



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

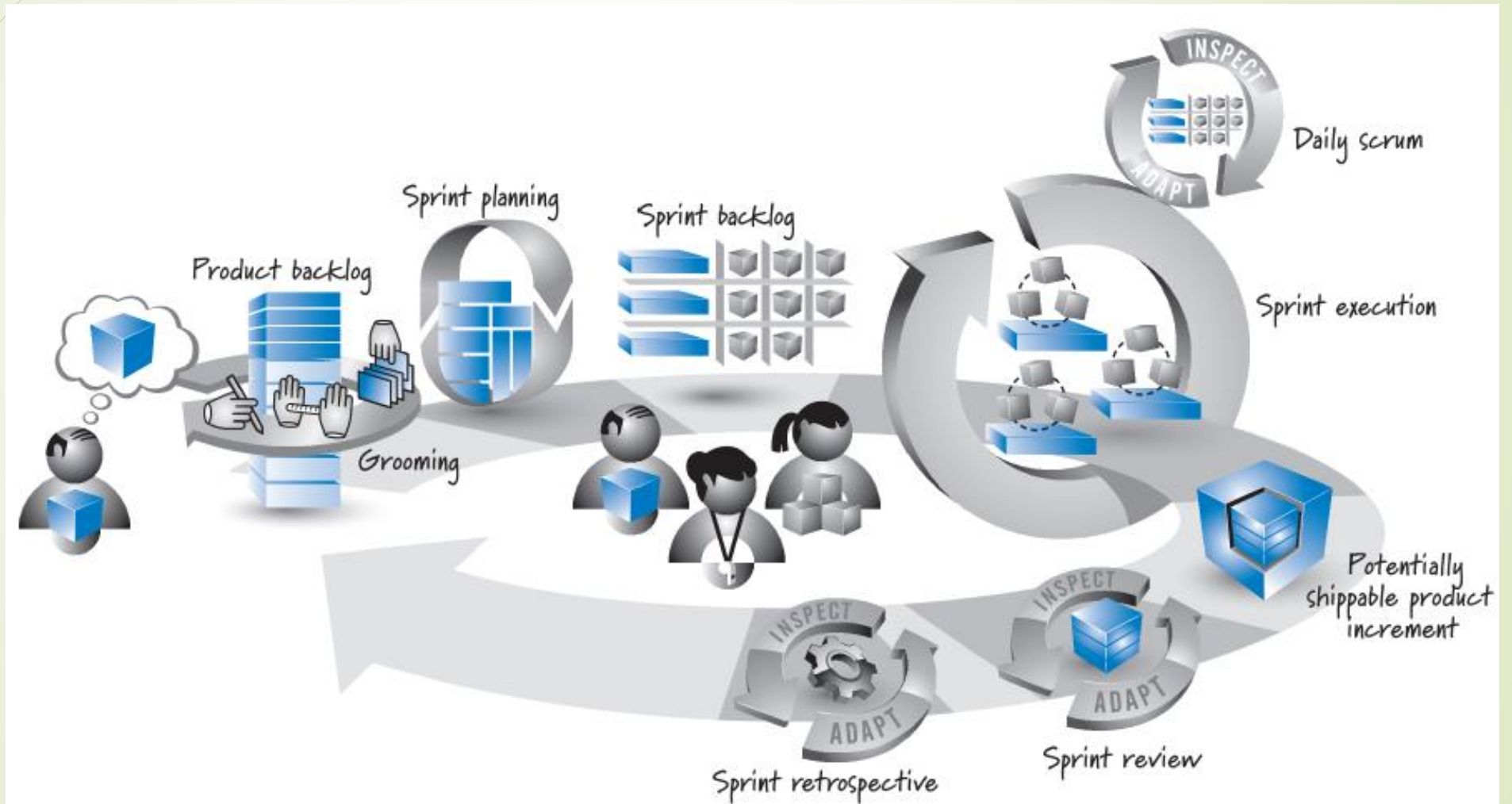
- A cross-functional collection of various types of people who are responsible for designing, building, and testing the product
 - Self-organizes to determine the best way to accomplish the goal set out by the Product Owner.
 - Typically five to nine people in size
 - Members must collectively have all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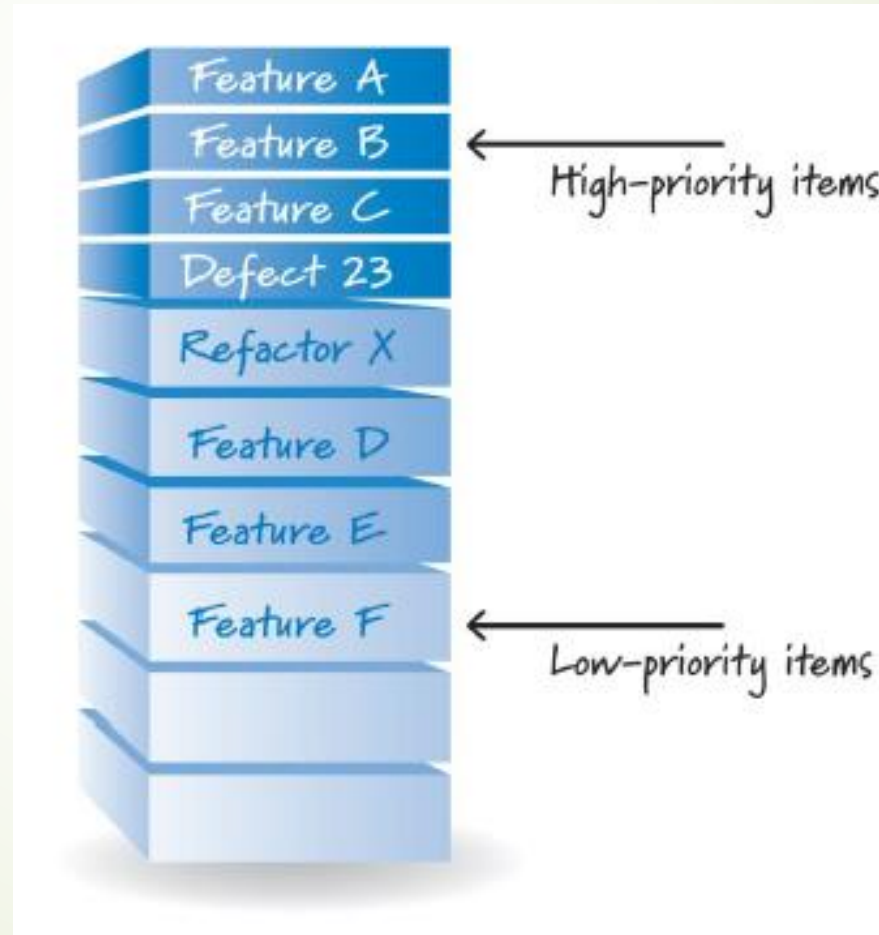
Scrum Process: Activities and Artifacts

- **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.

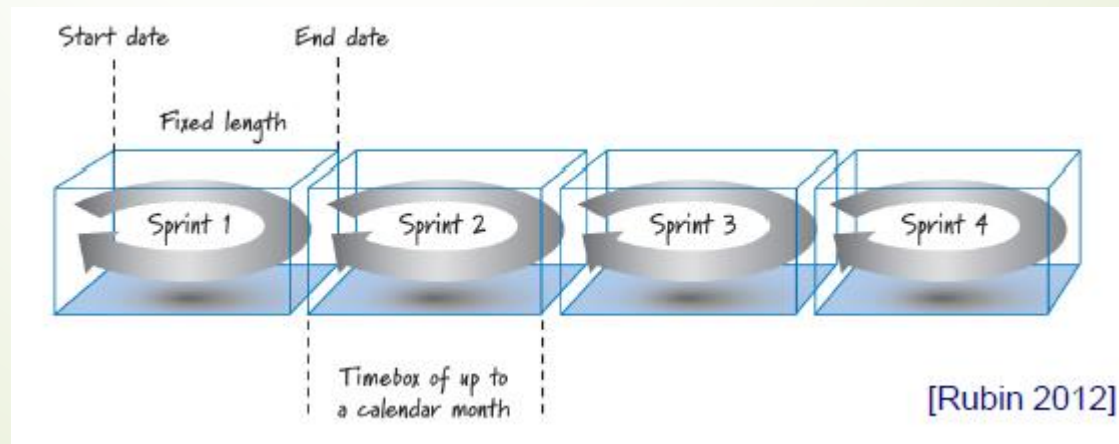


Product Backlog: Grooming

- 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.





Sprint Planning

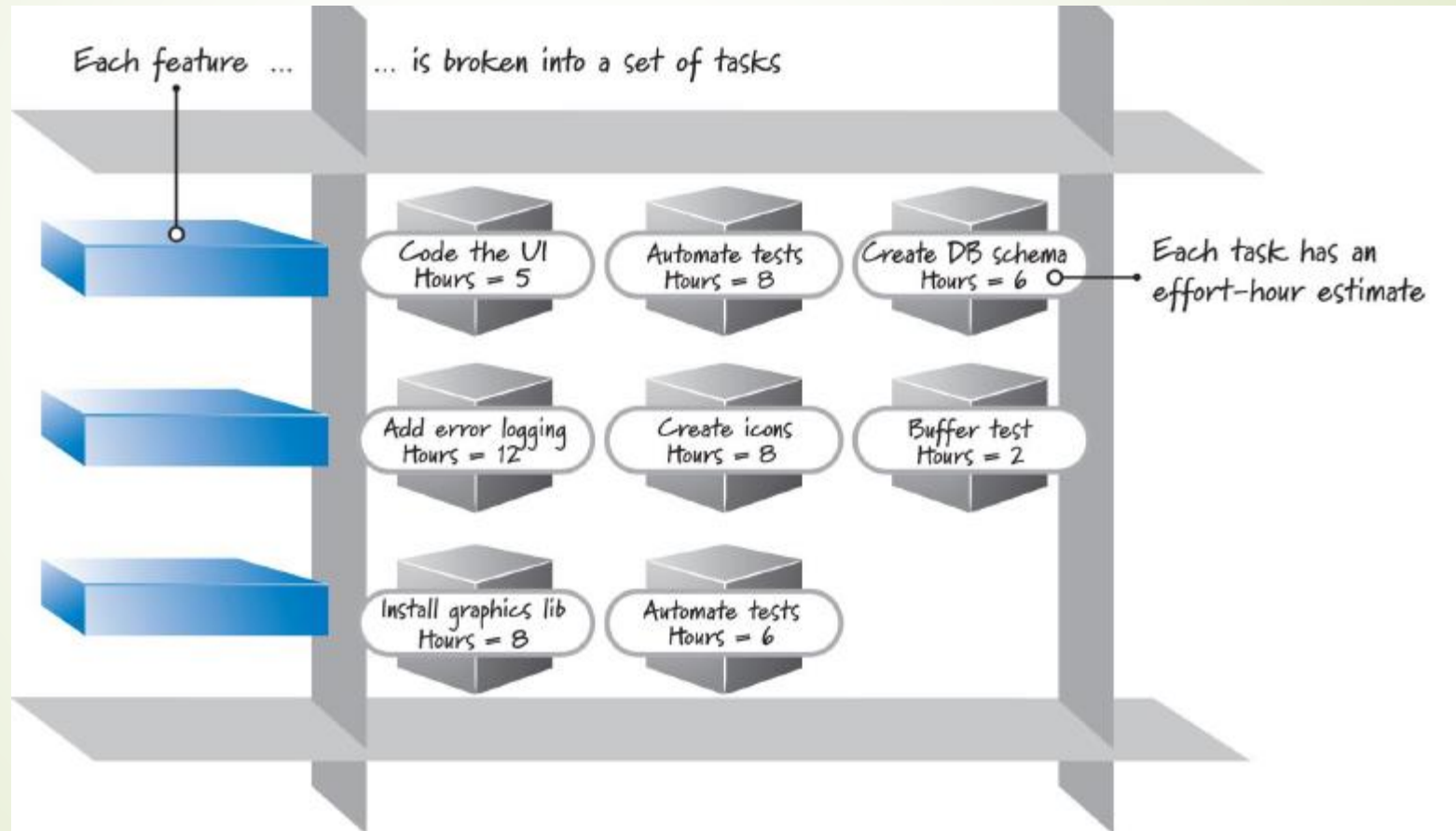
- To determine the most important subset of product backlog items to build in the next sprint, the Scrum team performs sprint planning.
- During sprint planning, the product owner and development team agree on a **sprint goal** for the upcoming sprint.
 - Using this goal, the development team determines the high-priority product backlog items for the upcoming sprint.



Sprint Planning: Sprint Backlog

- The development team breaks down each targeted feature into a set of tasks.
 - The collection of these tasks, along with their associated product backlog items, forms a second backlog called the sprint backlog.
- The development team then provides an estimate (typically in hours) of the effort required to complete each task.
- There are several approaches that can be used for sprint planning. The preferred approach is as follows:
 - Select a product backlog item;
 - break the item down into tasks, and determine if the selected item will reasonably fit within the sprint;
 - If it does fit and there is more capacity to complete work, repeat the cycle until the team is out of capacity to do any more work.

Sprint Planning: Sprint Backlog





Sprint Execution



- The development team, guided by the Scrum Master's coaching, performs all the task-level work necessary to get the features done.
 - **“Done”** means there is a high degree of confidence that all of the work necessary for producing good-quality features has been completed.
- Exactly what tasks the team performs depends on the nature of the work.
 - For example, are we building software and what type of software, or are we building hardware, or is this marketing work?
- Nobody tells the development team in what order or how to do the task-level work in the sprint backlog.
 - Team members define their own task-level work and then self-organize in any manner they feel is best for achieving the sprint goal.




Sprint Execution: Daily Scrum

- Each day of the sprint, ideally at the same time, the development team members hold a time-boxed (15 minutes or less) daily scrum.
- The Scrum Master facilitates the meeting and each team member answers three questions for the benefit of the other team members:
 - What did I accomplish since the last daily scrum?
 - What do I plan to work on by the next daily scrum?
 - What are the obstacles that are preventing me from making progress?
- By answering these questions, everyone understands:
 - The big picture of what is occurring;
 - How they are progressing toward the sprint goal;
 - Any modifications they want to make to their plans for the upcoming day's work; and
 - What issues need to be addressed.



Sprint Execution: Rules of Daily Scrum

- The daily scrum is an **inspection**, **synchronization**, and **adaptive** daily planning activity that helps a self-organizing team do its job better.
- The daily scrum is not a problem-solving activity.
 - Rather, many teams decide to talk about problems after the daily scrum and do so with a small group of interested people.
- The daily scrum is not a traditional status meeting.
- At the daily scrum, only the **pigs** should talk; the **chickens**, if any, should attend as observers.



Sprint Execution: Potentially Shippable Product Increment

- In Scrum, we refer to the sprint results as a **potentially shippable product increment**.
- Whatever the Scrum team agreed to do should be really done according to its agreed-upon **definition of done**.
- “Potentially shippable” does not mean that what got built must actually be shipped.
 - Shipping is a business decision, frequently influenced by things such as:
 - “Do we have enough features to justify a deployment?” or
 - “Can our customers absorb another change given that the last release was made just two weeks ago?”
- Potentially shippable is better thought of as a state of confidence that there is no materially important work left undone.



Sprint Execution: Definition of Done

- 1. This definition specifies the degree of confidence that the work completed is of good quality and is potentially shippable.
 - A bare-minimum definition of done should yield a complete slice of functionality that is designed, built, integrated, tested, and documented.
 - An aggressive definition of done enables the business to decide each sprint if it wants to ship what got built to internal or external customers.
- Over time some teams may vary the definition of done:
 - For Example, in the early stages of development, having features that are potentially shippable might not be economically feasible or desirable.
 - In this situation, the definition of done might be a slice of product functionality that is sufficiently functional and usable to generate feedback.



Sprint Review

- The goal is to inspect and adapt the **product** that is being built, as well as the **plan**.
- Participants include the Scrum team, stakeholders, sponsors, customers, and interested members of other teams.
- Conversation is focused on reviewing the just-completed features in the context of the overall development effort.
- Everyone in attendance gets clear visibility into what is occurring and has an opportunity to help guide the forthcoming development.
- Bidirectional information flow:
 - The people who are not on the Scrum team get to sync up on the development effort and help guide its direction.
 - Scrum team members gain a deeper appreciation for the business and marketing side of their product.



Sprint Retrospective

- An opportunity to inspect and adapt the Scrum **process**.
- The development team, Scrum Master, and product owner meet to discuss what is and is not working with their Scrum process and its associated practices.
- The focus is on continuous process improvement.
 - The Scrum team identifies and commits to a practical number of process improvement actions, to be undertaken by the team in the next sprint.



References



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