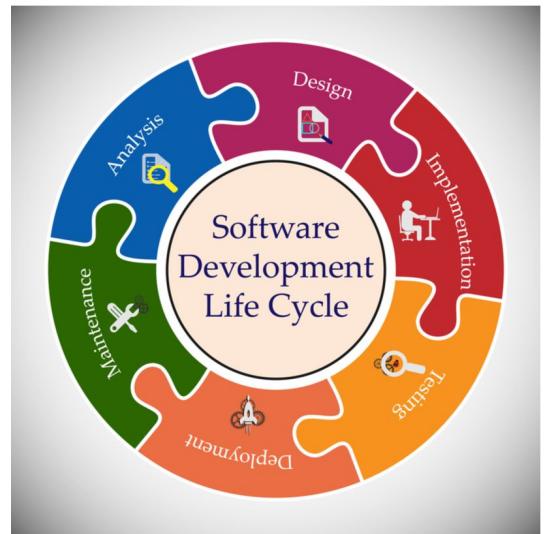


SDLC



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SDLC

Software Development Life Cycle

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XYZ TABLE AND CHAIR COMPANY



**Table Production Life Cycle
(TPLC)**



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Table of Contents

- ▶ What is SDLC ?
- ▶ Phases of SDLC
- ▶ SDLC Models
- ▶ Waterfall Model
- ▶ Agile
- ▶ SCRUM

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1

What is SDLC ?

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What is SDLC



- Systematic process to be followed for a software project.
- Structured way to create and develop software.

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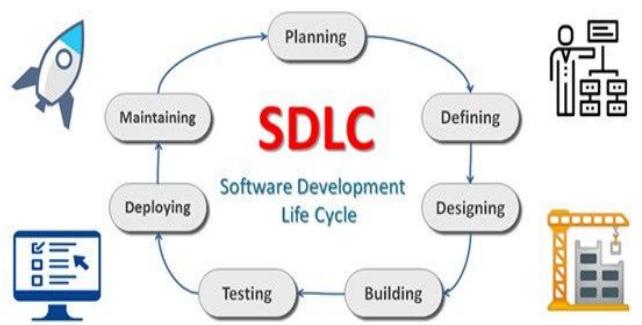
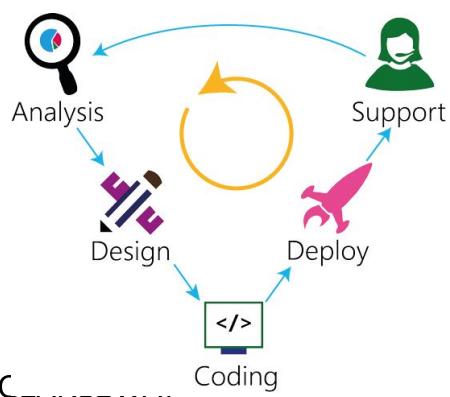


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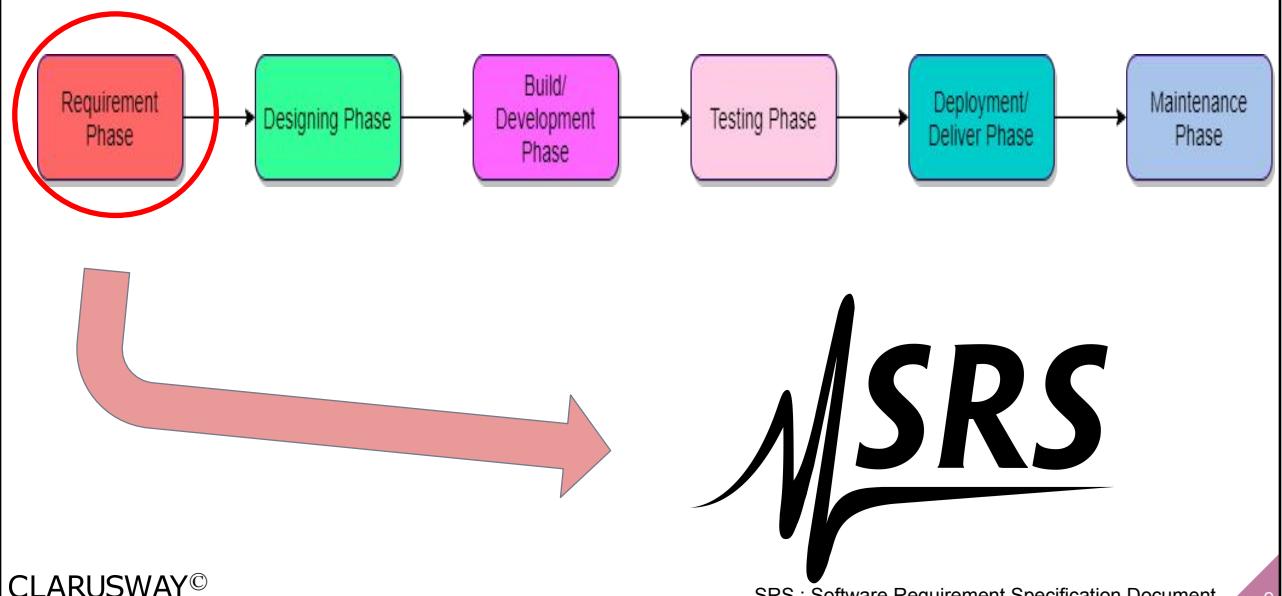
Phases of SDLC

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Phases of SDLC



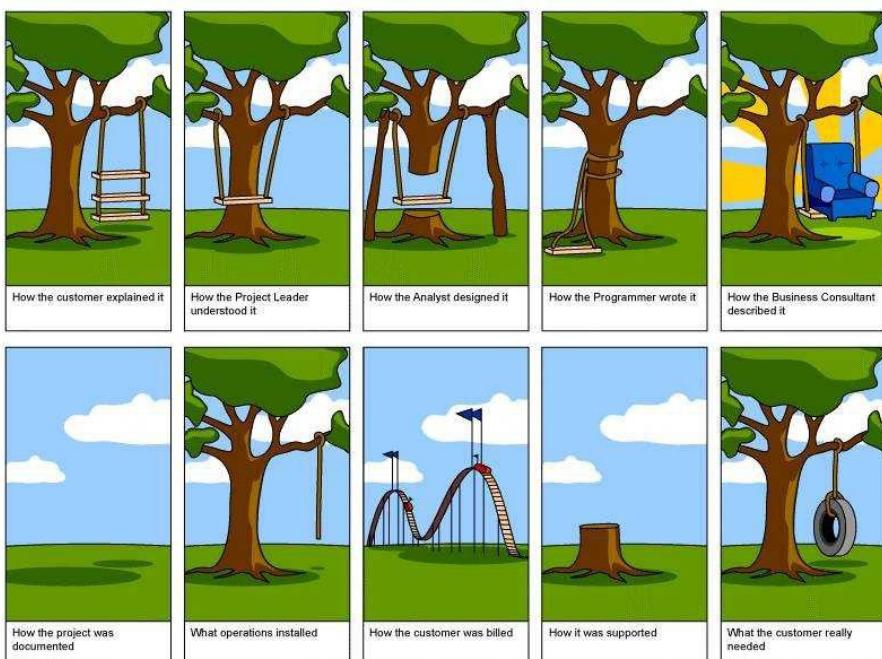
► Requirements Phase



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SRS : Software Requirement Specification Document

9

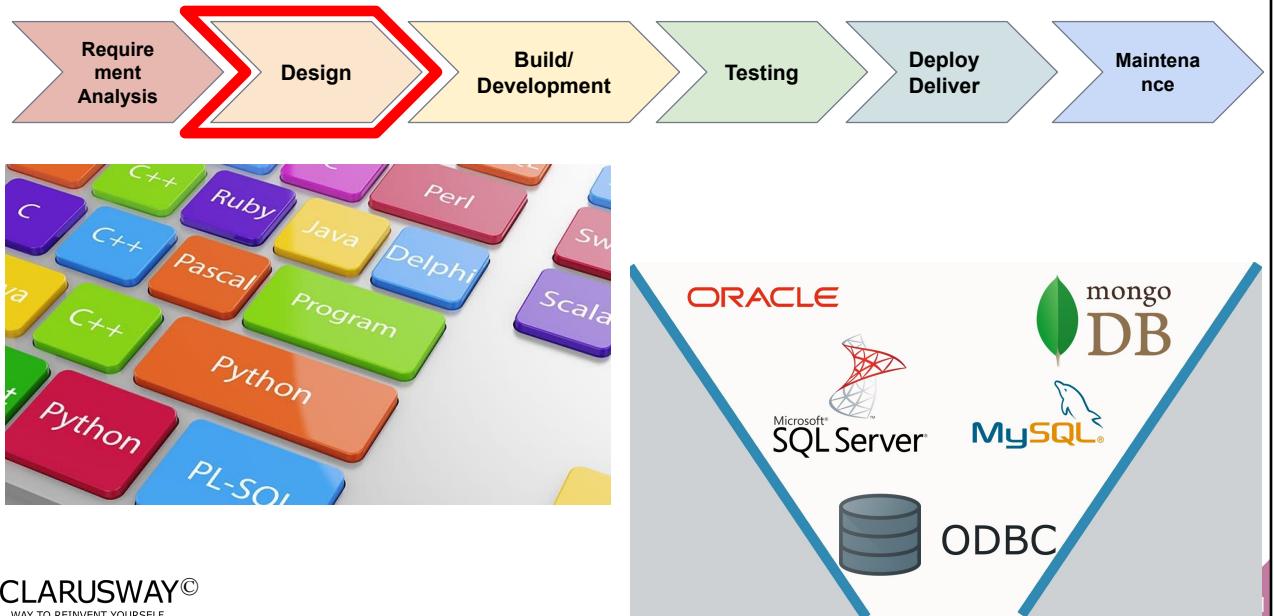


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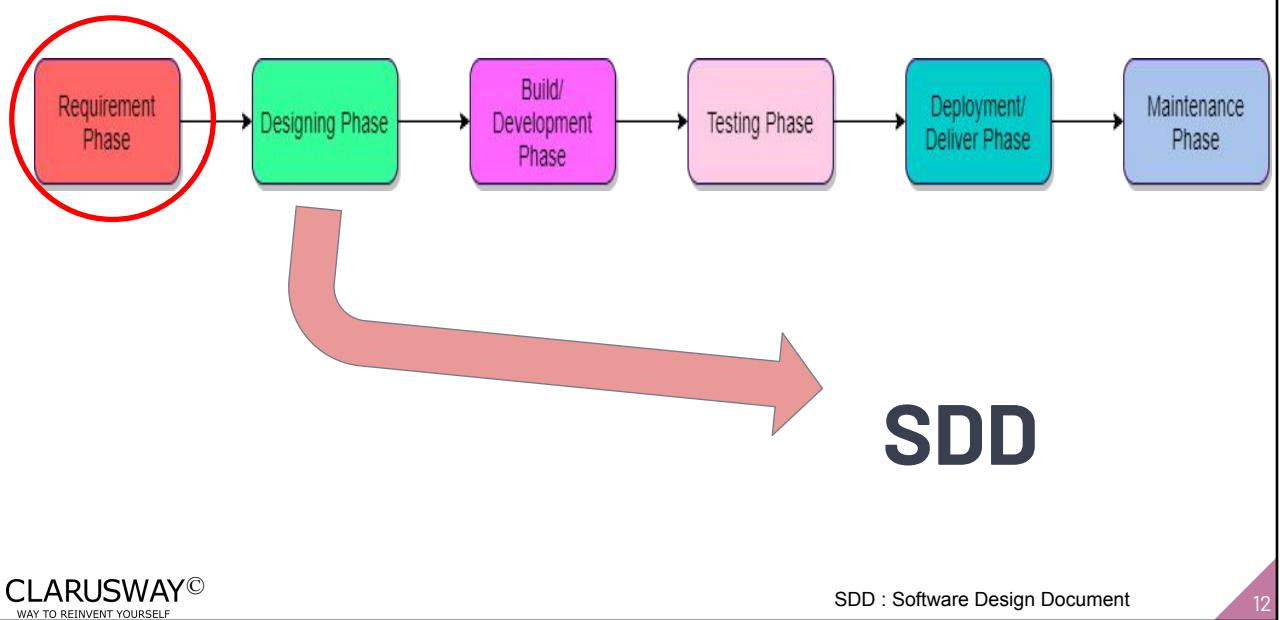
OneWolfWeb.com

10

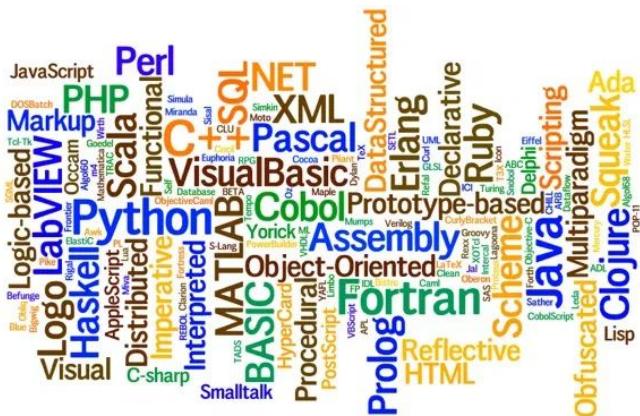
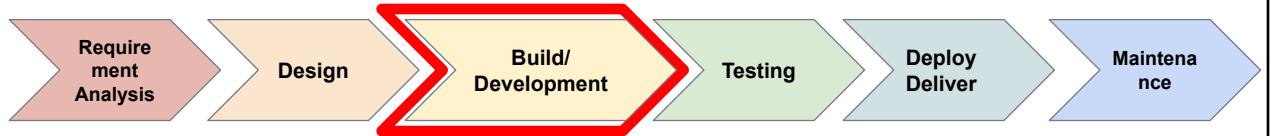
►Design Phase



► Requirements Phase



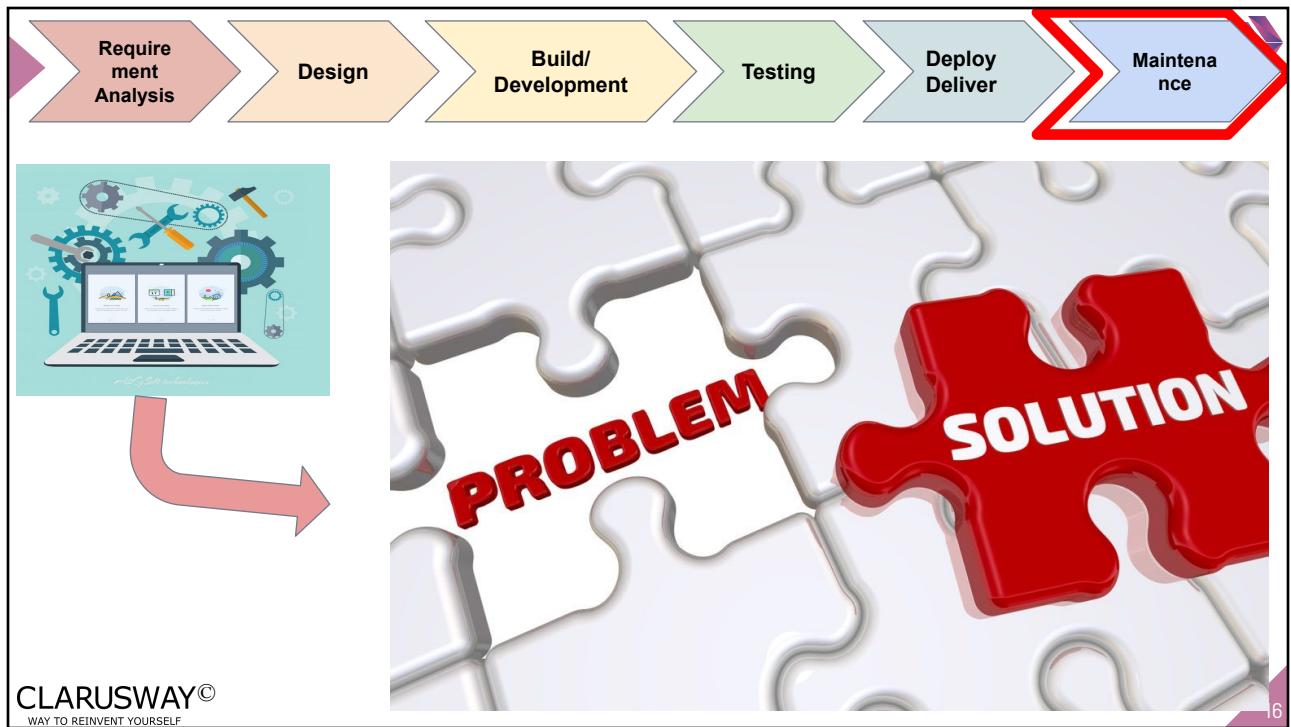
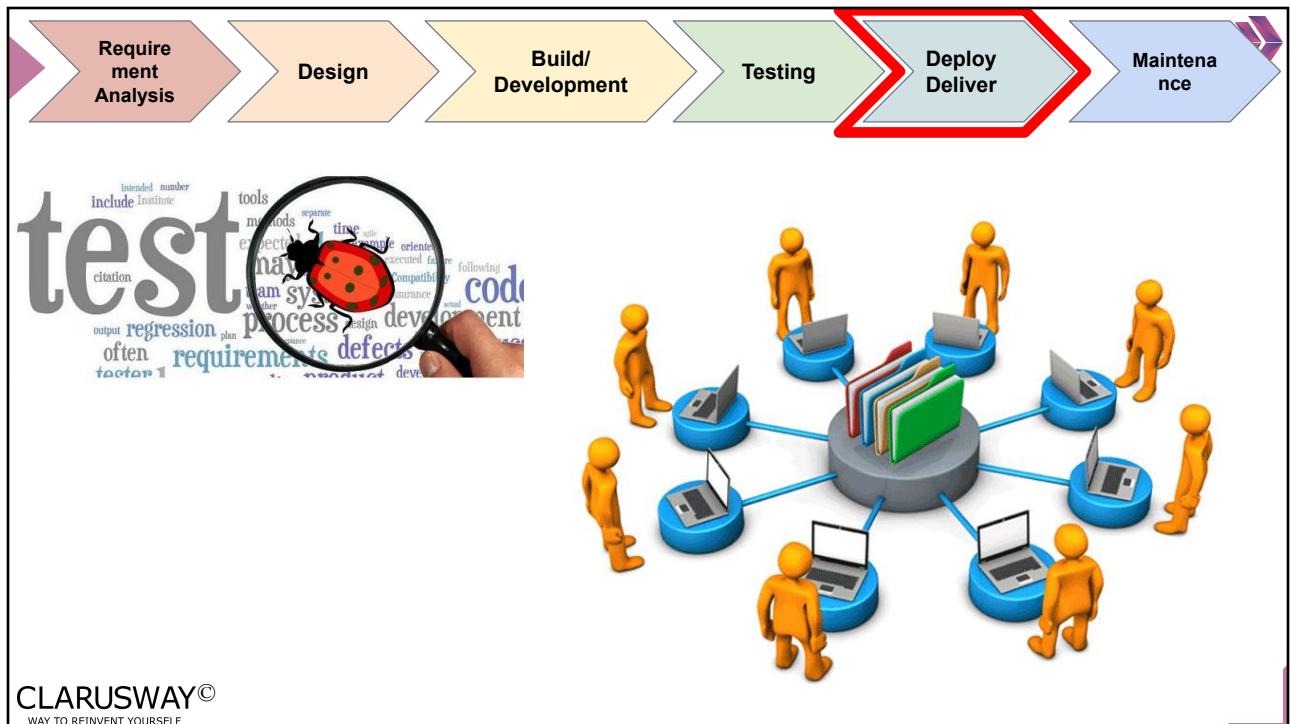
Build/Development Phase



```
args:byte, i)) rest != 999) window.onload=do
  onSeconds(args = arg1; </script> {var str=span.
  & removeChild If(data.substring(i,i+1)!=".") (sp
  & rest == fun(sp) ) {var theSpan=document.cre
  (res1 = args.toString() document.createTextNodeNo
  percent1++;window.status="10% complete"; f
  rForm = Math.floor(secTimeCode); sec.ctr
  on Seconds(data) { :var ll = return(data.sub
  e,while(||%4 != 0) var sd = name.value; bhspr
  360); else color.length=span.firstChild.data.le
  (cube) { string.speed=(spd==fun(bar): if(isNur
  = decimalToBin(sd); sqr.hlnc= fork.deg>this.
  t=decimalToBin(sd); sqr.hlnc= fork.deg>this.
```

Testing Phase





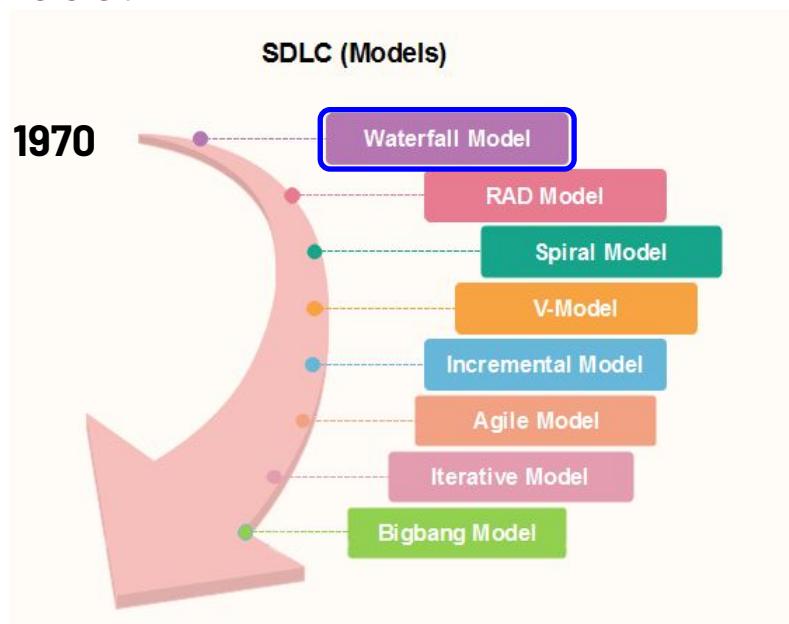


SDLC Models

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Waterfall Model

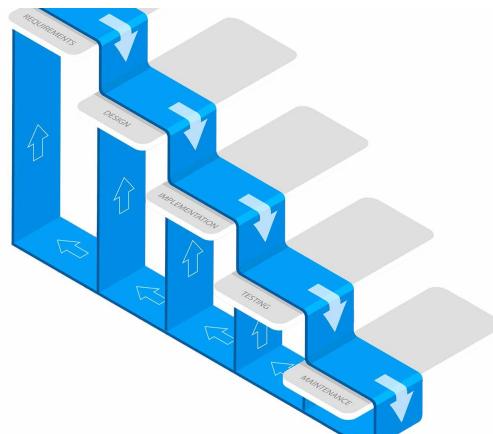


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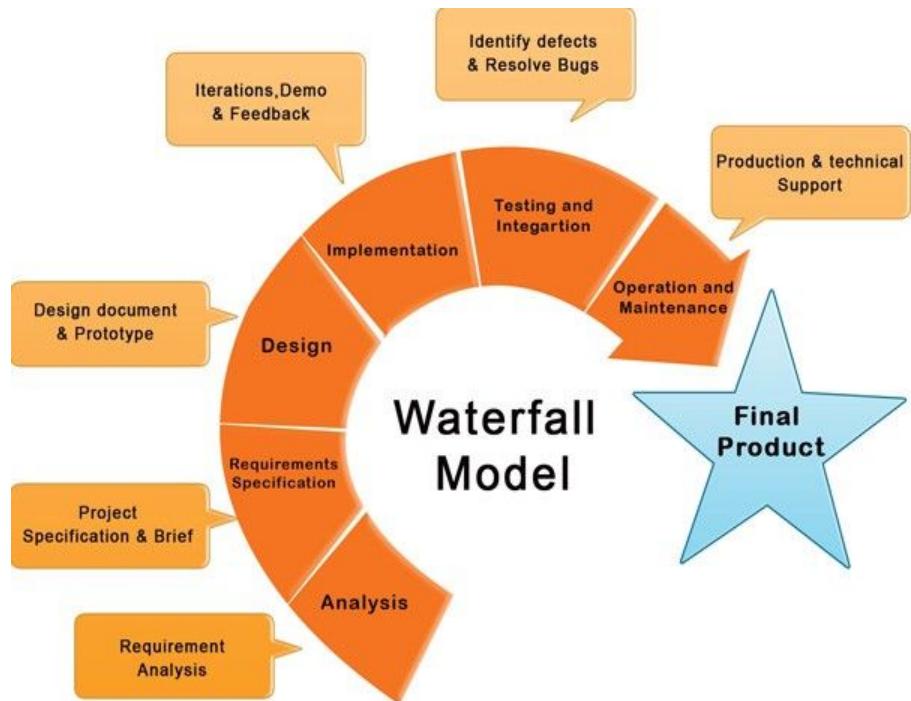
Waterfall Model

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Waterfall Model



Waterfall Model



Waterfall Model

The Waterfall model can be considered in situations where the project requirements are **well-understood, stable, and unlikely to change significantly** throughout the development process. Here are some scenarios:

- **Stable Requirements:** If the project requirements are well-defined, clear, and unlikely to undergo significant changes, the Waterfall model can be suitable.
- **Small Projects:** For small projects with straightforward requirements and limited complexity, the Waterfall model may be a pragmatic choice.
- **Fixed Budget and Schedule:** If the project has a fixed budget, timeline, and scope.

Agile

1 Agile Manifesto

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The Agile Manifesto

A group of 17 people thought:

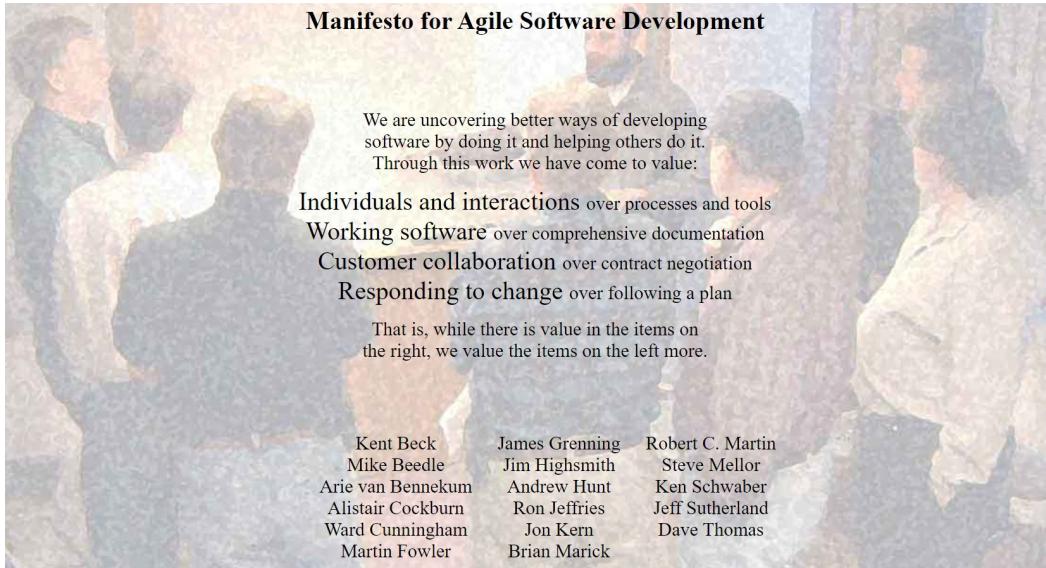
“We’re all doing these different approaches to developing software. We ought to get together and see where there are commonalities in what we’re thinking about.”

The result was a meeting at a ski resort in Snowbird, Utah in 2001.

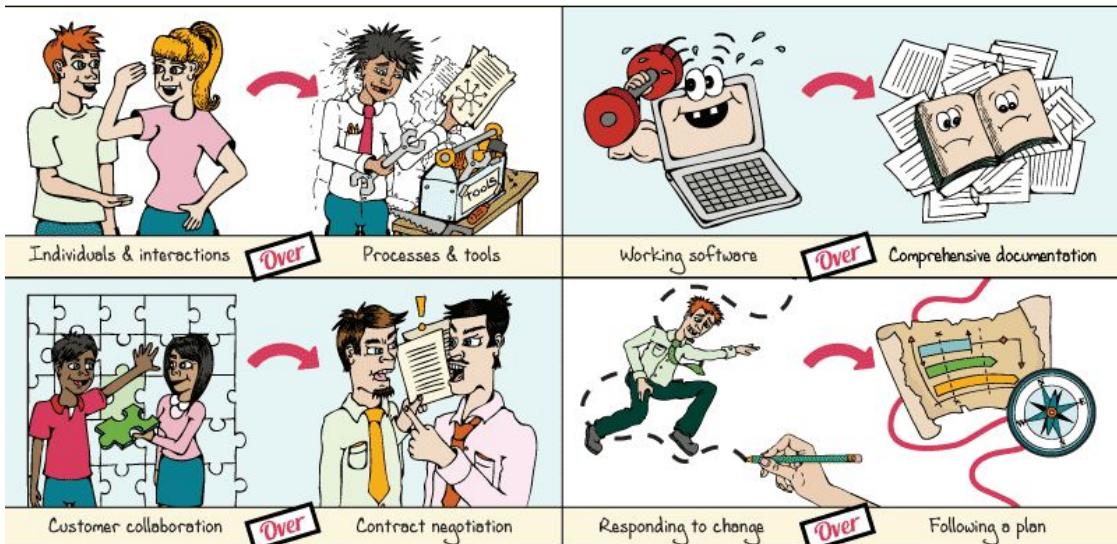


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The Agile Manifesto



The Four Values of the Manifesto

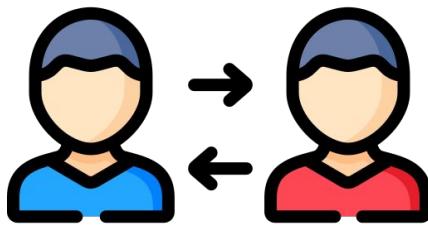


That is, while there is value in the items on the right, we value the items on the **left more**.¹⁰

► Outlining the Four Values



Individuals and Interactions
over
Processes and Tools



► Outlining the Four Values



Working Software
over
Comprehensive Documentation



► Outlining the Four Values



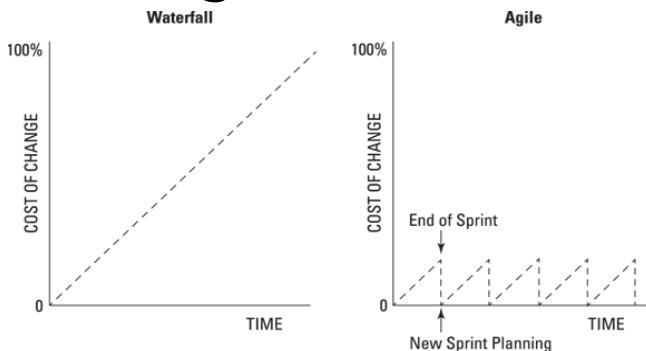
Customer collaboration
over
Contract Negotiation



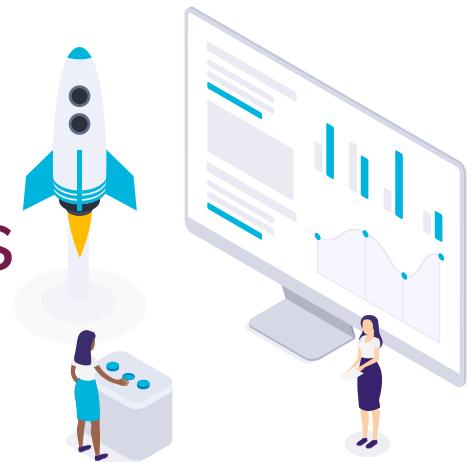
► Outlining the Four Values



Responding to change
over
Following a Plan



2 Agile Principles



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Agile Principles

1 Our highest priority is to **satisfy the customer** through early and continuous delivery of valuable software.



2 **Welcome changing requirements**, even late in development. Agile processes harness change for the customer's competitive advantage.



3 **Deliver working software frequently**, from a couple of weeks to a couple of months, with a preference to the shorter timescale.



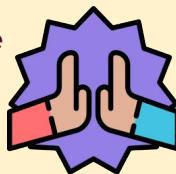
4 **Business people and developers must work together** daily throughout the project.



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► Agile Principles

5 Build projects around motivated individuals. Give them the environment and **support** they need, and **trust** them to get the job done.



7 **Working software** is the primary measure of progress.



6 The most efficient and effective method of conveying information to and within a development team is **face-to-face conversation**.

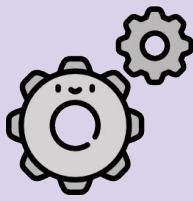


8 Agile processes promote **sustainable development**. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.



► Agile Principles

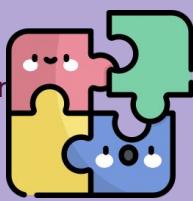
9 Continuous attention to technical excellence and good design enhances agility.



10 **Simplicity**--the art of maximizing the amount of work not done--is essential.



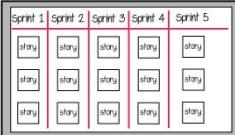
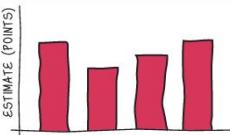
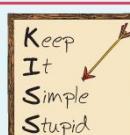
11 The best architectures, requirements, and designs emerge from **self-organizing teams**.



12 At regular intervals, the team **reflects** on how to become more effective, then tunes and **adjusts** its behavior accordingly.



12 Agile Principles

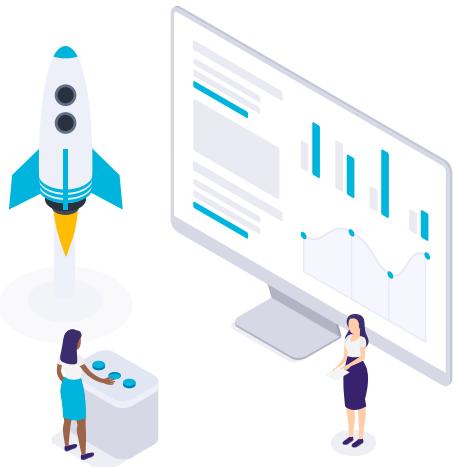
1 Satisfy the customer	2 Welcome change	3 Deliver frequently	4 Work together
			
5 Trust and support	6 Face-to-face conversation	7 Working software	8 Sustainable development
			
9 Continuous attention	10 Maintain simplicity	11 Self-organizing teams	12 Reflect and adjust
			

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3

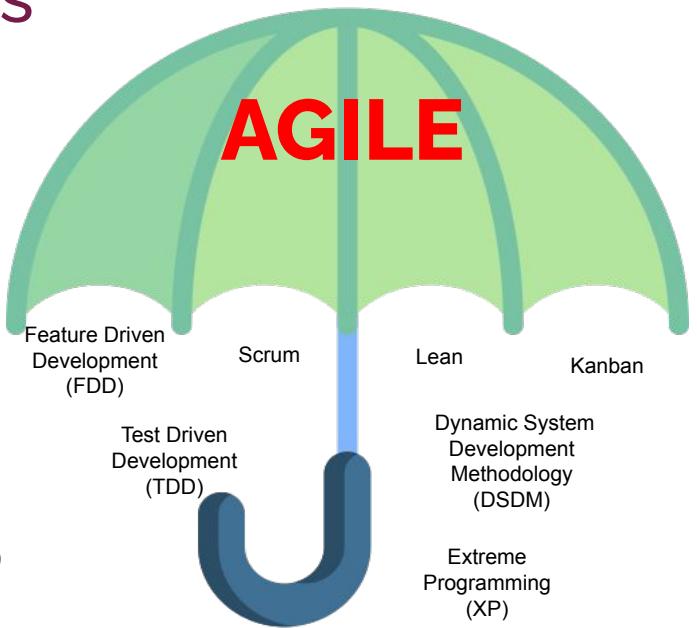
Agile Methods



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Agile Methods

Agile is an umbrella under which many specific methodologies have been developed and are thriving.

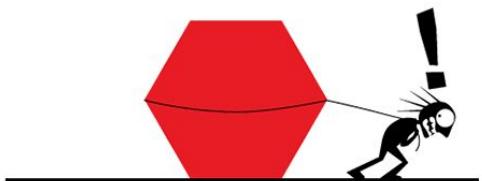


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Let's Wrap it Up

THE WATERFALL PROCESS



*'This project has got so big,
I'm not sure I'll be able to deliver it!'*

THE AGILE PROCESS



*'It's so much better delivering this
project in bite-sized sections'*

The product can be easily and rapidly developed and tested by dividing it into small pieces.

Small pieces are produced in iteration cycles.

By using iterations, changes can be made without having to wait for the final product.

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4 Scrum



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What is Scrum?

A framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.



Lightweight



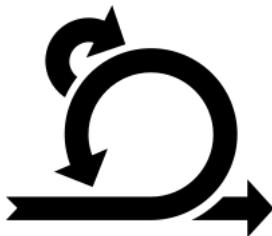
Simple to understand



Difficult to master

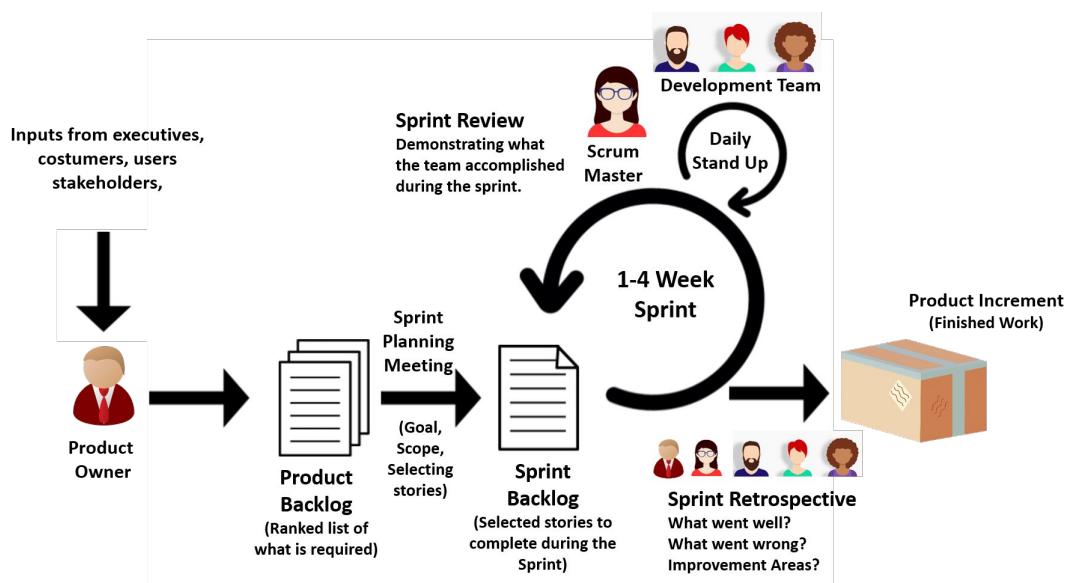
What is Scrum?

Scrum emphasizes delivering business value frequently through short iterations known as sprints.

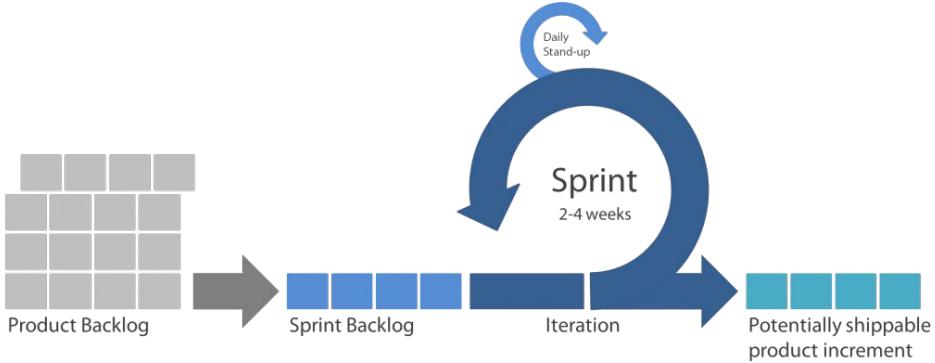


This gives visibility to the work that's being done and creates opportunities for feedback.

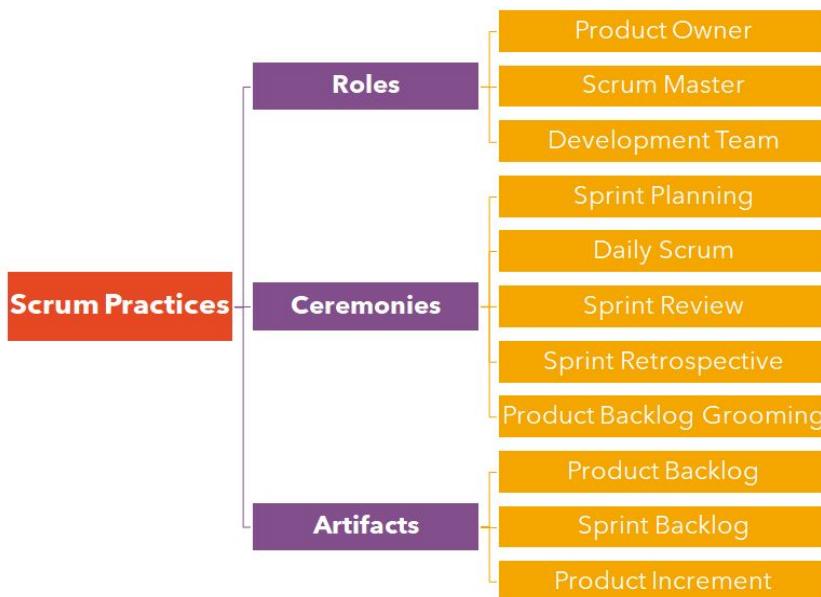
Scrum Framework



Scrum Framework

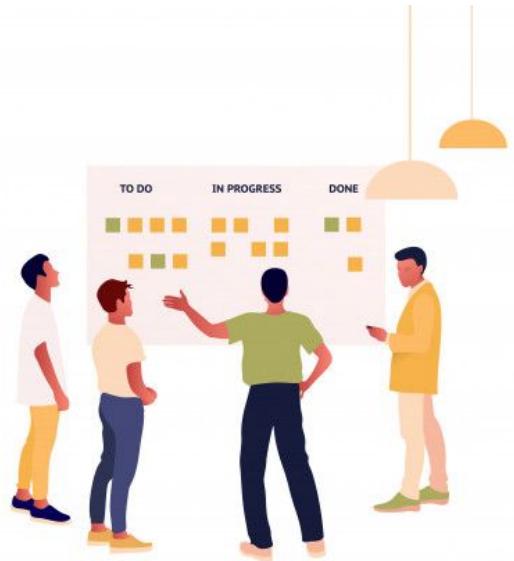


Scrum Practices



5 Scrum Roles

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Scrum Roles

Product Owner



Responsible for the project's success by defining the project vision, requirements, and priorities

Scrum Master



Accountable to the team to remove impediments that will prevent them from achieving the goals of the Product Owner

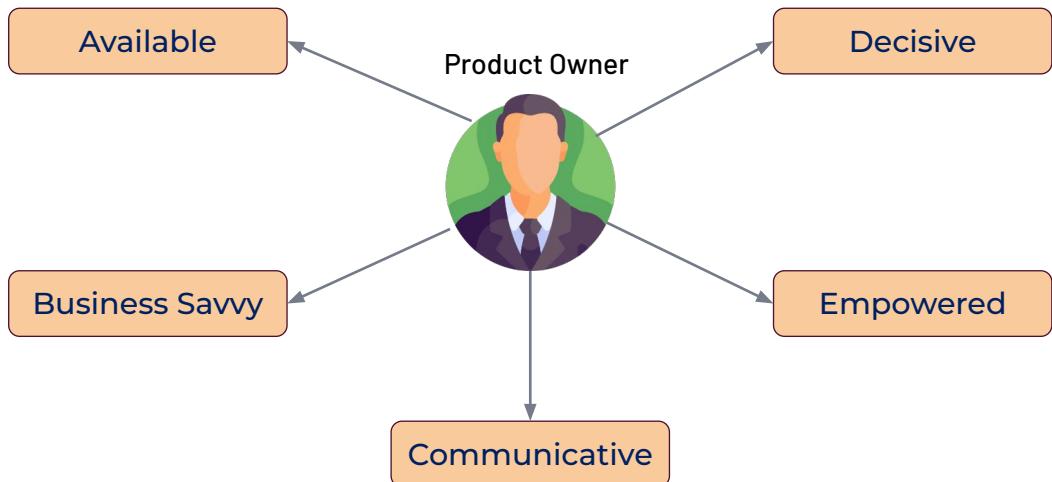
Development Team



Team comprises 3-9 people, with a mix of roles, and self-organizes to determine how to best meet the goals of the Product Owner

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► Product Owner

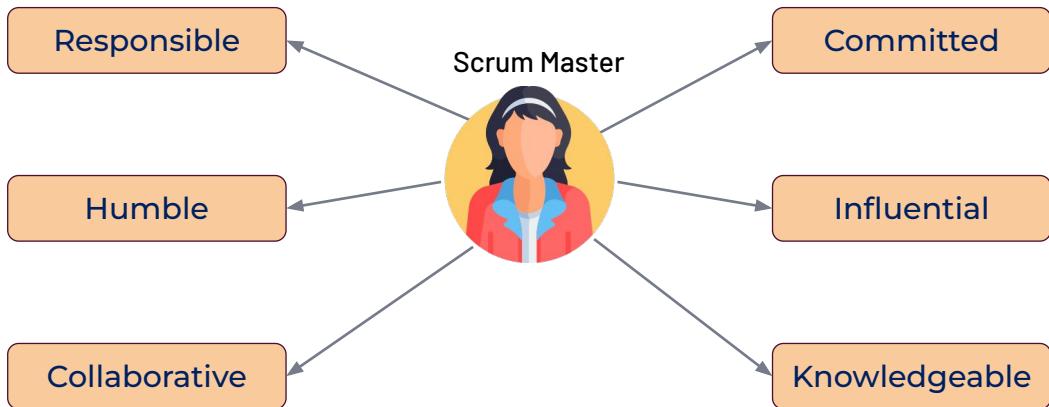


► Product Owner

- Clearly expressing Product Backlog items
- Ordering the items in the Product Backlog to best achieve goals and missions
- Optimizing the value of the work the Development Team performs
- Ensuring that the Product Backlog is visible, transparent, and clear to all, and shows what the Scrum Team will work on next
- Ensuring the Development Team understands items in the Product Backlog to the level needed

Scrum Master

The Scrum Master is responsible for promoting and supporting Scrum



Scrum Master

Scrum Master Service to the Product Owner



Ensuring that goals, scope, and product domain are understood



Finding techniques for effective Product Backlog management



Helping the Scrum Team understand the need for clear and concise Product Backlog items



Understanding product planning in an empirical environment



Ensuring the Product Owner knows how to arrange the Product Backlog to maximize value



Understanding and practicing agility



Facilitating Scrum events as requested or needed

► Scrum Master

Scrum Master Service to the Development Team



Coaching the Development Team in self-organization and cross-functionality



Helping the Development Team to create high-value products



Removing impediments to the Development Team's progress



Facilitating Scrum events as requested or needed

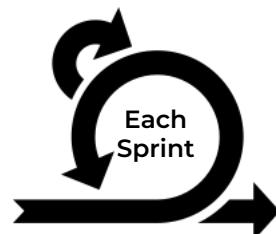


Coaching the Development Team in organizational environments in which Scrum is not yet fully adopted and understood

► Development Team

The Development Team consists of professionals who do the work of delivering a potentially releasable Increment of “Done” product at the end of each Sprint.

Development Team



Product Increment



► Development Team



They are self-organizing.



Development Teams are cross-functional.



Scrum recognizes no titles for Development Team members.



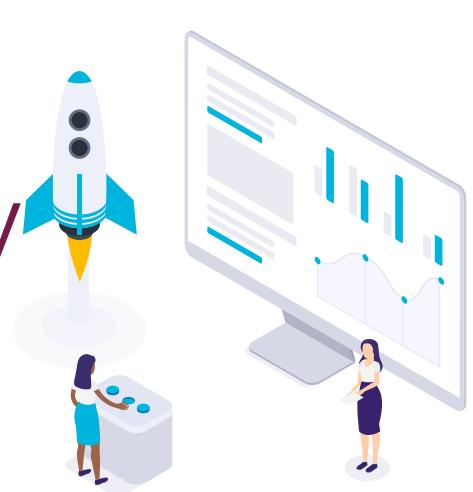
Scrum recognizes no sub-teams in the Development Team.



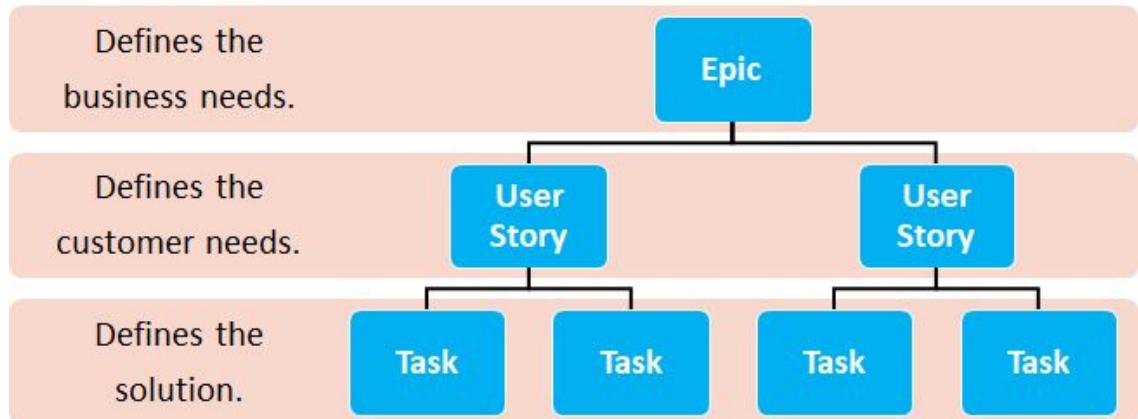
Accountability belongs to the Development Team as a whole

6

Epic, User Story and Task



Epic, User Story and Task



Epic



- Big chunk of work.
- Few lines of description.
- More than one sprint to complete.

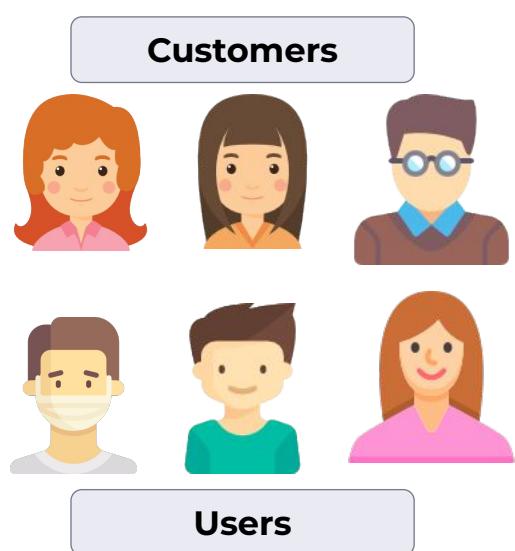
Examples of Epics:

- As a bank, we want a facial recognition system in our branches.
- As the marketing department, we want a mobile application and a website to reach more customers.

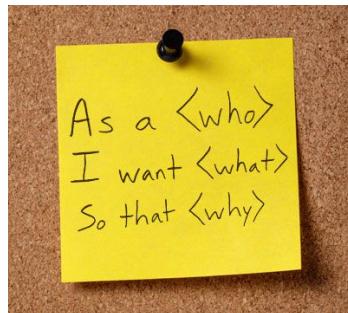
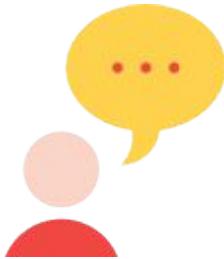
Import things when creating epics

- Create epics that leadership team at your work would want to track.
- An epic should be a product feature, customer request or business requirement.
- Let your organisational culture decide/ direct the size of your epic.
- Epics should not be too short or too long.

User Story



User Story



- User Needs.
- Few lines of description.
- Deliver during a sprint.

Examples of User Stories:

- As a registered user, I want to add items to the cart so that I can purchase multiple items at once.
- As a student, I want to apply for the exam online so that I can save time.

How to write User Story?

As a <type of user>, I want <some goal> so that <some reason>.

Examples of User Stories

As a user, I want to migrate all my data backup in a cloud system to free up my device.

As a consumer, I want to shop grocery items from a mobile app so that I could skip the lines in the store.

Import things when creating user stories

- Should be short, simple descriptions written through the agile project.
- Anyone can write the user story.
- It is expressed in plain language so the customer can understand what the final product is all about
- Should answer the ‘who’, ‘what’ and ‘why’.
- “Heart of Scrum” because they serve as the ‘building blocks’ of the sprint.

Task



• Represents a technical activity

• Description of individual work item

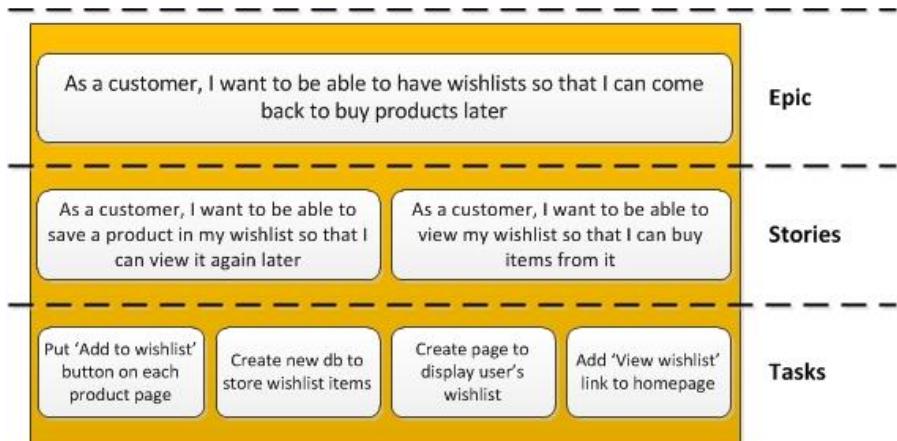
• Created by anyone

Examples of Tasks:

- Redesign a single web page
- Create a new logo
- Perform usability testing

► Epic, User Story and Task

- Ecommerce website
 - Customer wants a wishlist section



► Estimation of User Stories

T-Shirt Sizing



Story Points

1, 2, 3, 5, 8, 13, 21

▶ Estimation

Story Points Estimation Cheat Sheet

How much is known about the task	Everything	Almost everything	Something	Almost nothing	Nothing	Nothing
Dependencies	None	Almost none	Some	Few	More than few	Unknown
How much work effort	Less than 2 hours	Half a day	Up to two days	Few days	Around a week	More than one week
Story Points	1	2	3	5	8 Should be split into smaller items	13 Must be split into smaller items

▶ The Benefits and Who to Include

- ▶ Estimating tasks relative to each other.
- ▶ Lending an equal voice to everyone on the team.
- ▶ Identifying gaps in requirement and implementation.

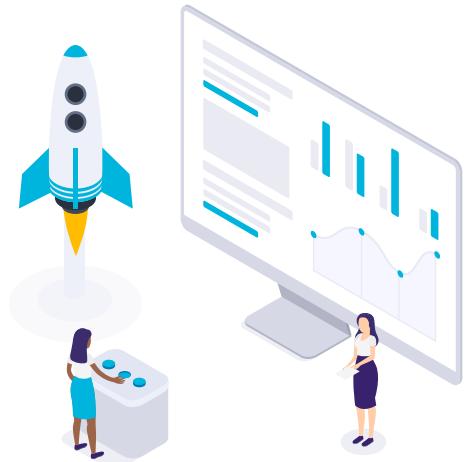
Scrum team members

Scrum master

Product owner

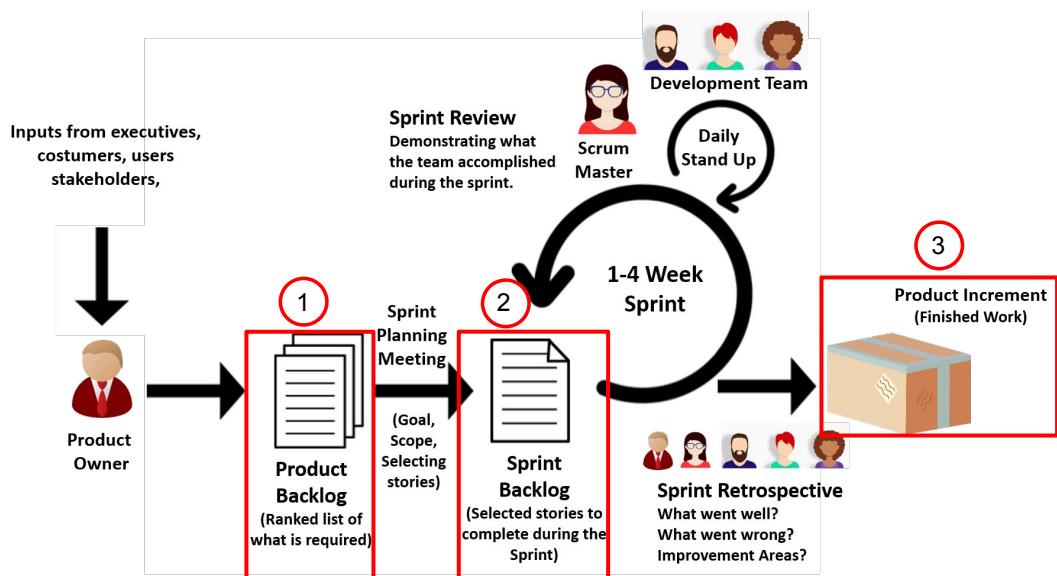
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Scrum Artifacts



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Main Scrum Artifacts



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Product Backlog

User story	Story point(s)	Priority
As a user, I am able to search for documents so I can find them more easily	2	1
As a site visitor, I can compare different types of accounts to see which account type suites me best	1	2
As a user, I can submit questions through the website so I know how to better use the product	1	3
As a site visitor, I am shown what I can do in the product so I know whether or not this product will fill my needs	2	4
As a user, I want to be able to retrieve documents that were deleted so I can reclaim documents that were deleted on accident	3	5
As a site visitor and user, I can sign up for newsletters to remain up to date on the product	2	6
As a user, I am notified when a new feature is released so I know what is possible	1	7
As a user, I can change my user name if desired	3	8
As an admin, I need the ability to update which team a user belongs to so I can make sure all teams are up to date	3	9
As a user, I can enable spell check so I can be confident my final document has no spelling errors	4	10

High priority ↑

Low priority ↓

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- Ordered list of everything

- List of prioritized items

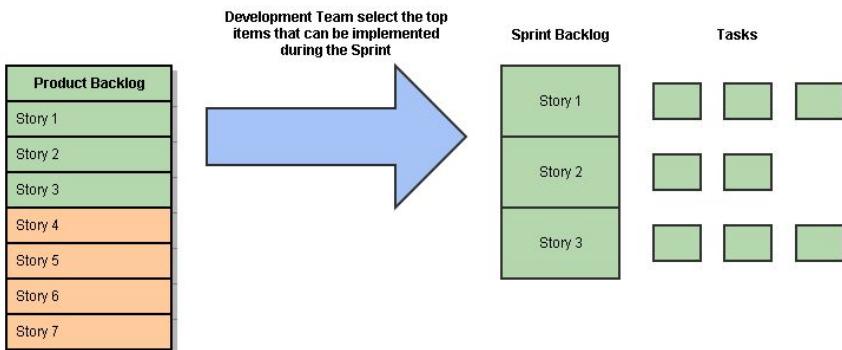
- Product Owner is responsible

- Dynamic

- Should be refined regularly

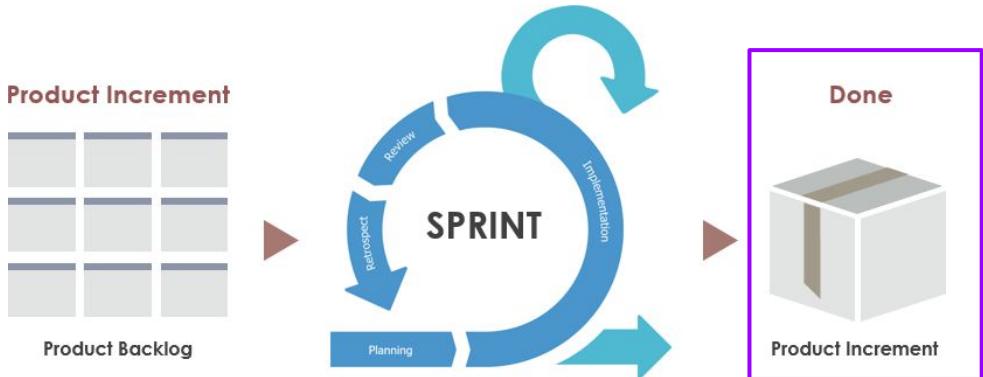
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Sprint Backlog



- The set of Product Backlog items selected for the Sprint
- A plan for delivering the product Increment and realizing Sprint Goal
- Highly visible, real-time picture of the work

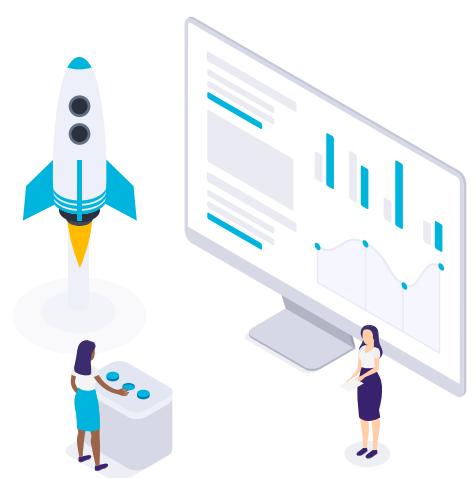
Product Increment



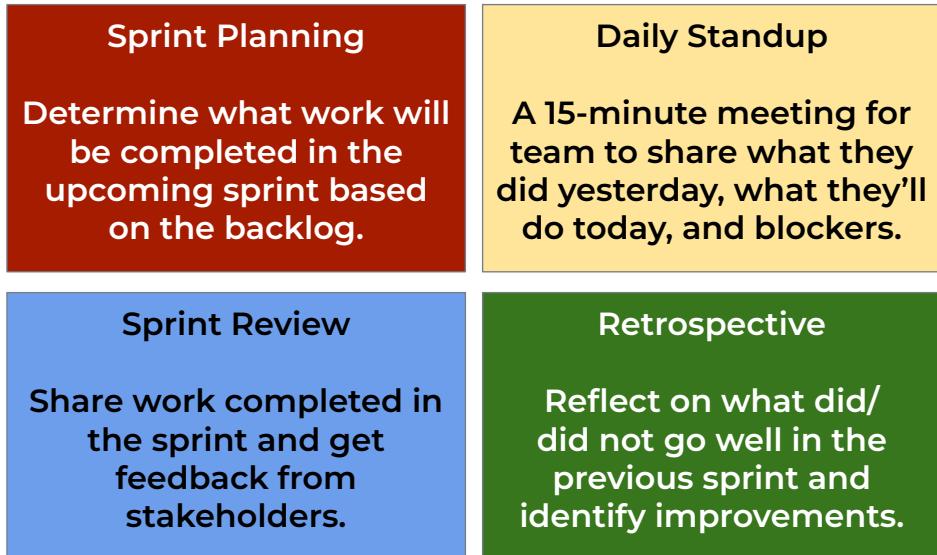
- The sum of all the Product Backlog items completed during a Sprint and the value of the increments of all previous Sprints.
- At the end of a Sprint, the new Increment must be “Done”.

8

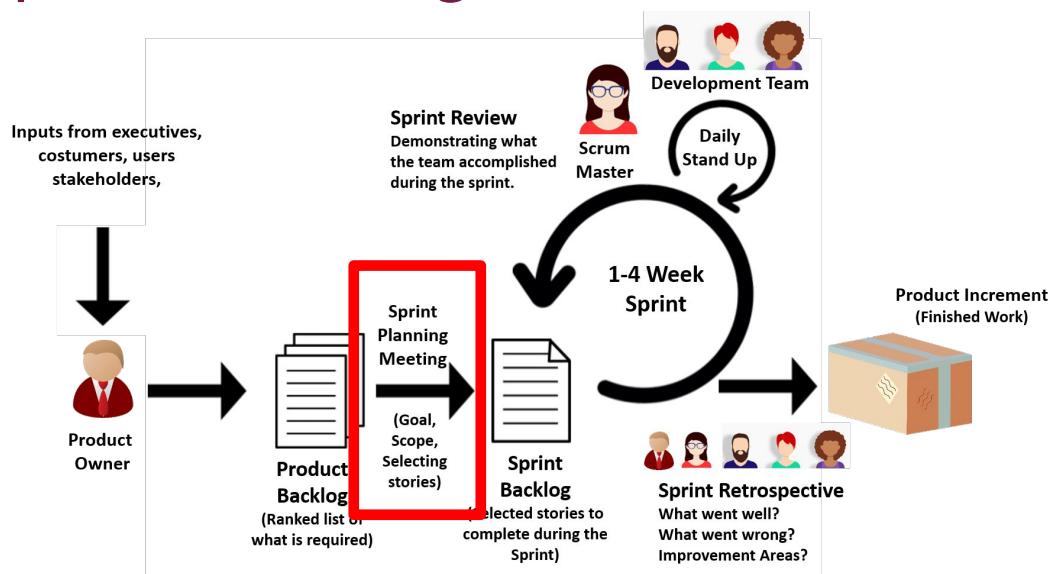
Scrum Ceremonies



Scrum Meetings



Sprint Planning



Sprint Planning

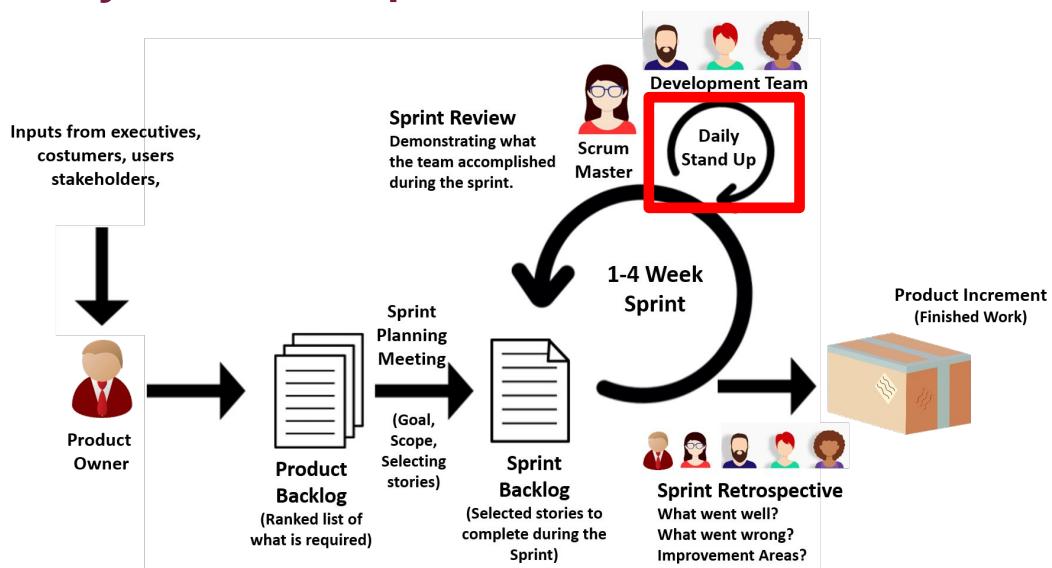
Determine what work will be completed in the upcoming sprint based on the backlog.

- Maximum 8 Hours.
- Assign points to user stories to indicate the level of effort.
- Agree on what work will be done and by whom.

The screenshot shows a Jira backlog titled "Sprint 2 0 issues". It includes a "Create Sprint" button and a "Start Sprint" button. Below this is a "Backlog 36 issues" section. Each issue item contains a small icon, the issue key (TIS-XX), the title, the points (e.g., 3.0), the assignee (Large Team Support or Space Travel Partners), and a progress bar.

Issue Key	Title	Points	Assignee
TIS-46	Update LocalTransportController to handle...	3.0	Large Team Support
TIS-42	Extend booking experience in UI to includ...	3.0	Large Team Support
TIS-43	Extend booking experience in UI to includ...	3.0	Large Team Support
TIS-40	Update FlightController to handle multiple...	3.0	Large Team Support
TIS-44	Reward Customers an extra 5-10% when...	3.0	Large Team Support
TIS-39	Update UI controls on travel booking pag...	3.0	Large Team Support
TIS-25	Engage Jupiter Express for outer solar...	3.0	Space Travel Partners
TIS-27	Add Phobos and Deimos Tours as a Pr...	3.0	Space Travel Partners
TIS-21	Create Email Campaign for Saturn Sum...	2.2	Space Travel Partners

Daily Standup



Daily Standup

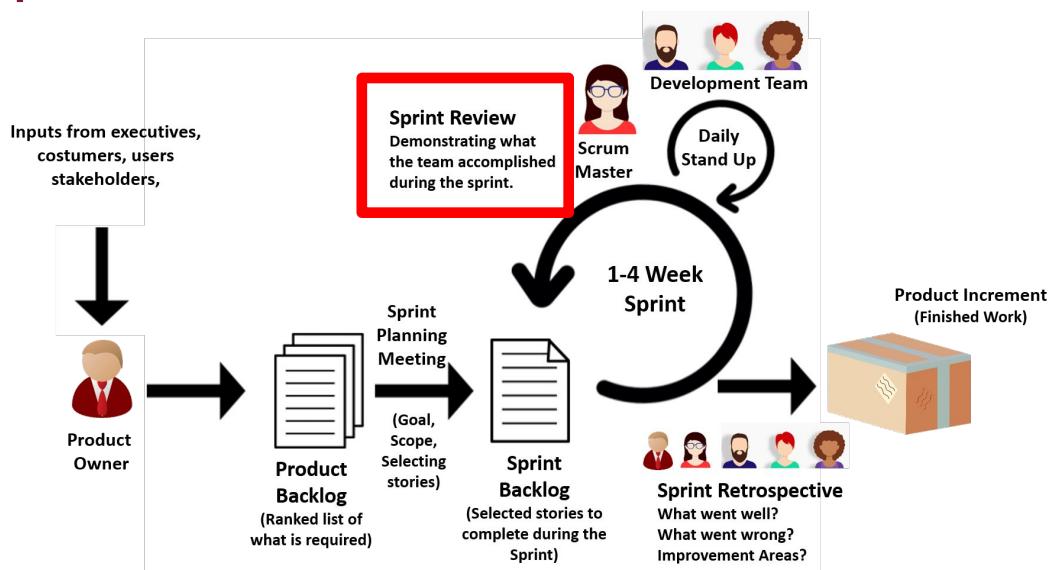
A 15-minute meeting for team to share what they did yesterday, what they'll do today, and blockers.

- 15 minutes max: Additional conversations can happen after standup.
- Happen on a daily basis during a sprint.
- Everyone answers three questions.

1. What did I do yesterday?
2. What will I do today?
3. What blockers do I have?



Sprint Review



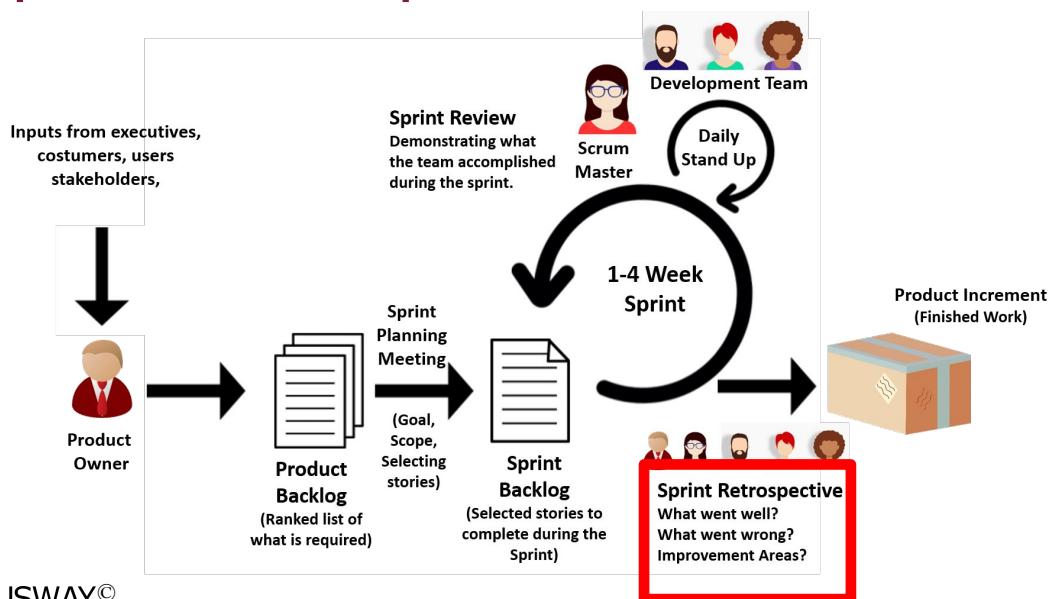
Sprint Review

Share work completed in the sprint and get feedback from stakeholders.

- Team members share the work that they completed in the sprint.
- Stakeholders share feedback that's incorporated into future sprints.
- Celebrate progress and achievements.



Sprint Retrospective



Sprint Retrospective

Reflect on what did/did not go well in the previous sprint and identify improvements.

- Opportunity for the Scrum Team to inspect itself.
- Learnings are incorporated into future sprints.
- Make it more effective and enjoyable for the next Sprint.

1. What went well?
2. What didn't go well?
3. What can we do differently?



Project Management Tools

► Project Management Tools



THANKS!
Any questions?

