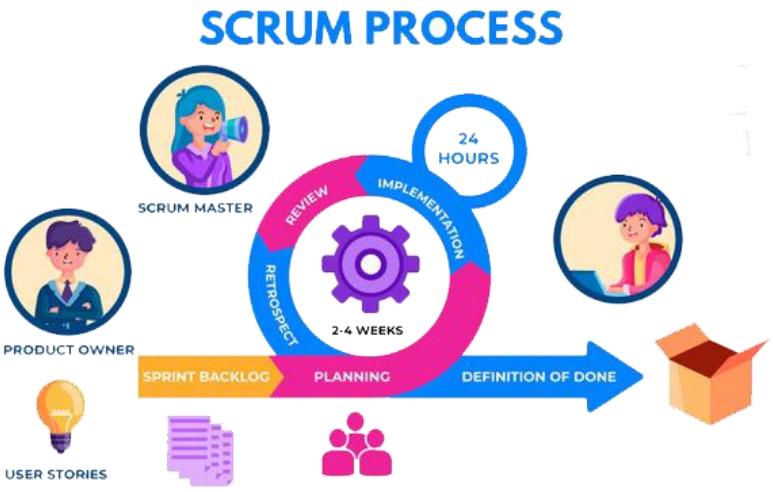
2019-2020

SCRUM AGILE DEVELOPMENT



DOSCRUM TEAM

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I. Introduction

Projects come in an array of shapes and sizes, which is why it only makes sense that there are different ways to manage and execute them. One of these ways is Scrum project management, a method that promotes a smarter way of working so that you can accomplish more.

Scrum is a lightweight framework designed to help small, close-knit teams of people develop complex products.

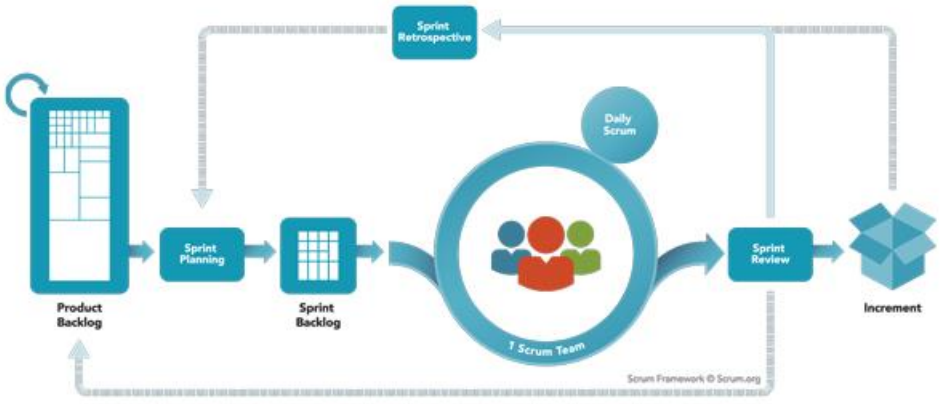
This tiny course is a humble introduction to the various moving parts of scrum: the various roles, artifacts and events that occupy the sprint cycle.

II. Definition of Scrum

Scrum is a paradoxical process for managing complex projects. Scrum is disarmingly simple. The process, its practices, its artifacts, and its rules are few, straightforward, and easy to learn.

Scrum is:

- Lightweight
- Simple to understand
- Difficult to master



III. Scrum Roles

All management responsibilities in a project are divided among the scrum roles. There are only three Scrum roles: The Product Owner, The Team, and The Scrum Master.

III.1 Product Owner

The product owner defines the features of the product, deciding the release date and content. The Product Owner is responsible for the profitability of the product, prioritizing features according to market value, and adjust features and priority every iteration as needed. In addition, he/she accepts or rejects the work results.

III.2 Scrum Master

The Scrum Master is responsible for the Scrum process, for teaching Scrum to everyone involved in the project, for implementing Scrum so that it fits within an organization's culture and still delivers the expected benefits, and for ensuring that everyone follows Scrum rules and practices.

III.3 Development Team

The Team is responsible for developing functionality. Teams are self-managing, self-organizing, and cross-functional, and they are responsible for figuring out how to turn Product Backlog into an increment of functionality within an iteration and managing their own work to do so. Team members are collectively responsible for the success of each iteration and of the project as a whole. A team is typically about 5-9 people who are cross functional, programmers, testers, user experience designers, etc.

Members should be full time, there might be exceptions as for database administrator.

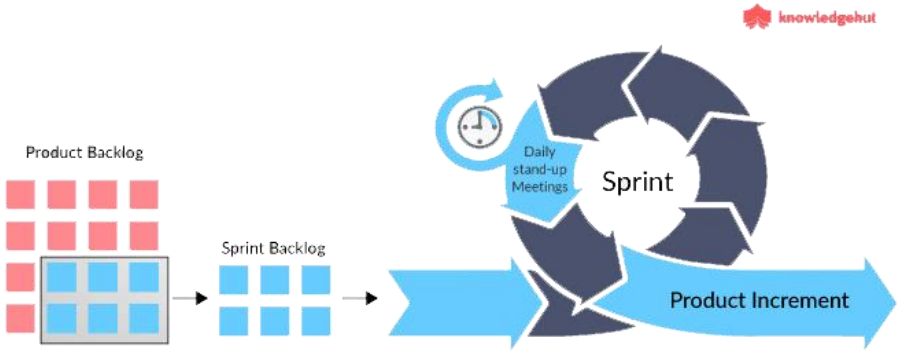
IV. Scrum Events

IV.1 Sprints

Scrum projects make progress in a series of “sprints”.

It is a contiguous process with one iteration immediately following the next without pause. Sprints are unit times in which some tasks must be done.

Its typical duration is from 2 to 4 weeks, a product is designed, coded, and tested during the sprint.



IV.2 Sprint Planning Meeting

The work to be performed in the Sprint is planned at the Sprint Planning meeting.

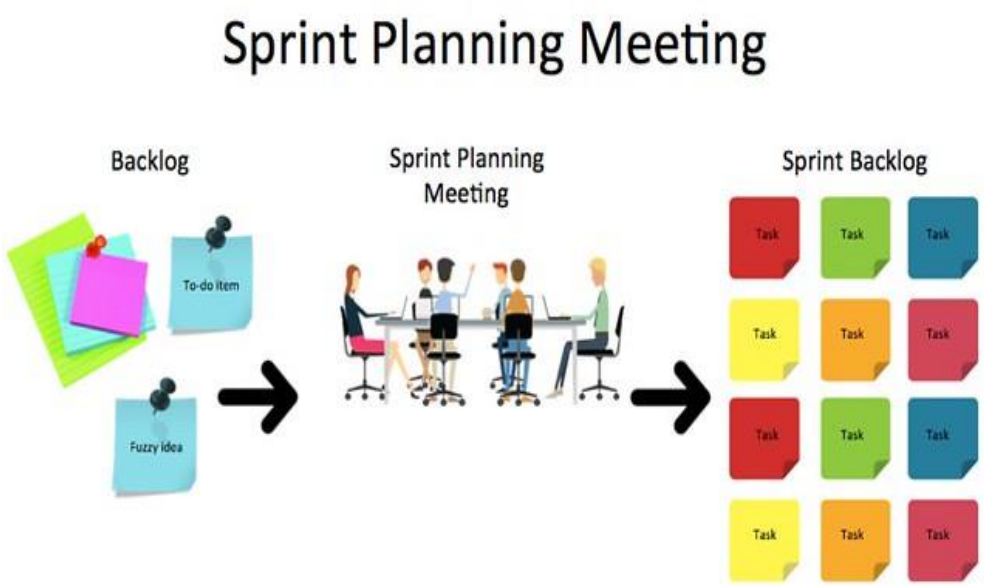
This plan is created by the collaborative work of the entire Scrum Team.

Sprint Planning is time-boxed to a maximum of eight hours for a one-month Sprint. The Scrum Master ensures that the event takes place and that attendants understand its purpose. The Scrum Master teaches the Scrum Team to keep it within the time-box.

Sprint Planning answers the following:

- What can be delivered in the Increment resulting from the upcoming Sprint?
- How will the work needed to deliver the Increment be achieved?

Work is selected from the Product Backlog and pulled into the Sprint Backlog.



IV.3 Daily Scrum Meeting

The Daily Scrum is a 15-minute event for the Development Team to and create a plan for the

next 24 hours. The Daily Scrum is held every day of the Sprint.

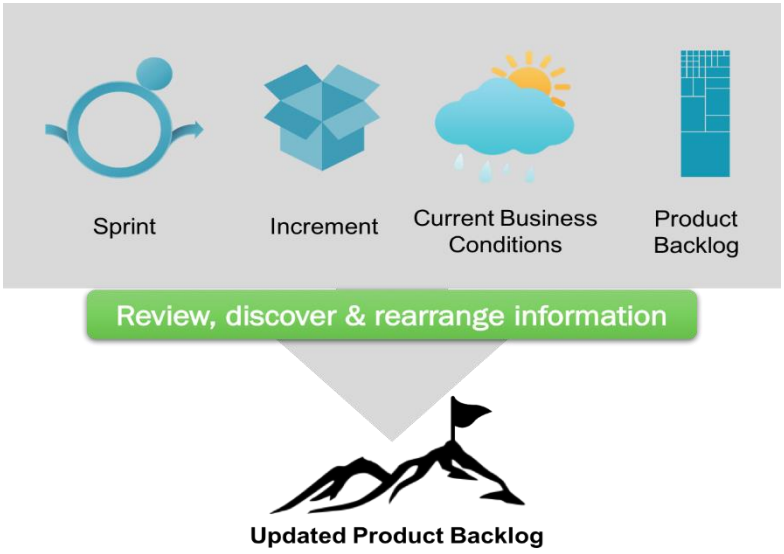
At it, the Development Team plans work for the next 24 hours. This optimizes team collaboration and performance by inspecting the work since the last Daily Scrum and forecasting upcoming Sprint work.

IV.4 Sprint Review

Sprint Review is held at the end of the Sprint to inspect the Increment and adapt the Product Backlog if needed.

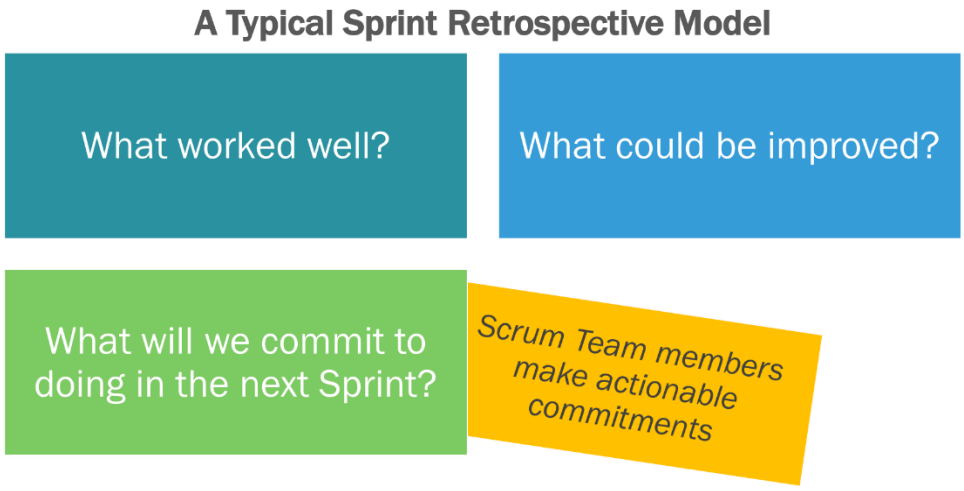
During the Sprint Review, the Scrum Team and stakeholders collaborate about what was done in the Sprint. Based on that and any changes to the Product Backlog during the Sprint, attendees collaborate on the next things that could be done to optimize value.

This is at most a four-hour meeting for one-month Sprints. The Scrum Master ensures that the event takes place and that attendees understand its purpose.



IV.5 Sprint Retrospective

The Sprint Retrospective occurs after the Sprint Review. This is at most a three-hour meeting for one-month Sprints. It is done after every sprint where the whole team participates, the scrum master, product owner and the team members, in addition customers and others may also participate.

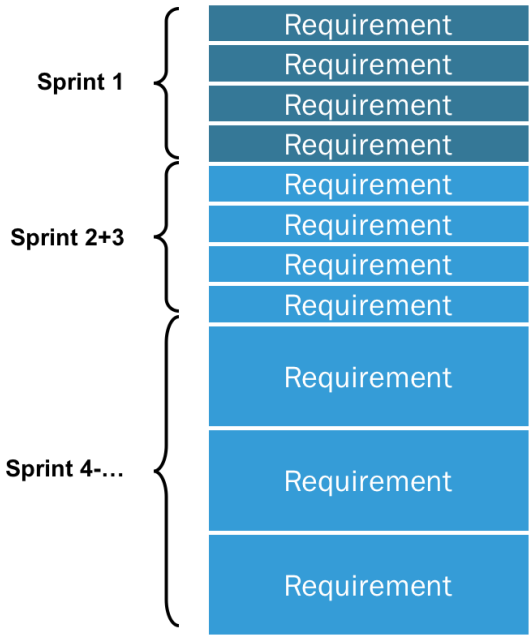


V. Scrum Artifacts

V.1 Product Backlog

The Product Backlog is an ordered list of everything that is known to be needed in the product.

The requirements for the system or product being developed by the project(s) are listed in the Product Backlog. The Product Owner is responsible for the contents, prioritization, and availability of the Product Backlog. The Product Backlog is never complete, and it is merely an initial estimate of the requirements.



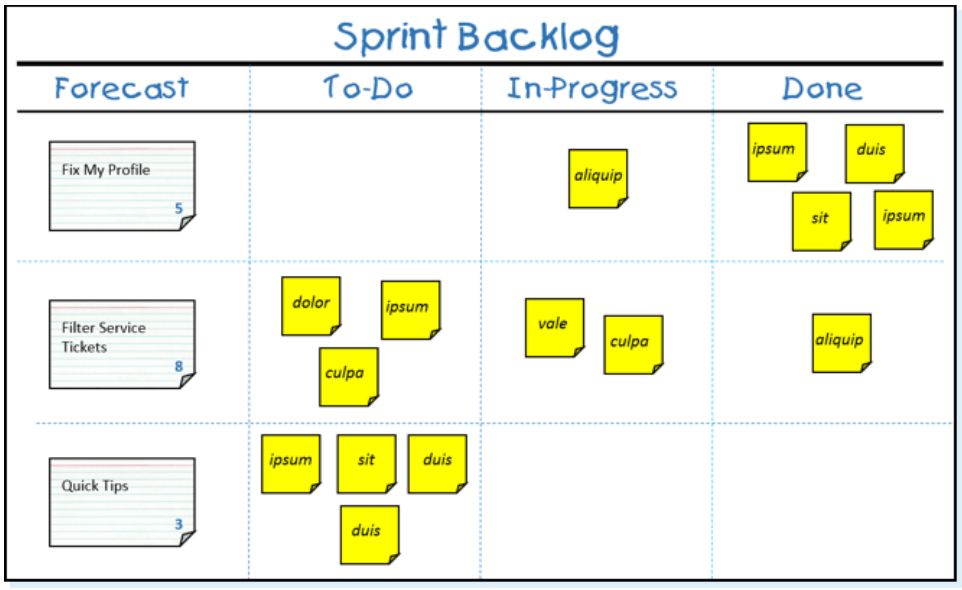
V.2 Sprint Backlog

The Sprint Backlog is the set of Product Backlog items selected for the Sprint, plus a plan for delivering the product Increment and realizing the Sprint Goal.

The Sprint Backlog is a plan with enough detail that changes in progress can be understood in the Daily Scrum. The Development Team modifies the Sprint Backlog throughout the Sprint. Only the Development Team can change its Sprint Backlog during a Sprint.

The Sprint Backlog is a highly visible, real-time picture of the work that the Development Team plans to accomplish during the Sprint, and it belongs solely to the Development Team.

Any team member can add, delete or change the sprint backlog, work for the sprint emerges, if work is unclear, define a sprint backlog item with a larger amount of time and break it down later.



V.3 Burndown Chart

A burn down chart is a graphical representation of work left to do versus time.

Typically, in a burn down chart, the outstanding work is often on the vertical axis, with time along the horizontal.

It is useful for predicting when all of the work will be completed. In the Daily Scrum the Development Team updates the Sprint Burn Down and plots the remaining work of the day. A burndown chart is almost a "must" have tool for a Scrum team for the following main reasons:

- monitoring the project scope creep
- Keeping the team running on schedule
- Comparing the planned work against the team progression

Burndown Chart Example

- Duration: 5 days
- Sprint Backlog: 8 tasks
- Velocity: 80 available hours

Step 1 – Create Estimate Effort

Suppose your ideal baseline for using the available hours over the sprint. So, in the simplest for this is the available hours divided by number of days. In this example, 80 hours over 5 days equating to 16 hours a day. In order to create the project burn-down chart, the data needs to be captured as a daily running total starting with 80 hours than 64 hours left 1 (80 – 16) at end of day, 48 hours left at end of day 2, etc.

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Effort remaining	80	64	48	32	16	0

Burndown – Estimate effort

Step 2 – Track Daily Process

The daily progress is then captured in the table against each task. It is important to remember that the value captured for each day is the estimated effort to complete the task, not the actual effort.

Task	Hours	Day 1	Day 2	Day 3	Day 4	Day 5	Total
Task 1	10	3	2	0	1	4	10
Task 2	10	3	2	0	1	4	10
Task 3	10	3	2	0	1	4	10
Task 4	10	3	2	0	1	4	10
Task 5	10	3	2	0	1	4	10
Task 6	10	3	2	0	1	4	10
Task 7	10	3	2	0	1	4	10
Task 8	10	3	2	0	1	4	10

Burndown – Daily progress

Step 3 – Compute the Actual Effort

The total remaining effort needs to be captured at the end of each day. This is the total (sum) of all of the estimated time remaining at the end of each day.

		Day 1	Day 2	Day 3	Day 4	Day 5
Actual effort	80	56	40	40	32	0
Effort remaining	80	64	48	32	16	0

Burndown – Actual effort

Step 4 – Obtain the Final Dataset

When the data is available, the project burn-down chart can be created. This is relatively simple using the line chart option available within Excel.

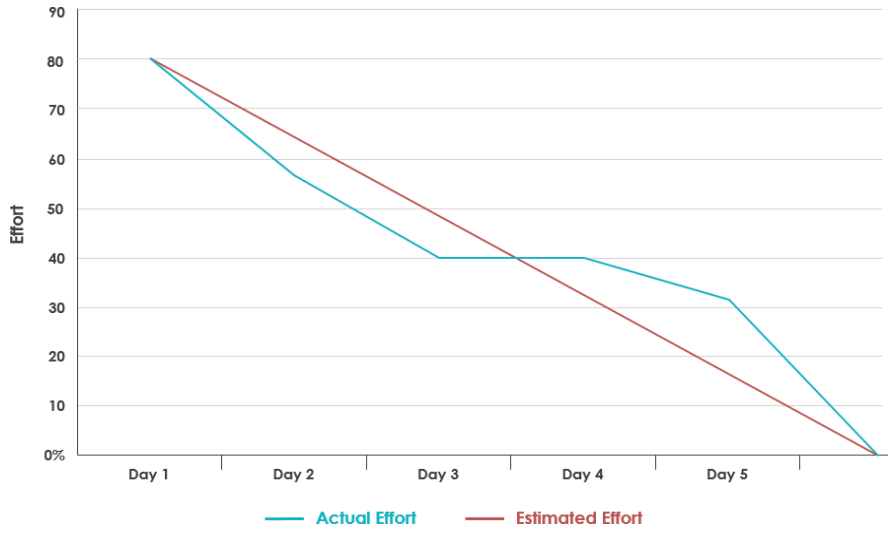
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Actual effort	80	56	40	40	32	0
Effort remaining	80	64	48	32	16	0

Burndown – Final dataset

Highlight the summary table that contains the daily total for baseline effort and estimated effort. You should also capture the heading of time period (Day 0, Day 1, etc.).

Step 5 – Plot the Burndown using the Dataset

It is very simple to create a project burn-down chart as following, as long as you know what data you are tracking.



VI. Planning A Scrum Project

The Scrum planning process sets stakeholders' expectations. These stakeholders include those who fund the project, those who intend to use the functionality created by the project, and those who will be otherwise affected by the project.

The plan is a way of synchronizing stakeholders' expectations with the Team's expectations. In the case of stakeholders who will be users of project functionality, the plan helps them organize their work so that they can be ready to take advantage of the functionality as it is implemented. In the case of stakeholders who are funding the project, the plan details their expectation of what funding is required and when the benefits of the project should be realized.

The plan is also the basis of project reporting.

At the end of the Sprint, the stakeholders attend the Sprint review meetings and compare the project's actual progress against its planned progress.

What you should do:

- Identify your project success criteria and clearly explain your sprint goals to your team and ensure they understand how they will be measured. This will bring everyone focused on the goal and in the same direction.
- Prepare a somehow complete project backlog, clearly showing priorities as well as dependencies.
- Sprint meetings are a good time to demystify your project, going into complete details of tasks and all that must be done

What you shouldn't do:

- Avoid setting up your team for failure by taking on too many too many stories than you can handle.
- Ensure the team fully understands what must be done, and avoid try to rush through things in a bid to cover more grounds.

VII. Conclusion

Scrum is a framework that helps teams work together, it allows allow cross-functional teams of 5 to 10 members to regularly deliver potentially shippable increments of a working product or service in increments of time not to exceed 30 days.

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