implementation of the Product Backlog.

Key Metrics.

1. Velocity: Amount of work a team can handle during a single Sprint.
2. Cycle Time: Time taken to complete a task from start to finish.
3. Lead Time: Time taken from a feature request to its delivery.