Agile and Scrum Basics

1. What is Agile?

Agile is a project management methodology focused on delivering small, incremental changes quickly while responding to feedback. It’s widely used in software development but applies to many industries.

Core Principles (from Agile Manifesto):

Customer collaboration over contract negotiation.

Responding to change over following a plan.

Working software over comprehensive documentation.

Individuals and interactions over processes and tools.

Top 5 Reasons to Use Agile

Flexibility and Adaptability – Easily accommodates changing requirements, even late in the development process.

Faster Time to Market – Delivers small, incremental releases, allowing quicker feedback and early product delivery.

Continuous Feedback and Improvement – Regular reviews ensure the product aligns with customer expectations.

Better Collaboration and Transparency – Promotes teamwork and visibility through daily standups and regular communication.

Higher Product Quality and Reduced Risk – Frequent testing and integration catch defects early, minimizing project failure.

Popular Agile Methodologies:

Scrum – Uses sprints (short development cycles), daily stand-ups, and roles like Scrum Master and Product Owner.

Kanban – Focuses on visualizing work (via boards) and limiting work in progress (WIP).

Extreme Programming (XP) – Emphasizes coding best practices, pair programming, and frequent releases.

Lean – Aim to maximize value while minimizing waste.

2. What is Scrum?

Scrum is a framework within Agile used to implement Agile principles. It organizes work into sprints and promotes team collaboration to achieve goals.

Scrum Core Concepts:

Sprints: Time-boxed periods (usually 1-4 weeks) where a set amount of work is completed.

Iterative Approach: Deliver small, functional increments frequently.

Inspect and Adapt: Regular reviews to improve processes.

3. Scrum Framework Structure

Scrum Roles:

Product Owner (PO):

Defines the product vision.

Prioritizes the backlog.

Ensures the team is building what the customer wants.

Scrum Master (SM):

Facilitates Scrum processes.

Removes blockers.

Coaches the team to follow Scrum practices.

Development Team:

Cross-functional team responsible for delivering the work.

Self-organized and collaborative.

Scrum Artifacts:

Product Backlog:

List of all features, bugs, and tasks that need to be completed.

Managed by the Product Owner.

Sprint Backlog:

Subset of prioritized tasks from the product backlog for the current sprint.

Increment:

The usable, shippable product delivered at the end of a sprint.

Scrum Events (Ceremonies):

Sprint Planning:

Goal: Define the scope of work for the sprint.

Input: Product backlog items.

Outcome: Sprint backlog.

Daily Standup (Daily Scrum):

15-minute meeting to discuss:

What was done yesterday?

What will be done today?

Any blockers?

Sprint Review:

Demo the completed work to stakeholders.

Gather feedback for improvement.

Sprint Retrospective:

Reflect on the sprint.

Discuss what went well and what can be improved.

Plan changes for the next sprint.

4. Scrum Workflow Overview

Product Owner creates and maintains the product backlog.

Sprint Planning selects high-priority tasks for the sprint.

Team works on tasks and updates progress in the Daily Standup.

At the end of the sprint:

Completed tasks are reviewed in the Sprint Review.

Team reflects on the process in the Sprint Retrospective.

Process repeats for the next sprint.

5. Key Scrum Metrics

Velocity: Amount of work completed per sprint.  
 Burndown Chart: Visualizes remaining work vs. time.  
 Sprint Goal: Objective to be achieved in a sprint.

6. Differences Between Agile and Scrum