

FULL STACK

Agile, Scrum, and Version Control System



You Already Know

Course(s):

1. Agile Scrum Foundation



2. Git



Recap

- Describe Agile manifesto
 - Principles of Agile
- Distinguish between the Waterfall and Agile approaches
 - Focus on consumers
 - Customer involvement
 - Multidisciplinary teams
- Describe Scrum and Scrum roles
 - Scrum teams
 - Sprints
 - Events of a Sprint



Recap

- Explain the events of the Sprint
 - Stand-up meeting
 - Sprint backlog
 - Time-boxing
- Explain the fundamentals of Git
 - Basic setup and configurations
- Explain the creation of a Git repository
 - Git add
 - Git commit
 - Git push



A Day in the Life of a MEAN Stack Developer

Joe is hired as a MEAN Stack Developer in Abq Inc. They have decided to restructure their website similar to Netflix's so that the requests from the clients to their servers can be minimized. Experts suggested that Angular framework would be the best-fit to build such sites. Abq Inc. adopted Scrum methodology to develop their product and release it incrementally.

Joe has been assigned a few tasks during the sprint planning. Pushing the Angular application to the GitHub repository is one of the tasks assigned to him. At the daily stand-up meeting, he is asked to complete this task with certain conditions so that the storage can be used effectively.

To complete this task, he has to follow agile methodology.

In this lesson, we will learn how to solve this real-world scenario to help Joe complete his task effectively and quickly.



Learning Objectives

By the end of this lesson, you will be able to:

- 🕒 Enumerate the scrum practices
- 🕒 Explain the workflow of agile and scrum practices
- 🕒 Structure your GitHub repositories
- 🕒 Interact with your GitHub via Git



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Scrum Practices

Product Backlog

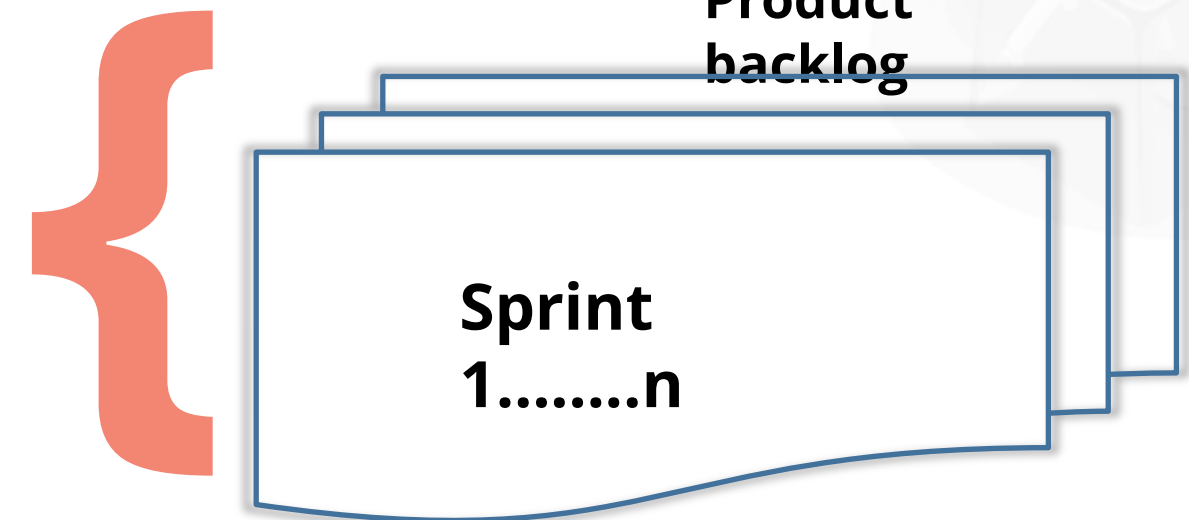
Product backlog is an ordered list of tasks to be done in the product.

The screenshot shows the Jira interface for a project named 'SmartWeatherApp'. The left sidebar contains navigation links: 'SmartWeatherApp Software project', 'SMAR board Board', 'Backlog' (selected), 'Active sprints', 'Reports', 'Releases', and 'Issues and filters'. The main area is titled 'Backlog' and shows a list of issues. A red box highlights the following issues:

Issue	Version	Category	Assignee	Key	Priority	Count
Create apps for iOS, Android, Windows, and Blackberry	VERSION2.1	IOS/Android Apps	SMAR-1	↑	1	
Placeholders for advertising on portal and app		IOS/Android Apps	SMAR-3	↓	11	
Show current weather		IOS/Android Apps	SMAR-4	↓	23	

Below the issues is a '+ Create issue' link. A red arrow points from the 'Product backlog' text below to the highlighted issues.

- It is a single source of requirements to be added to a product
- It is a living document
- Tasks are prioritized and ordered accordingly
- The product owner is responsible for the backlog



User Stories

The purpose of a user story is to describe the task which will deliver a particular value to the customer.

User stories should include:

- An identifier and a name
- A description
- An estimated value
- An estimated effort
- Associated risks, dependencies, and acceptance tests



Sprint Backlog

The sprint backlog is a list of tasks identified by the scrum team which has to be completed within the estimated time, also known as a sprint. It is maintained by the development team.

Start sprint

2 issues will be included in this sprint.

Sprint name:
SWC - Cafe version -3

Duration:
Custom

Start date:
14/Mar/19 11:04 AM

End date:
15/Mar/19 11:04 AM

Sprint goal:

- 1. The website should be able to load on desktop and mobile.
- 2. It should be responsive.
- 3. The App should update realtime with the user location.

Start Cancel



Sprint Backlog

Search icon | User avatars | Only My Issues | Recently Updated

VERSIONS **SWC - Cafe version -3** 2 issues

Start sprint



EPICS

Show satellite image on a map

SWC-4 ↑ 23

Site should be "responsive" – accessible from mobiles and tablets as well

SWC-2 ↑ 3

+ Create issue

Sprint backlog

2 issues Estimate 26

Create sprint

Backlog 1 issue

Provide severe weather advisory (push for app users)

SWC-5 ↑ 12

+ Create issue

Product backlog

Timeboxing

The goal of timeboxing is to define and limit the amount of time dedicated to a task.

Benefits:



Efficient development
process



Less overheads



High velocity for teams

Importance of Timeboxing



Establishes work-in-progress limit



Prioritizes the tasks



Tracks the progress



Improves predictability



Improves time management



Definition of Done

A checklist of things that must be verified before an item or a story is marked as completed. It evolves as the scrum team matures. It can applied to:

- A user story
- A sprint
- A release
- A project

The screenshot shows a Jira board for the project 'SWC - Cafe version -3'. The board has three columns: 'TO DO', 'IN PROGRESS', and 'DONE'. The 'IN PROGRESS' column contains a task 'Site should be "responsive" – accessible from mobiles and tablets as well' with a priority of 3. The 'DONE' column contains a task 'Show satellite image on a map' with a priority of 23. A red box highlights the 'DONE' column, and a red arrow points to the task 'Show satellite image on a map' with the text 'Task is "Done"'. The board also shows a search bar, user avatars, and filters for 'Only My Issues' and 'Recently Updated'.

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Scrum Planning

Planning Layers and Product Roadmaps

Strategy

Executives define and govern the execution of the strategic goals.

Portfolio

The product offerings are established considering the vision of the executives.

Product

Each scrum team sets a product vision and outlines the roadmap for the projects.

Daily

The scrum team meets every day for a status update and makes a plan-of-action for the next twenty-four hours.

Sprint

The scrum team determines the user stories that can be completed within the sprint.

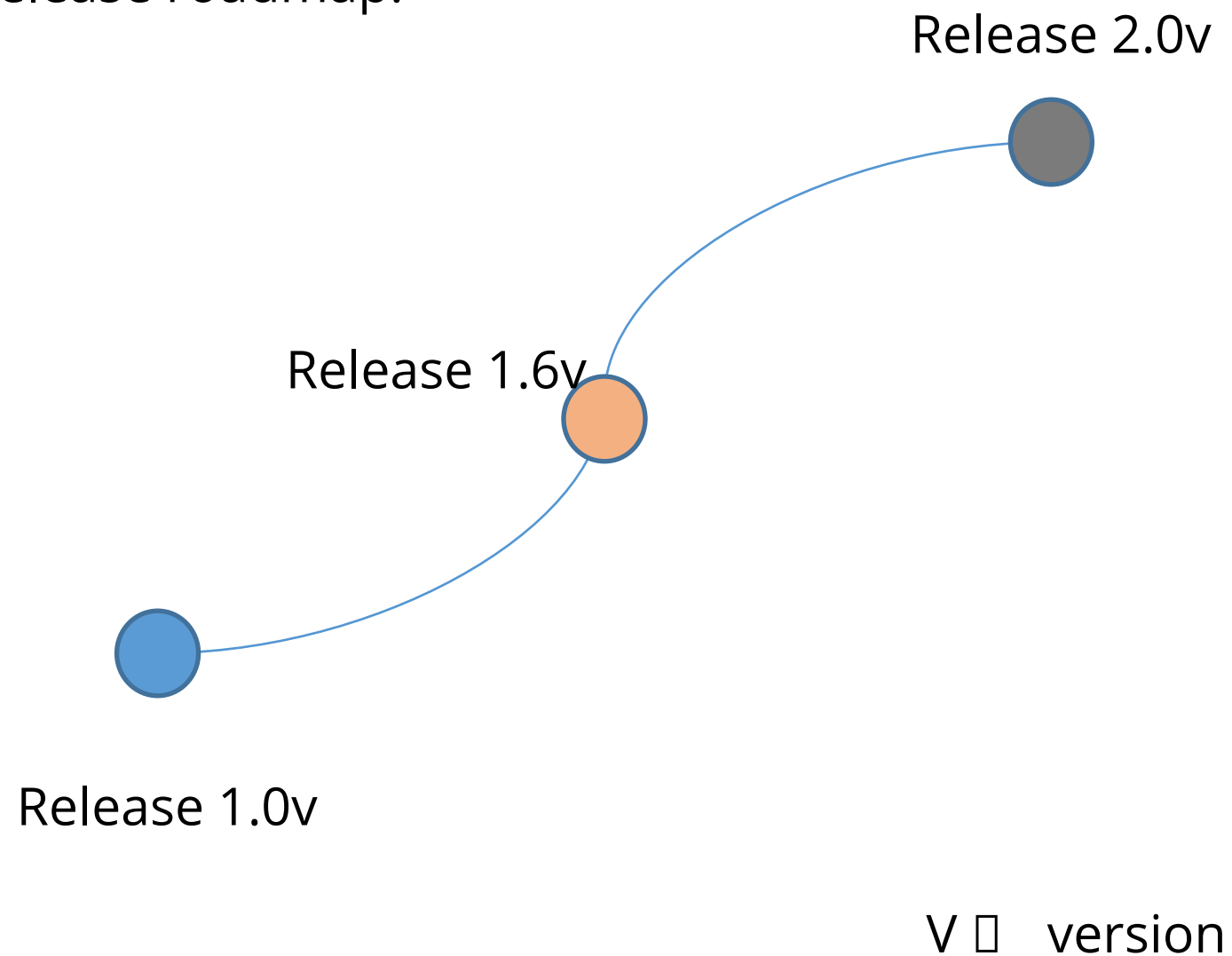
Release

The scrum teams group product backlog items into smaller releases.

Releases Supporting Product Roadmaps

A prioritized backlog of product features must match the product roadmap.

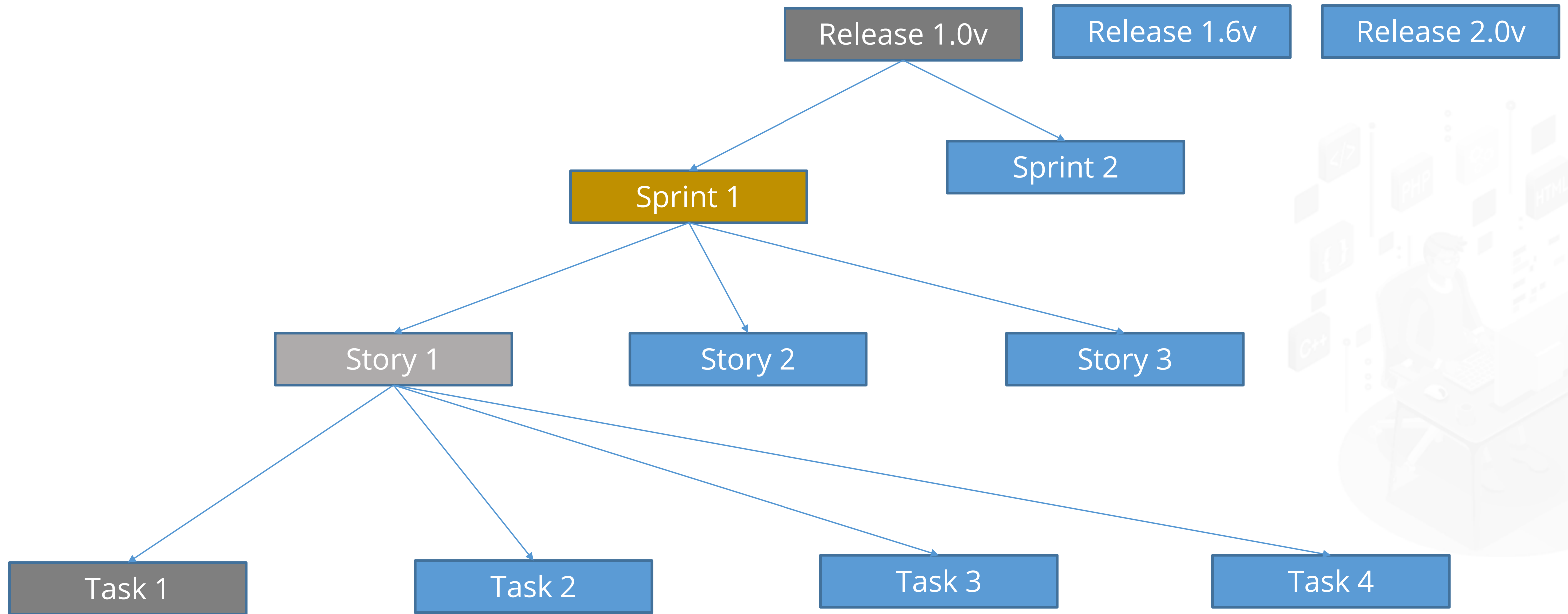
Release roadmap:



Example:

- First version is available to all the registered members
- Second version is available to premium members only
- Third version is available to all the members

Releases Supporting Product Roadmaps



Sprint Planning and Objectives

Scrum projects can be accomplished through:

- Themes and epics
- Releases
- Sprints
- User stories

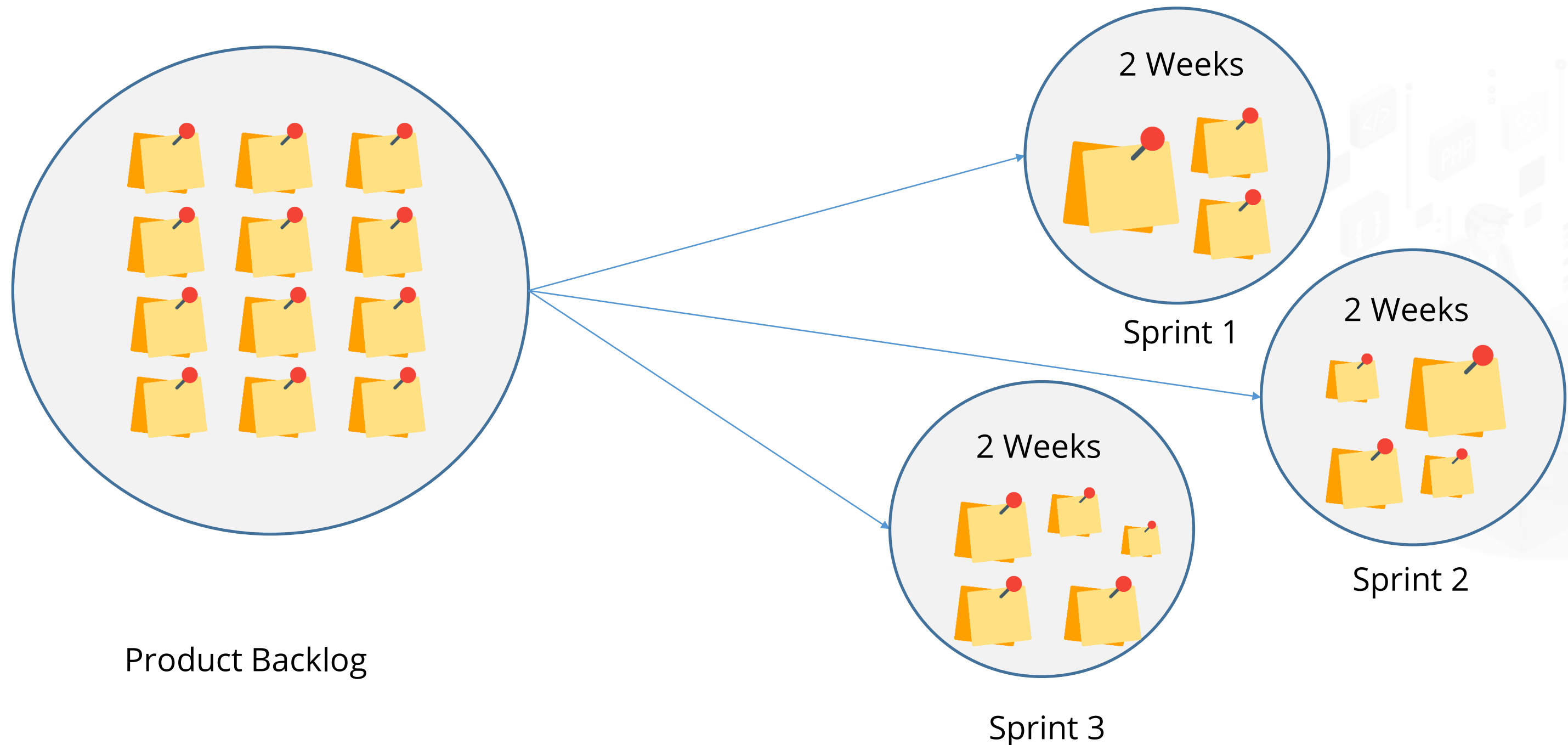
Sprint planning meeting is attended by the scrum team which consists of:

- Scrum Master
- Product Owner
- Development team
- End users and executives (Optional)

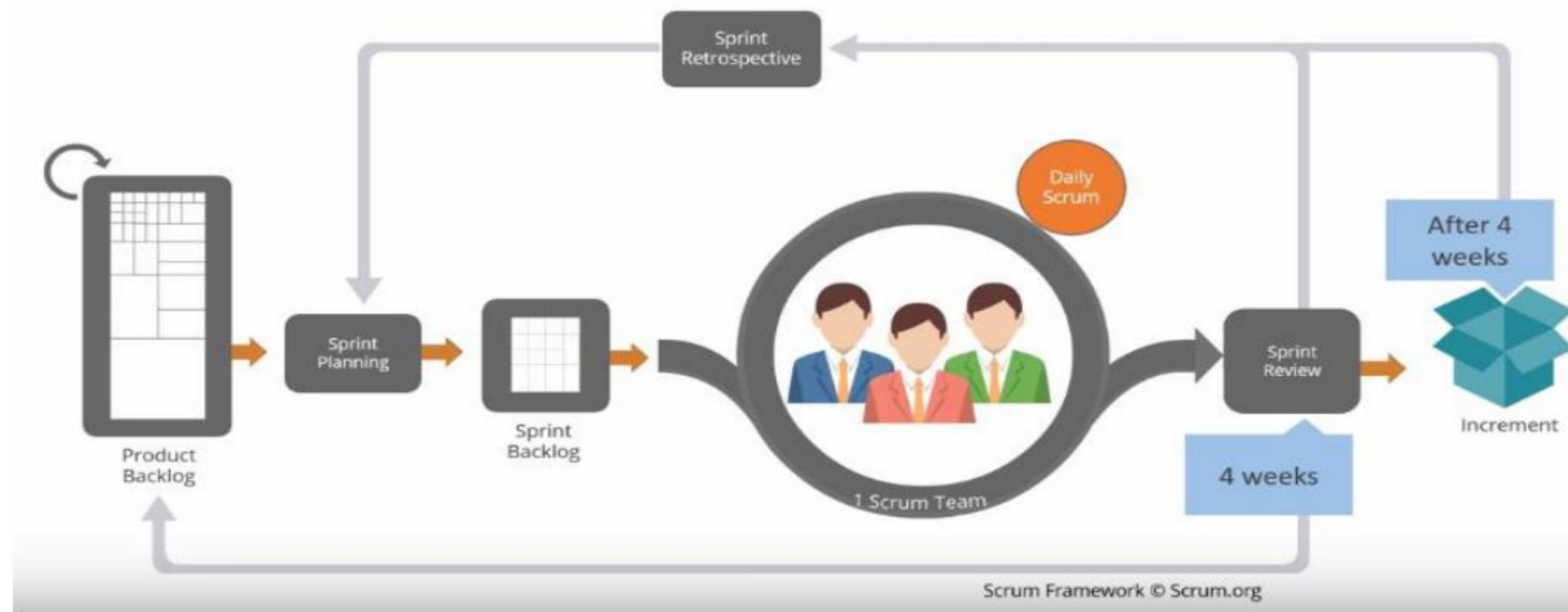
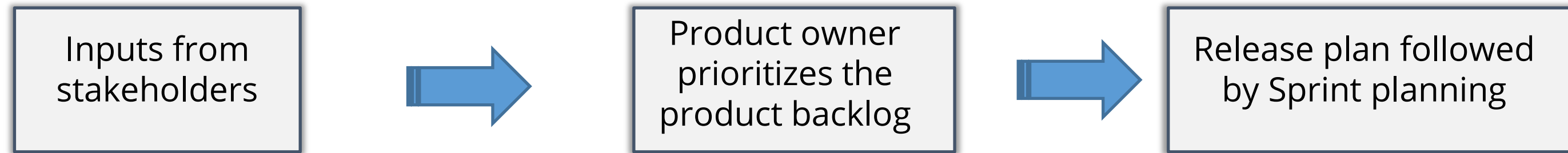
Small Projects	Large Projects
Three to six sprints	More than six sprints
Six to twelve weeks	More than six months
Single team	Multiple teams
Story level: <ul style="list-style-type: none">• Release• Sprint	Story level: <ul style="list-style-type: none">• Business area• Theme or Epic• Features

Sprint Planning and Objectives

Each sprint planning is scheduled to last two hours for each week of the sprint's duration.

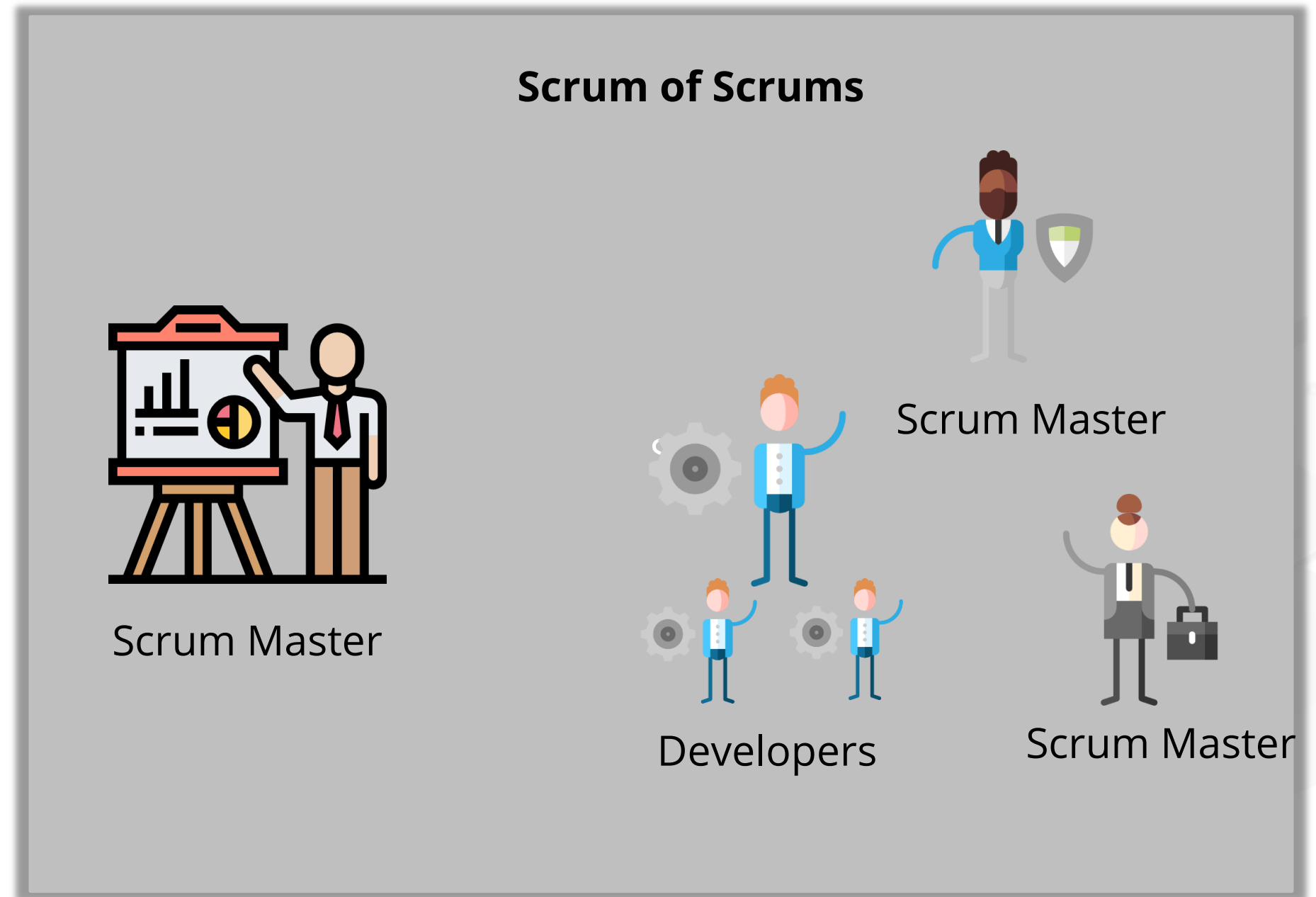


Sprint Planning Meeting



Scrum of Scrums

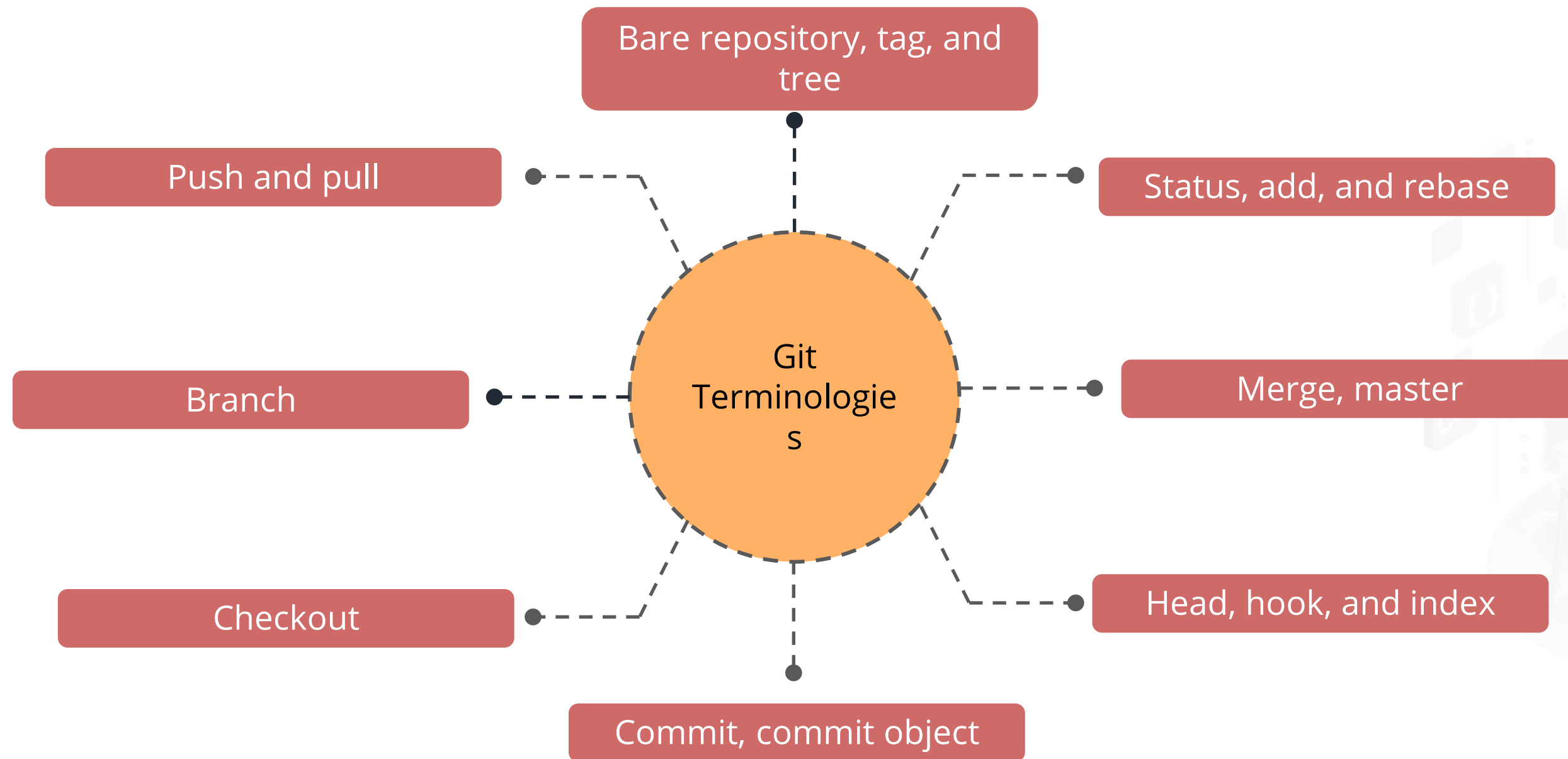
- Scrum of scrums is a scaling mechanism
- The scrum masters and developers need to deliver the scrum of scrums collaborative which is the *Definition of Done*. They meet and communicate to discuss:
 - The impediments
 - Progress
 - Cross-team coordination



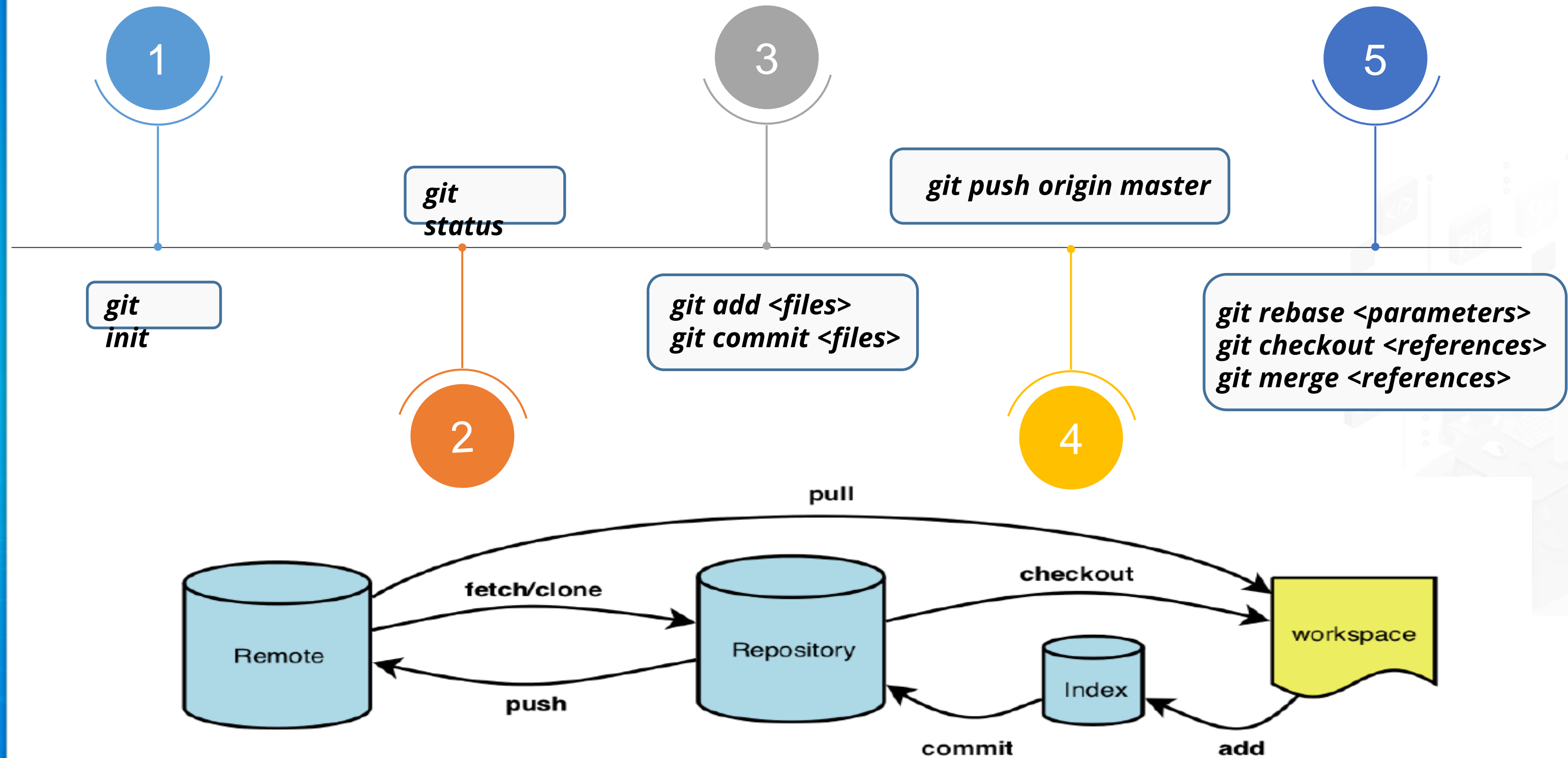
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Overview of Git and Git Rebase

Popular Terminologies



Git Workflow



Git Rebase

Git rebase is one of the ways to integrate changes from one branch to another. It transfers the completed task from one branch to another.

Commands used to achieve the result:

```
git rebase master
```

```
git rebase master feature
```

Before:

E—F feature
A—B—C—D master

After:

E'—F' feature
A—B—C—D master

Set Up and Create a Git Repository



Duration: 20 min.

Problem Statement:

You are given a project to demonstrate the initial setup and the uses of Git.

ASSISTED PRACTICE

Assisted Practice: Guidelines to Set Up and Create a Git Repository

1. Download Git from the official site.
2. Install Git in the system.
3. Confirm the installation, and check the version installed.
4. Execute the basic commands to familiarize yourself with the use of terminal.
5. Generate random files and initialize the .git file.
6. Commit the files.



CRUD Operations on Git



Duration: 40 min.

.Problem Statement:

.You are given a project to demonstrate the following:

1. Reverting the earlier commits
2. Deleting and ignoring files in Git
3. Pulling the commits and collaborating between the local and remote repositories

ASSISTED PRACTICE

Assisted Practice: Guidelines to Perform CRUD Operations on Git

1. Navigate to the folder of early commits.
2. Execute the command to revert the commits.
3. Generate random files and add to the initialized Git repository.
4. Ignore few of the files while adding the rest to the .git file.
5. Delete the files added to the .git file.



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Overview of GitHub

GitHub and Its Features



GitHub is a web-based hosting service for a version control system using Git.

Features:

- Access Control
- Bug Tracking
- Feature Requests
- Task Management

Developed Projects:

- Atom: A free and open-source text and source code editor
- Electron: An open-source framework to use JavaScript-based websites as desktop applications

Set Up and Configure GitHub Account



Duration: 50 min.

.Problem Statement:

.You are given a project to demonstrate the following:

1. Create your GitHub account
2. Connect from local Git repository to remote GitHub via SSH
3. Initiate the first push

ASSISTED PRACTICE

Assisted Practice: Guidelines to Set Up and Configure GitHub Account

1. Create an account with GitHub.
2. Set up an SSH connection with your GitHub account.
3. Navigate to the folder where the initial commits are made.
4. Add the remote origin.
5. Push the files to the GitHub account.



Key Takeaways

- Scrum is an agile process that helps to deliver the highest business values
- Definition of Done (DoD) is a comprehensive collection of mandatory value-added deliverables that focus on quality of the product and not the functionality
- Git is an open source version control system that supports branching, merging, and rewriting repository history
- GitHub is a web-based hosting service for a version control system using Git



Create and Deploy Files to GitHub via Git

Duration: 30 min.

Problem Statement:

Create a directory which includes multiple files: index.js, index.html, inherit.java, angularcli.json, and component.ts. Perform the following:

- Initialize the Git repository
- Commit the files: index.js, index.html, and inherit.java
- Ignore the files: angularcli.json and component.ts
- Create a folder in your GitHub account
- Push the committed files to the repository



Before the Next Class

Course: A Front-End Web Developer MasterClass Using HTML, CSS, and JavaScript

You should be able to:

- Explain how internet works
- Explain the fundamentals of HTML
- Use CSS to create a website
- Explain the basics of JavaScript

