

## 2Agile

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“What is the Agile methodology, and how is it different from the Waterfall model?”

Agile is an iterative and incremental approach to software development. It focuses on delivering small, functional parts of the software (called increments) frequently and adapting to changing requirements.

Key Principles of Agile: Customer Collaboration: Close interaction with stakeholders to ensure the product meets their needs. Frequent Delivery: Software is delivered in short iterations, typically 1–4 weeks (called sprints in Scrum). Flexibility: Agile embraces changes in requirements, even late in development. Cross-functional Teams: Developers, testers, and business analysts work together closely. Continuous Feedback: Regular feedback ensures alignment with goals. Focus on Working Software: Delivering functional software is prioritized over extensive documentation.

Example Frameworks in Agile: Scrum: Involves sprints, daily stand-ups, and roles like Scrum Master and Product Owner. Kanban: Focuses on workflow visualization and continuous delivery. XP (Extreme Programming): pair programming and test-driven development.

### Scrum Master vs. Project Manager

Aspect	Scrum Master	Project Manager
Role	Facilitator and coach	Oversees and manages the entire project
Focus	Team process and Scrum adherence	Delivering the project on time and budget
Team Autonomy	Promotes self-organizing teams	May take a more directive approach
Responsibilities	Removing impediments, facilitating Scrum	Planning, scheduling, resource management

What is a Sprint? A sprint is a short, time-boxed period in the Scrum framework during which a team works to complete a specific set of tasks (usually from the product backlog) to achieve a sprint goal. Sprints are at the core of Scrum, enabling teams to deliver incremental value quickly and adapt to changing requirements.

Key Characteristics of a Sprint: Fixed Duration: Typically lasts 1 to 4 weeks. Time-Boxed: The duration is fixed and cannot be extended. Defined Goal: Each sprint has a clearly defined objective called the sprint goal. Incremental Delivery: Results in a potentially shippable product increment at the end.