



Scrum Framework

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Scrum Origins

- First mentioned as a development method in 1986, referring to a fast and flexible product development process practiced in Japanese manufacturing companies (such as Honda and Canon).
- The variant of Scrum used for software development, jointly developed by Sutherland and Schwaber , was introduced in
- The name emphasizes the importance of teamwork in the methodology and is derived from the game of rugby.
- Originally intended as a general framework for systems development, but is currently used as a comprehensive software development methodology.



Scrum: New Process Framework

- A people centric framework based on a set of **values** , **principles** , and **practices** that provide the foundation to which an organization can add its unique implementations for realizing the Scrum practices.
- **Scrum Values** : Honesty, Openness, Courage, Respect, Focus, Trust, Empowerment, and Collaboration.
- **Scrum Principles** : Manifestations of the Agile
- **Scrum Practices** : Embodied in specific roles , activities , artifacts , and their associated rules.



Scrum Practices: Scrum Team Roles

- **Product Owner:** Responsible for what will be developed and in what order.
- **Scrum Master:** Responsible for guiding the team in creating and following its own process based on the broader Scrum framework.
- **Development Team:** Responsible for determining how to deliver what the product owner has asked for.



Scrum Roles: Product Owner

- Empowered central point of product leadership
- Single authority responsible for deciding which features and functionality to build, and the order in which to build them
- Maintains and communicates to all other participants a clear vision of what the Scrum team is trying to achieve, and therefore,
 - responsible for the overall success of the solution being developed or maintained.
- Actively collaborates with the Scrum Master and Development Team to ensure that the team rapidly builds what he wants; so,
 - must be available to answer questions soon after they are posed.




Scrum Roles: Scrum Master

- Helps everyone involved understand and embrace the Scrum values, principles, and practices.
- As a **Coach**:
 - Provides process leadership and helps the Scrum team and the rest of the organization develop their own specific Scrum process.
 - Helps the organization through the challenging change management process that can occur during a Scrum adoption.
- As a **Facilitator**:
 - Helps the team resolve issues and make improvements to its use of Scrum.
 - Protects the team from outside interference and takes a leadership role in removing impediments (when the team cannot resolve them).
- Has no authority to exert control over the team:
- Functions as a leader, not a project manager or development manager.



Scrum Roles: Development Team

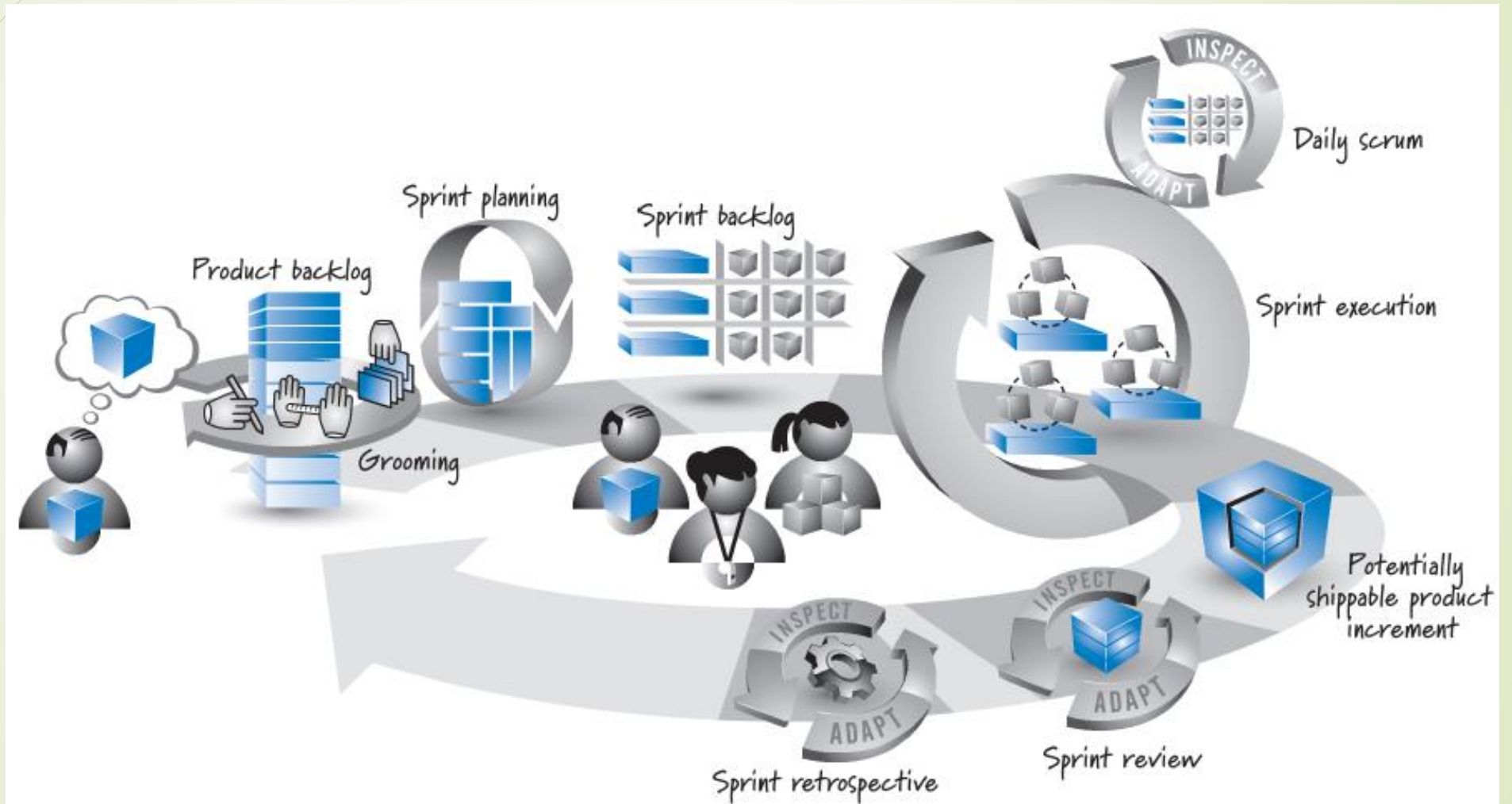
- A cross-functional collection of various types of people who are responsible for designing, building, and testing the product
 - Self-organizes to determine the best way to accomplish the goal set out by the Product Owner.
 - Typically five to nine people in size
 - Members must collectively have all of the skills needed to produce good quality, working software.
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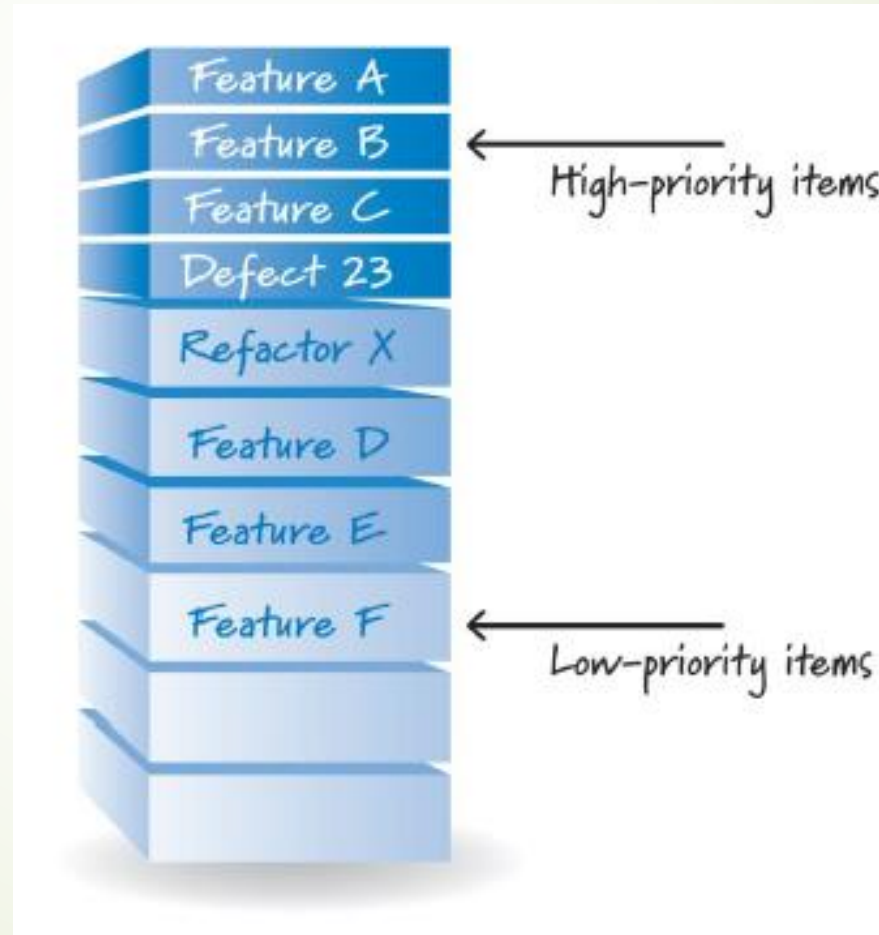
Scrum Process: Activities and Artifacts

- **Product owner** has a **vision of** what he wants to create.
 - Through an activity called **grooming**, the vision is broken down into a set of features that are collected into a prioritized list called the **product backlog**.
- **Sprints** are performed iteratively; each sprint consists of:
 - **1. Sprint planning:** At the beginning of each sprint:
 - The development team selects a subset of the product backlog items (**features**) it believes it can commit to completing.
 - **sprint backlogs** created; it describes, through a set of detailed **tasks**, how the team plans to design/build/integrate/test the selected features.
 - **2. Sprint execution:** The development team performs the tasks necessary to realize the selected features.
 - Each day, team members conduct a synchronization, inspection, and adaptive planning activity known as the **daily scrum**.
 - At the end of execution, the team has produced a **potentially shippable product increment** that represents some of the product owner's vision.
 - **3. Sprint review:** Stakeholders and Scrum team inspect and adapt the product being built.
 - **4. Sprint retrospective:** Scrum team inspects and adapts the Scrum process being used to create the product.

Scrum Process: Activities and Artifacts



Product Backlog





Product Backlog



- The product owner, with input from the rest of the Scrum team and stakeholders, is responsible for determining and managing the sequence of work in the form of the product backlog.
 - Initially, product backlog items are features required to meet the product owner's vision.
 - During development, the backlog also contains new features, changes to existing features, defects needing repair, and technical improvements.
- The product owner collaborates with internal and external stakeholders to gather and define the product backlog items.
 - High-value items appear at the top of the product backlog and the lower-value items appear toward the bottom.

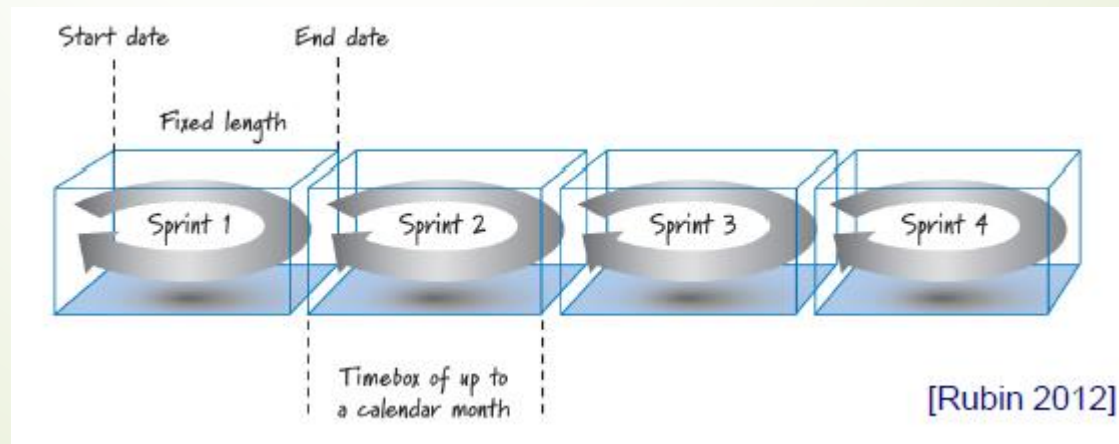


Product Backlog: Grooming

- The activity of creating and refining product backlog items, estimating them, and prioritizing them is known as **grooming**.
- Product backlog items are placed in the correct sequence using factors such as **value**, **cost**, **knowledge**, and **risk**.
- Prioritization requires **estimation of** the size of each product backlog item.
 - Size equates to cost.
 - Scrum does not dictate which size measure to use.
 - Relative size measures are usually used; such as **story points** or **ideal days**.
 - Instead of the absolute value, the relative size of an item compared to other items is considered.

Sprints

- In Scrum, work is performed in iterations or cycles of up to a calendar month called sprints.
- The work completed in each sprint should create something of tangible value to the customer or user.
- Sprints are time-boxed so they always have a fixed start and end date, and generally they should all be of the same duration.
- As a rule we do not permit any goal-altering changes in scope or personnel during a sprint, unless absolutely necessary.





References



- Rubin, K.S., Essential Scrum: A Practical Guide to the Most Popular Agile Process, Addison-Wesley, 2012.
- Schwaber, K., Sutherland, J., The Scrum Guide, Published online at: <http://www.scrumguides.org/>, July 2016.