**Agile Methodology**

**Agile Methodology:** Agile is a set of rules or guidelines for building software.Instead of trying to plan out every detail. We break the project into the smaller iterations. We work on these iterations and focus on deliverable usable pieces of the software. We get feedback from users which helps us to make adjustment and improvements

We can respond quickly to changes and deliver valuable product to our customer faster and easily

**Advantages:**

1. Agile allows teams to do changes quickly and easily
2. Because projects are divided into smaller iterations we get usable software product
3. Agile keeps customers feedbacks to ensuring that the final product meets their expectations
4. With frequently testing agile maintain a focus on delivering high and better quality software

**Disadvantages:**

1. Its hard for new teams to get used to agile way of working
2. Everyone needs to stay involved
3. Sometimes extra features get added making the project bigger than planned
4. Less documentation which can leads to missing information

**Agile Framework:**

1. **Scrum :**

* Scrum is the most widely used agile framework. It structures development in cycles of work called sprints
* Imagine we are playing a game where we have small missions we call these “Sprints” last about 2 to 4 weeks
* At the start of each part our team decides what part of the project we can complete during that time
* Everyone meets everyday to update each other and taking feedback from users and then take a little time to think about how to make the next part
* We have three main roles

1. **Product owner:** The product owner is like a idea person they know what needs to be built They understand what the customers or users want and communicate that to the team and ensuring the project is on the right track
2. **Scrum master:** Scrum master is like a coach. They make sure that the team follows the rules and works goods. They help to remove any problems the team is facing
3. **Scrum team:** scrum team are ones who takes the ideas and turn into something real like software they work together and decide as a team how to complete task and share responsibility to complete the work

**Sprints:** The project is divided into these short cycles that usually last 2 to 4 weeks. During this time the team works on a set of tasks and they meet everyday to talk about progress and any issues or problems.

**Sprint planning meeting:**

* In this the team meets together to decide what next tasks they will work on for next sprint
* They break down the big task into smaller pieces to make it easier to handle
* They guessing how much time it will take to complete each task
* They make a plan for how they will track the plan
* In the end of the meeting everyone knows what they needs to do and how they will do it

**Sprint review meeting:**

* The scrum team showing the product increment they have developed during the sprint
* Stakeholders provides feedback on the features sharing their suggestions
* Based on the feedback received the team and stakeholders discuss any changes to the product
* The team review the goals they set at the beginning of the sprint they also discuss any challenges encountered during the sprint

**Daily scrum :**

* Daily scrum meeting is also known as daily stand up meeting
* It's a daily checking with our team everyone stands up to keep the meeting short
* Each team member answered 3 questions 1. What did I do yesterday? 2. What am I going to do today? 3. Are there any obstacles that restrict me from completing my task?

**Sprint Retrospective meeting:**

* The team gathers to discussing what went well and what did not go so well they review the goals they set at the beginning of the sprint
* The team identifies they completing tasks on time or overcoming the obstacles
* They also discussing the challenges or issues
* Based on the analyses they team give ideas for improvements

**Story points:**

* Story points are a way for agile teams to measure the efforts needed to complete a task.
* Teams used these points to estimate how hard a task is and how long it will take time.
* Each task gets points based on its difficulty

**Epic:**

* Epic is a like a large project that can be broken in smaller task to make it easier to complete step by step

**Zero sprint:**

* Sprint 0 is like preparation phase before starting the main work on a project
* During this time the team gets everything ready for the upcoming sprints
* This can included development environments,planning

**Spike:**

* Spike is a quick investigation to learn more about something before starting work
* To gather information, test ideas, or solve a problem and helping the team to make better plan their work more effectively

**Velocity:**

* Velocity measures how much work our team can complete in single sprint based on the story points
* It shows team productivity and help them to know how much work they handle and how many tasks the teams finishes in each sprints