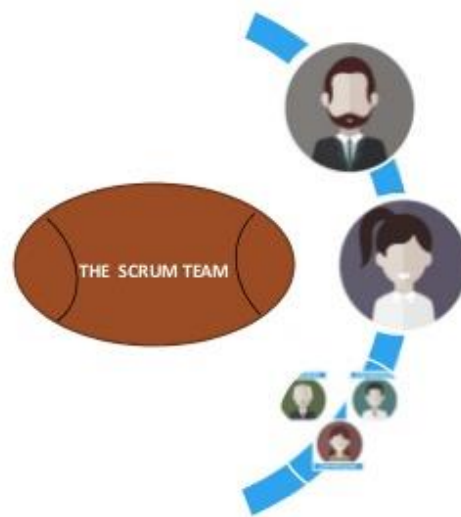


## Scrum Master handbook

Prepared for Professional Scrum Master I Exam



Version 1.0

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Disclaimer: Contents of this hand-book have been referenced from the "Scrum Guide" developed and sustained by Ken Schwaber and Jeff Sutherland. Please refer to <https://www.scrum.org/> for more details on trainings and certifications.

## 1. What is Scrum?

Scrum is a framework for developing and sustaining complex products. A framework in which complex adaptive problems can be addressed. It is lightweight, simple to understand and yet difficult to master.

To simplify, Scrum is not a process or a technique – it is a framework within which you can use different processes and techniques.

It has roles, events, artefacts and rules that bind them together. Each component has a specific purpose. Scrum takes an iterative and incremental approach – optimizing predictability and control risk.

*Scrum has its foundation based on the empirical process theory – where knowledge comes from experience and decisions are made based on what is known.*

*There are three pillars that uphold every implementation of empirical process control.*

- *Transparency*
- *Inspection*
- *Adaptation*




### 1.1. Scrum Values

The five core values that are reflective in the work of a Scrum Team.

- People personally Commit to achieving the goal of the Scrum team
- Scrum member have the Courage to do the right thing
- Everyone's Focus is on the sprint and Scrum team goals
- Everyone agrees to be Open about all the work and challenges
- Scrum team members Respect each other of being capable and independent

## 2. Scrum Team

A Self-organised and cross functional team – designed to optimize flexibility, creativity and productivity.

Role	Description	Rules
<b>Product Owner</b> 	<ul style="list-style-type: none"> <li>Maximize the value of product and work of the development team.</li> <li>Sole person responsible for managing the product backlog.</li> </ul>	<ul style="list-style-type: none"> <li>Product Owner is one person, not a committee.</li> <li>Only a Product owner can make changes to product backlog item's priority.</li> <li>Only a product owner can cancel a sprint under the influence of stakeholders, scrum master and the development team.</li> </ul>
<b>Scrum Master</b> 	<ul style="list-style-type: none"> <li>Responsible for making sure everyone understands Scrum and adheres.</li> <li>Facilitate Scrum events.</li> <li>Coach the team.</li> <li>Remove impediments.</li> <li>Help by organisation to adopt Scrum.</li> </ul>	<ul style="list-style-type: none"> <li>Scrum Master ensures only helpful interactions are taking place with the development team and anyone outside.</li> <li>Scrum Master is a Servant-Leader.</li> </ul>
<b>Development Team</b> 	<ul style="list-style-type: none"> <li>Self-organised and accountable</li> <li>No one tells the development team how to turn the backlog item into increments of realisable product.</li> <li>Cross functional team with all skills to create a product increment.</li> </ul>	<ul style="list-style-type: none"> <li>Development team shouldn't act on anyone else's request.</li> <li>Team size should be between 3 &amp; 9.</li> <li>Everyone's title is Developer and there shouldn't be any sub teams.</li> <li>No one can instruct development team to work on different set of requirements.</li> <li>The number of items from the backlog for the sprint is solely up to the development team</li> </ul>

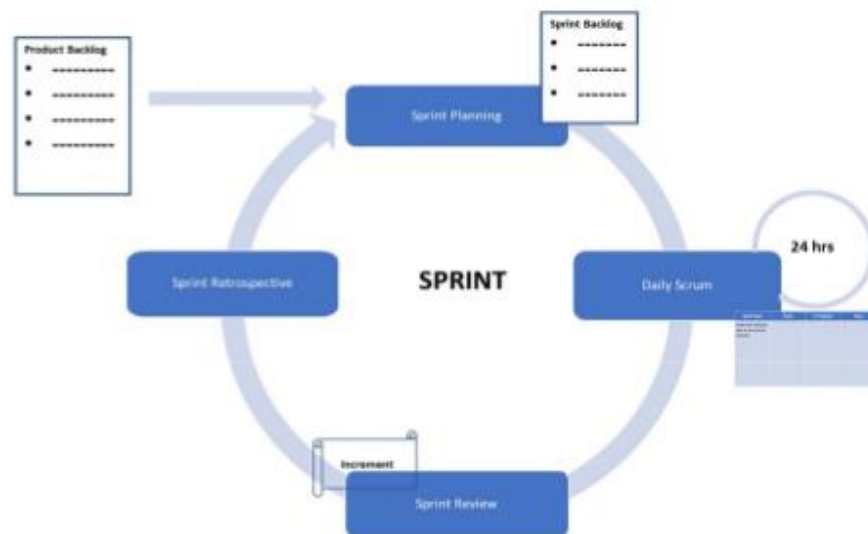
### 3. Scrum Events

*All events in Scrum are time boxed.*

*Sprint duration cannot change once it's started. However, it can be cancelled before the time box is over. Only a Product Owner can cancel a Sprint. If the organisation changes direction or the market or the technology conditions change.*

*Events enable transparency and create an opportunity to inspect and adapt.*

The Sprint is the heart of Scrum, a time box of one month or less during which a DONE, usable, and potential releasable product increment is created.



## Scrum Master Handbook

Events	Time box*	Agenda	Required
Sprint Planning	08 Hours	<ul style="list-style-type: none"> <li>What items can be done?</li> <li>How will the work get done?</li> </ul>	The Scrum
Daily Stand-ups	15 Minutes	<ul style="list-style-type: none"> <li>What I did yesterday</li> <li>What will I do today</li> <li>Any Impediments</li> </ul>	The Development team
Sprint Review	04 Hours	<ul style="list-style-type: none"> <li>Product Owner starts with What items are done from the backlog</li> <li>Development team talks about What went well, what problem it ran into, How the problems were solved</li> <li>Development team demonstrates the work it has DONE</li> <li>Product owner projects the likely completion dates</li> <li>Collaborate on what to do next</li> </ul>	The Scrum Team and the Stakeholders
Sprint Retrospective	03 Hours	<ul style="list-style-type: none"> <li>How did the last Sprint go with respect to – people, relationships, process and tools</li> <li>Major items that went well and potential improvements</li> <li>Plan to implement improvements in the next sprint</li> </ul>	The Scrum Team

\*Time box mentioned above is for one month sprint. For short sprint, it's usually shorter.

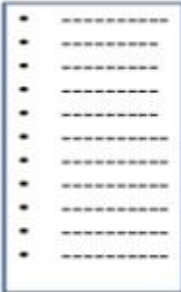
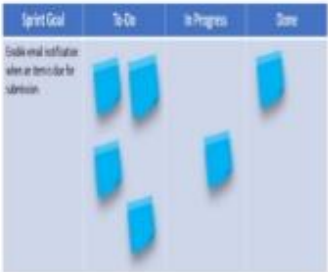
### Scrum Activities - Backlog refining or grooming

This is an on-going activity and should not take more than 10 % of the development team's time where product backlogs are groomed or refined.

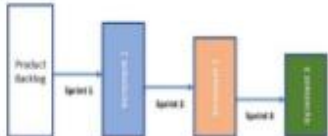
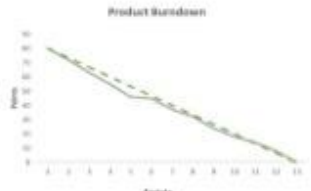
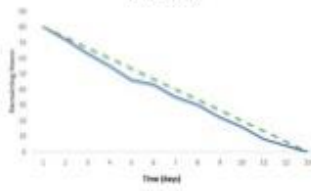
The product owner is responsible for prioritizing the product backlog items and the development team is responsible for estimating them.

#### 4. Scrum Artefacts

*Scrum's artefacts reflect the three pillars of the Empirical Theory Process in the work or value to increase transparency and opportunities for inspection and an enhanced scope for adaptation.*

Artefact	Description	Owner
<p>Product Backlog</p> 	<ul style="list-style-type: none"> <li>Product backlog is an ordered list of everything that's needed to complete a product. It is the single source of a living list of requirement.</li> <li>Product owner is responsible to maintain and prioritize the backlog items.</li> <li>Product backlog is dynamic and never complete.</li> <li>Sprint can start as soon as there are enough items in the backlog.</li> <li>There is always only one product backlog.</li> </ul>	Product Owner
<p>Sprint Backlog</p> 	<ul style="list-style-type: none"> <li>The sprint backlog is subset of product backlog.</li> <li>Development team chooses the items for the sprint.</li> <li>The sprint backlog is a list of items that should be done to meet the sprint goal.</li> <li>Any change to the list is discussed and understood in the daily scrum.</li> <li>Sprint backlog items and the sprint goal doesn't change after the sprint planning and the development team should focus on the delivery an increment "DONE".</li> </ul>	Development Team

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<p>Increment</p> <p>e.g.</p> <p>Increment 1 = Sprint 1</p> <p>Increment 2 = Sprint 1 + Sprint 2</p> <p>Increment 3 = Sprint 1 + Sprint 2 + Sprint 3.</p> 	<ul style="list-style-type: none"> <li>An Increment is a sum of all completed product backlog items and the items of the increments of all previous sprints.</li> </ul>	<p>Development Team</p>
<p>Monitoring progress towards a Goal (delivering the product)</p> 	<ul style="list-style-type: none"> <li>The total work remaining to reach the goal can be summed.</li> <li>The product owner compares the amount of work remaining against the previous sprint reviews to assess the progress.</li> </ul> <p><i>Most commonly used techniques are burn-downs and burn-ups charts.</i></p>	<p>Product Owner</p>
<p>Monitoring Sprint Progress</p> 	<ul style="list-style-type: none"> <li>The sum of remaining work to deliver an increment which is reviewed at the daily scrum.</li> <li>The sprint progress information can be represented by a burn-down chart.</li> </ul>	<p>Development Team</p>



## 5. Progress tracking tools

Burndown charts: Burn-down chart shows the progress the development team is making and is a powerful tool for visualising progress and work remaining. Burn-down charts may be used for financial tracking, resource tracking etc. In respect to a sprint, a burn down chart is represented as -

1. Vertical Axis – Remaining work (total estimated hours) for the sprint or product backlog
2. Horizontal Axis – Time, in days or sprints

A burn-down chart enables everyone to view the status of a sprint at any time.

## 6. Estimation Techniques

There are number of estimation techniques used in Agile. Most widely used in planning is the poker technique to estimate items.

Participants use cards to estimate an item. This exercise is repeated in iterations until everyone's estimates are unanimous.

Units used are Hours, days or story points.

Other techniques in practice are:

1. The Bucket System
2. Big/Uncertain/Small
3. Dot voting
4. T-Shirt sizes
5. Affinity Mapping and more.

## 7. Definitions

### Done

A product backlog item or an increment that is releasable is called DONE. Everyone in the Scrum team should have common understanding of DONE.

DONE should include all the development practices before the item is released into Production.

### Velocity

Average of items done per Sprint to deliver a product.

e.g. It took 5 sprints to deliver a product.

Sprint1 -10 Units

Sprint2 - 12 Units

Sprint3 - 9 Units

Sprint4 - 11 Units

Sprint5 – 13 Units

$$\begin{aligned}\text{Velocity} &= (10+12+9+11+13)/5 \\ &= 11\end{aligned}$$

Velocity of the team in this example is 11 units per Sprint.

### Time box

Fixed time-period, it is an agreed previous agreed duration which the team has been consistently delivering a task or completing a goal.

### Sprint Goal

Description of what the development team agrees to achieve in a sprint.

## 8. Reference:

<https://www.scrum.org/resources/scrum-guide>