

Agile Development Methodologies

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Outline

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 - Common Features
 - Agile Vocabulary
- 2 Different Agile Methodologies
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Agile Development Methodologies

Quote of the Day

*“All the world’s a stage,
And all the men and women merely players:
They have their exits and their entrances;
And one man in his time plays many parts,
His acts being seven ages.”*
≈ William Shakespeare

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Agile development methodologies is an “umbrella term” for many different methodologies, all of which are “agile” and adapt to changing requirements very fast.

Common Features of All Agile Methods

All agile methodologies have the following features in common:

- **Iterative:** The development process is done small slices and releases are scheduled regularly
- **Communication:** The product owner is very involved and constantly providing feedback to the development team
- **Quality:** High quality standards are maintained through methods such as continuous integration, unit testing, test-driven development, and refactoring
- **Adaptive:** Software development evolves as new features, bug reports, and client needs are given in the communication cycle

Agile Actors

All agile methods have various roles in the development process. Please add all these roles to your lexicon.

- **Product Owner:** The individual who represents the client's interest in the software development process
- **Project Manager¹:** The individual who supervises the development team, approves sprints, and assigns tasks
- **Developer:** Team member who, in addition to writing software, writes documentation, tests and verifies all units, and provides feedback to the project manager

Software teams in an agile environment are self-organizing. Developers organize based on current projects and how their talents are best suited to particular tasks.

¹Also known as a “master”

Agile Phases

The agile process consists of various phases. Please add these to your lexicon, too:

- 1 Tickets are taken from the **backlog**, which is a group of tickets waiting for development
- 2 This group of tickets is known as a **sprint**; the sprint is then given a time limit
- 3 Daily **stand up meetings** designed to keep everyone up to date; these meetings are designed to be only 5 - 10 minutes
- 4 As developers complete tickets, they write tests for all their code, known as **unit tests**
- 5 The sprint is then worked on by the developers and the tickets will gradually become complete; the rate at which this happens is known as the **burn down**

Different Agile Methodologies

There is no one agile methodology. Organizations will often create “hybrid” methods of two or more methodologies. As always, there are advantages and disadvantages to each.

- **Extreme Programming (XP):** Method where developers use **pair programming**: one keyboard, two developers
- **Kanban:** Kanban stresses just-in-time delivery and limiting the tickets that are in progress
- **Scrum:** A flexible methodology that emphasizes the ability of the team to adapt to a product that may or may not be well defined
- **Test Driven Development:** A methodology that enforces all unit tests be written before the actual unit

Scrum

SCRUM PROCESS

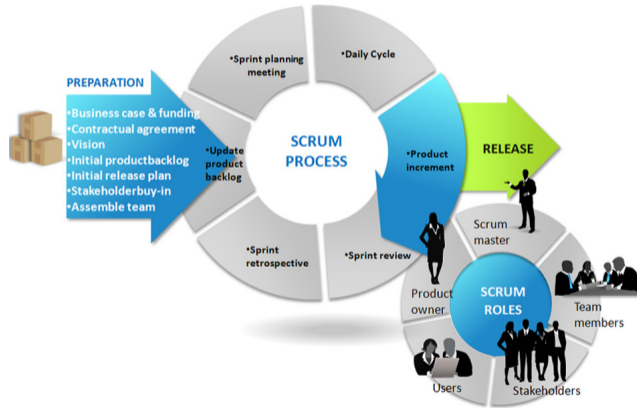


Figure 1: Scrum Development Process

In Class Agile

Like many job sites, this class will be using a “hybrid” approach to agile development. Specifically, the following features will be used from the processes discussed:

- Roles, stand-up meetings, sprints, and burn downs will be used from Scrum
- In progress tickets will be limited as per Kanban
- **All** JavaScript and PHP code must be unit tested before it is written, as is seen in test driven development

Essentially, the class will be using Scrum with a few added features from Kanban and test driven development.