**AGILE AND SCRUM**

**WHAT IS AGILE?**

* Conventional software models like Waterfall Model had a lot of flaws hence Agile came into picture.
* It's a practice used for continuous iteration of development and testing in the SDLC.
* Breaks the project in chunks or smaller segments so, clients will be able to see the progress of projects constantly.
* More adaptable to changing requirements.
* Encourages F2F communication, teamwork and constant feedback from the end users.

**12 principles of agile software development**

**1.Customer Satisfaction**

Deliver useful software early and frequently to keep customers happy.

**2.Changing Requirements**

Be flexible and accept changes anytime to improve the product.

**3.Frequent Delivery**

Release software in small parts often, rather than all at once.

**4.Communicate Regularly**

Developers and stakeholders should talk daily to stay aligned.

**5.Support Team Members**

Create a positive work environment where the team feels motivated.

**6.Face-to-Face Communication**

Talking in person is the best way to share ideas and solve problems.

**7.Measure Work Progress**

The best way to track progress is by checking if the software works.

**8.Development Process**

Maintain a steady work pace for consistent and sustainable progress.

**9.Good Design**

Focus on writing clean and efficient code for long-term success.

**10.Measure Progress**

Keep things simple and avoid unnecessary work.

**11.Continue Seeking Results**

Allow teams to manage themselves for better creativity and results.

**12.Reflect and Adjust Regularly**

Keep improving by learning from past mistakes and making changes.

**Advantages of agile**

1. **Open to Changes:** Agile is flexible, so if things change or new ideas come up during a project, it's easy to adjust and make improvements without major disruptions. This helps teams stay adaptable.
2. **Highest Preference to Customer Satisfaction:** The main goal of Agile is to make sure the customer is happy. By frequently checking in with customers and delivering what they need, Agile ensures their satisfaction is always a priority.
3. **Faster and High-Quality Product Delivery:** With Agile, the team works in smaller, manageable chunks and delivers parts of the product quickly. This results in faster releases and allows for improvements along the way, making sure the final product is high quality.
4. **Strong Team Interaction:** Agile encourages regular communication and collaboration within the team. Everyone shares ideas, solves problems together, and works closely, which leads to better teamwork and stronger results.

**Disadvantages of agile**

**1. Time Commitment from Developer's Side:** Agile requires developers to spend a lot of time in meetings and continuous work to keep up with the fast pace. This can be tiring and take away from their time to focus on other tasks.

**2. Requires Skill and Training to Implement Feedback:** Agile relies on regular feedback to improve the product, but to make those changes effectively, the team needs to have the right skills and training. Without this, implementing feedback can be difficult and may lead to mistakes.

**What is scrum?**

* Popular approach or model to implement Agile methodology
* Helps users to manage software development with iterative method
* Regular and repeatable work cycle in scrum during which work is completed and made ready for reviews is known as scrum sprint
* Sprints hardly lasts for 1-2 weeks and for next sprint plan is made by team workers
* For incremental feedback burndown charts or boards are used

**Advantages of scrum**

1. **Cost Effective:** Scrum helps teams focus on delivering high-priority features first, which can reduce unnecessary spending. It also encourages faster delivery, reducing the overall cost of the project.
2. **Easy to Make Changes:** Scrum is flexible, so if there’s a need to change the product or improve it, it can be done easily. Scrum allows changes to be made regularly during each sprint, making it adaptable to new needs.
3. **Provides Continuous Feedback:** Scrum involves regular reviews and feedback from the team and stakeholders. This helps identify any issues early, so the product can be improved quickly and meet expectations more effectively.

**Disadvantages of scrum**

1. **Requires Experience:** Scrum works best when the team has experience with its processes. Without enough knowledge or practice, it can be difficult to use Scrum effectively, which might lead to mistakes or inefficiencies.
2. **Final Project's Deadline Isn’t Accounted:** In Scrum, the focus is on completing tasks in short sprints rather than setting a strict final deadline. This can make it harder to predict exactly when the entire project will be finished, which might cause delays or uncertainty about the timeline.