

Agile Software Development (TCS 855)

Unit-II Agile Project Management
Agile Scrum Methodology

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Understanding scrum roles, artifacts, and events

- The scrum framework defines specific roles, artifacts, and events for projects.
- Scrum's three *roles* — people on the project — are as follows:
 1. **Product owner:** Represents and speaks for the business needs of the project.
 2. **Development team:** Performs the day-to-day work. The development team is dedicated to the project and each team member is *multi-skilled* — that is, although team members may have certain strengths, each member is capable of doing multiple jobs on the project.
 3. **Scrum master:** Protects the team from organizational distractions, clears roadblocks, ensures that scrum is played properly, and continuously improves the team's environment.

Additionally, scrum teams find that they're more effective and efficient when they work closely with two non-scrum-specific roles:

- **Stakeholders:** Anyone who is affected by or has input on the project. Although stakeholders are not official scrum roles, it is essential for scrum teams and stakeholders to work closely together throughout a project.
- **Agile mentor:** An experienced authority on agile techniques and the scrum framework. Often this person is external to the project's department or organization, so he or she can support the scrum team objectively with an outsider's point of view.

In the same way that scrum has specific roles, scrum also has three tangible deliverables, called artifacts:

- **Product backlog:** The full list of requirements that defines the product, often documented in terms of business value from the perspective of the end user. The product backlog can be fluid throughout the project. All scope items, regardless of level of detail, are in the product backlog. The product owner owns the product backlog, determining what goes in it and in what priority.
- **Sprint backlog:** The list of requirements and tasks in a given sprint. The product owner and the development team select the requirements for the sprint in sprint planning, with the development team breaking down these requirements into tasks. Unlike the product backlog, the sprint backlog can be changed only by the development team.
- **Product increment:** The usable, potentially shippable functionality. Whether the product is a website or a new house, the product increment should be complete enough to demonstrate its working functionality. A scrum project is complete after a product contains enough shippable functionality to meet the customer's business goals for the project.

Finally, scrum also has five events:

1. **Sprint:** Scrum's term for iteration. The *sprint* is the container for each of the other scrum events, in which the scrum team creates potentially shippable functionality. Sprints are short cycles, no longer than a month, typically between one and two weeks, and in some cases as short as one day.

Consistent sprint length reduces variance; a scrum team can confidently extrapolate what it can do in each sprint based on what it has accomplished in previous sprints. Sprints give scrum teams the opportunity to make adjustments for continuous improvement immediately, rather than at the end of the project.

2. **Sprint planning:** Takes place at the start of each sprint. In sprint planning meetings, scrum teams decide which goal, scope, and supporting tasks will be part of the sprint backlog.

3. **Daily scrum:** Takes place daily for no more than 15 minutes. During the daily scrum, development team members make three statements:

- What the team member completed yesterday
- What the team member will work on today
- A list of items impeding the team member

The scrum master also participates in the context of impediments he or she is working to remove for the developers.

4. **Sprint review:** Takes place at the end of each sprint. In this meeting, the development team demonstrates to the stakeholders and the entire organization the accepted parts of the product the team completed during the sprint. The key to the sprint review is collecting feedback from the stakeholders, which informs the product owner how to update the product backlog and consider the next sprint goal.
5. **Sprint retrospective:** Takes place at the end of each sprint. The sprint retrospective is an internal team meeting in which the scrum team members (product owner, development team, and scrum master) discuss what went well during the sprint, what didn't work well, and how they can make improvements for the next sprint. This meeting is action-oriented (frustrations should be vented elsewhere) and ends with tangible improvement plans for the next sprint.

Note: If you are - or want to be-an agile practitioner, you may consider getting one or more agile certifications

There are number of well-recognized, entry-level certifications, including the following:

1. **Certified ScrumMaster (CSM):** The Scrum Alliance, a professional organization that promotes the understanding and use of scrum, offers a certification for scrum masters. The CSM requires a two-day training class, provided by a Certified Scrum Trainer (CST) and completing a CSM evaluation. CSM training provides an overall view of scrum and is good starting point of Agile Journey. See <http://scrumalliance.org>.
2. **Certified Scrum Product Owner (CSPO):** The Scrum Alliance also provides a certification for product owners. Like the CSM, the CSPO requires two days of training from a CST. CSPO training provides a deep dive into the product owner role. See <http://scrumalliance.org>
3. **Certified Scrum Developer (CSD):** For development team members, the Scrum Alliance offers the CSD. The CSD is a technical-track certification, requiring five days of training from a CST and passing an exam on agile engineering techniques. CSM or CSPO training can count toward a CSD; the remaining three days are a technical skills course. See <http://scrumalliance.org>
4. **PMI Agile Certified Practitioner (PMI-ACP):** The Project Management Institute (PMI) is the largest professional organization for project managers in the world. In 2012, PMI introduced the PMI-ACP certification. The PMI-ACP requires training, general project management experience, experience working on agile projects, and passing an exam on your knowledge of agile fundamentals. See <http://pmi.org>