

# FULL STACK



## Git and GitHub Training

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## Bitbucket and GitLab





## Learning Objectives

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

- 🕒 Define Bitbucket and GitLab
- 🕒 Illustrate code review, undo changes and branching
- 🕒 Classify GitLab basics
- 🕒 Define users, groups, and track issues



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## Introduction to Bitbucket

# What Is Bitbucket?

Bitbucket is a web-based version control repository hosting service for the projects that use either Mercurial or Git.

Features of bitbucket are:



Provides central place for git repositories

Keeps the project organized

Builds in continuous delivery

Provides free unlimited private repositories



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## Git with Bitbucket Cloud

# Git Repository

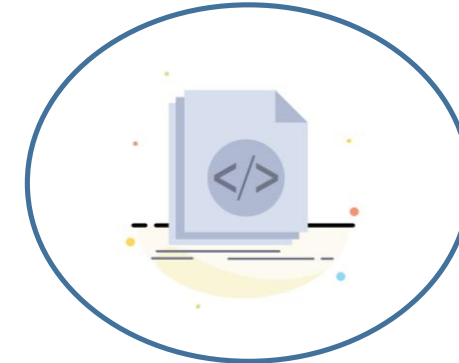
Characteristics of git repository are:



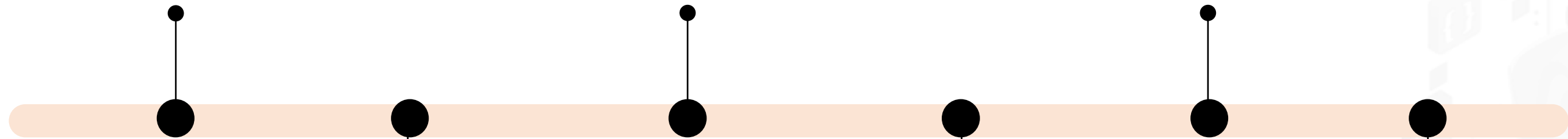
Can access all files



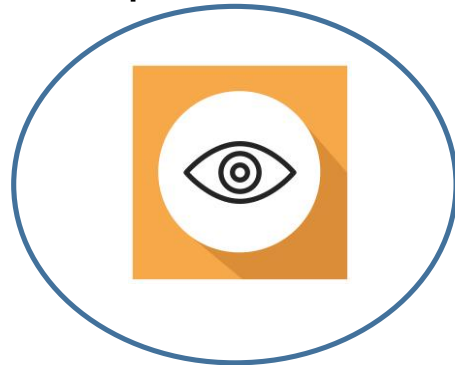
Each repository belongs to a user or team



Project code can consist of single or multiple repositories



Can view public repositories



Only an admin can delete repositories

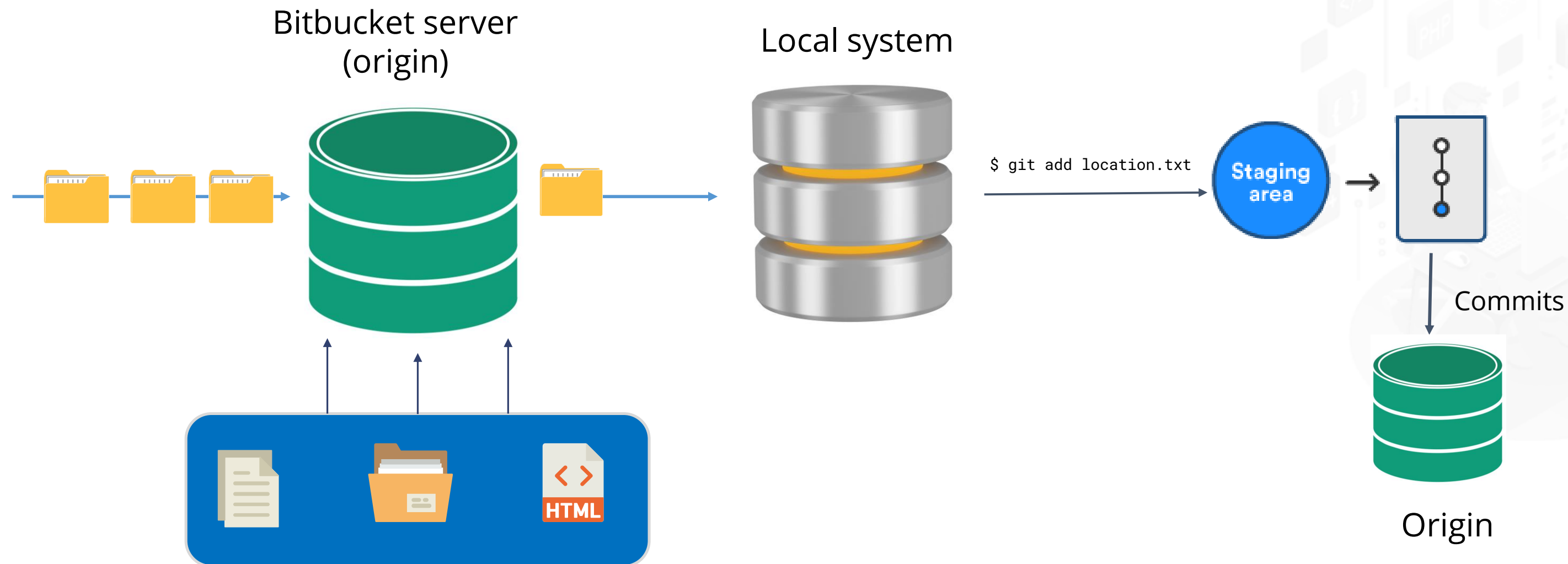


Each repository has a size limit of 2 GB



# Copy Git Repository and Add Files

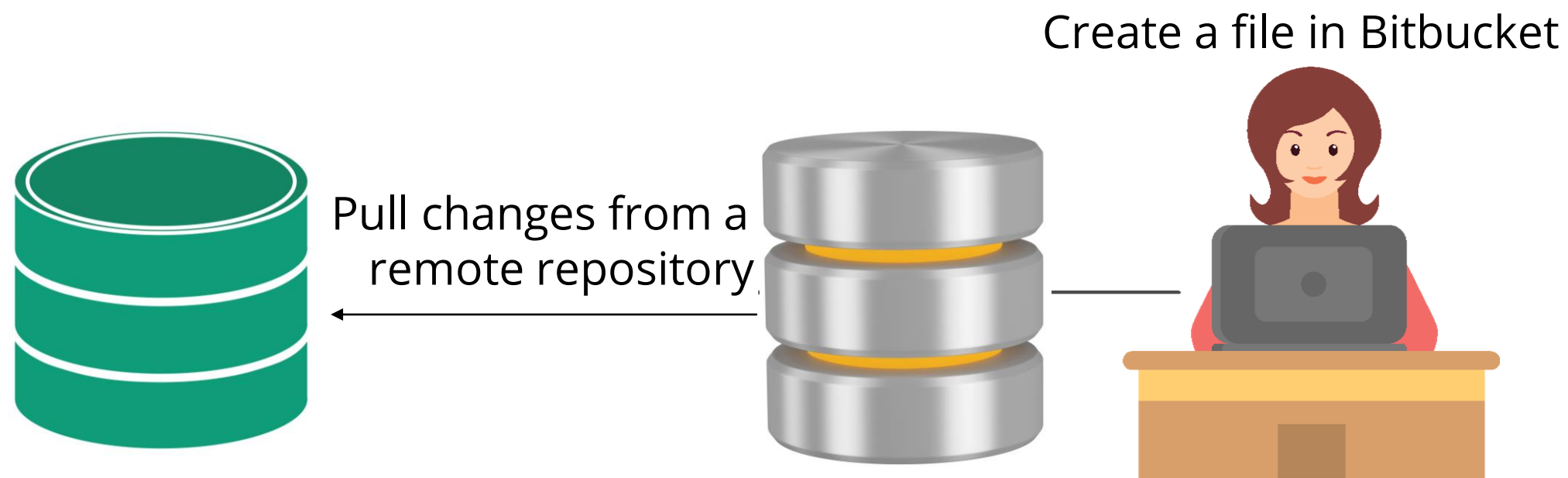
- Git refers to copying a repository as cloning.
- Cloning creates a connection between the Bitbucket server and local system.
- Files are added to keep a track of all the locations.





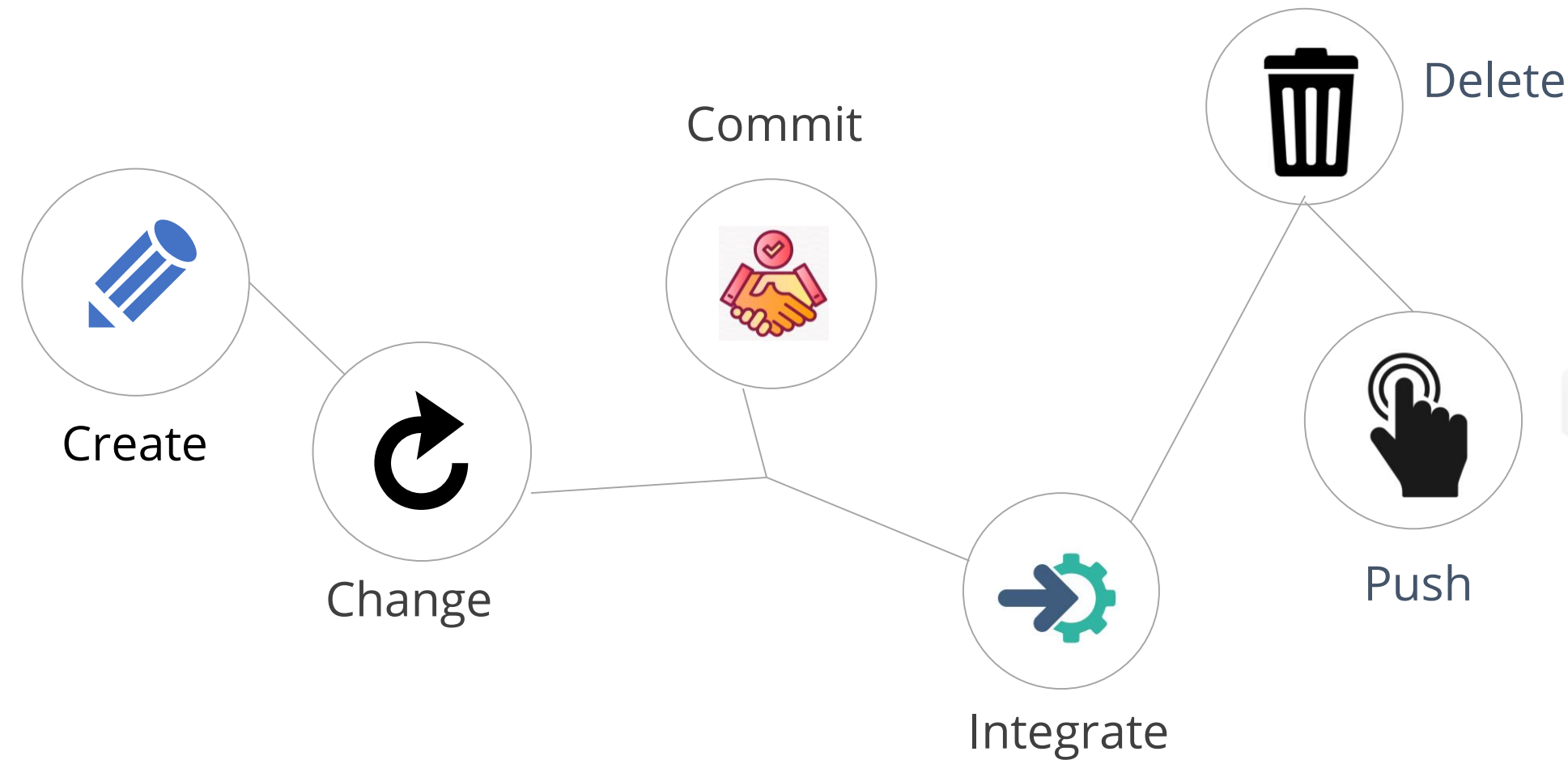
# Pull Changes from Repository on Bitbucket

In order to have more details about the file location, pull changes from the Git repository to the bitbucket cloud.



# Use a Git Branch to Merge a File

Branch represents an independent line of development for the repository.



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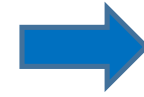
## Code Review in Bitbucket Cloud

# Create a Repository and Add Teammate

The process involves creating a team repository with some content and giving someone access.



Create a team



Add teammate

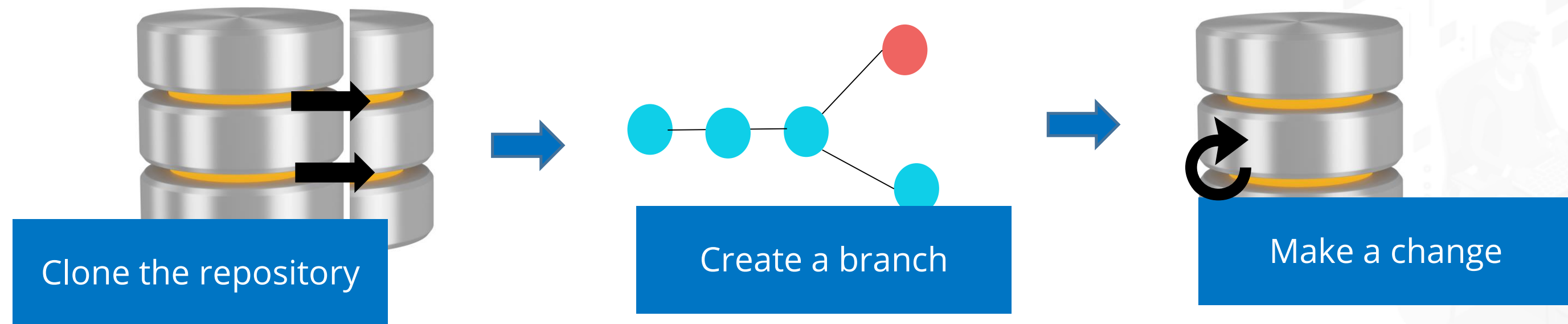


Create a repository



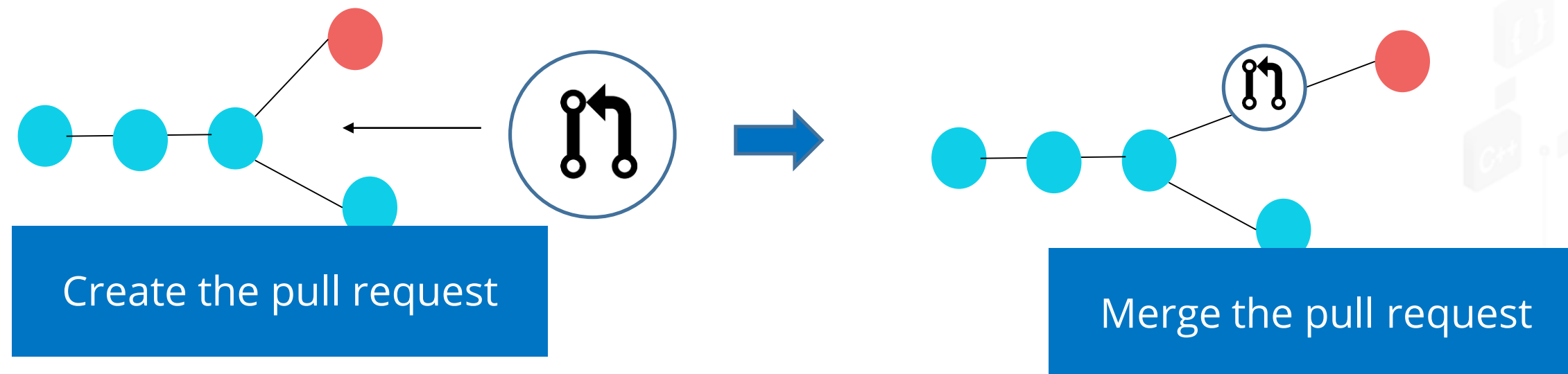
# Clone and Make a Change on a New Branch

- The repository must be cloned before creating a branch.
- There are two ways:
  - Using command line
  - Using source tree



# Create a Pull Request to Merge Change

In order to alert your teammates about the updates and get their approval, the next step is to create a pull request.



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## Branching with Bitbucket Cloud

# Importance of Branching

Branching in git allows to:



Use the same bitbucket cloud



Collaborate between team members from anywhere

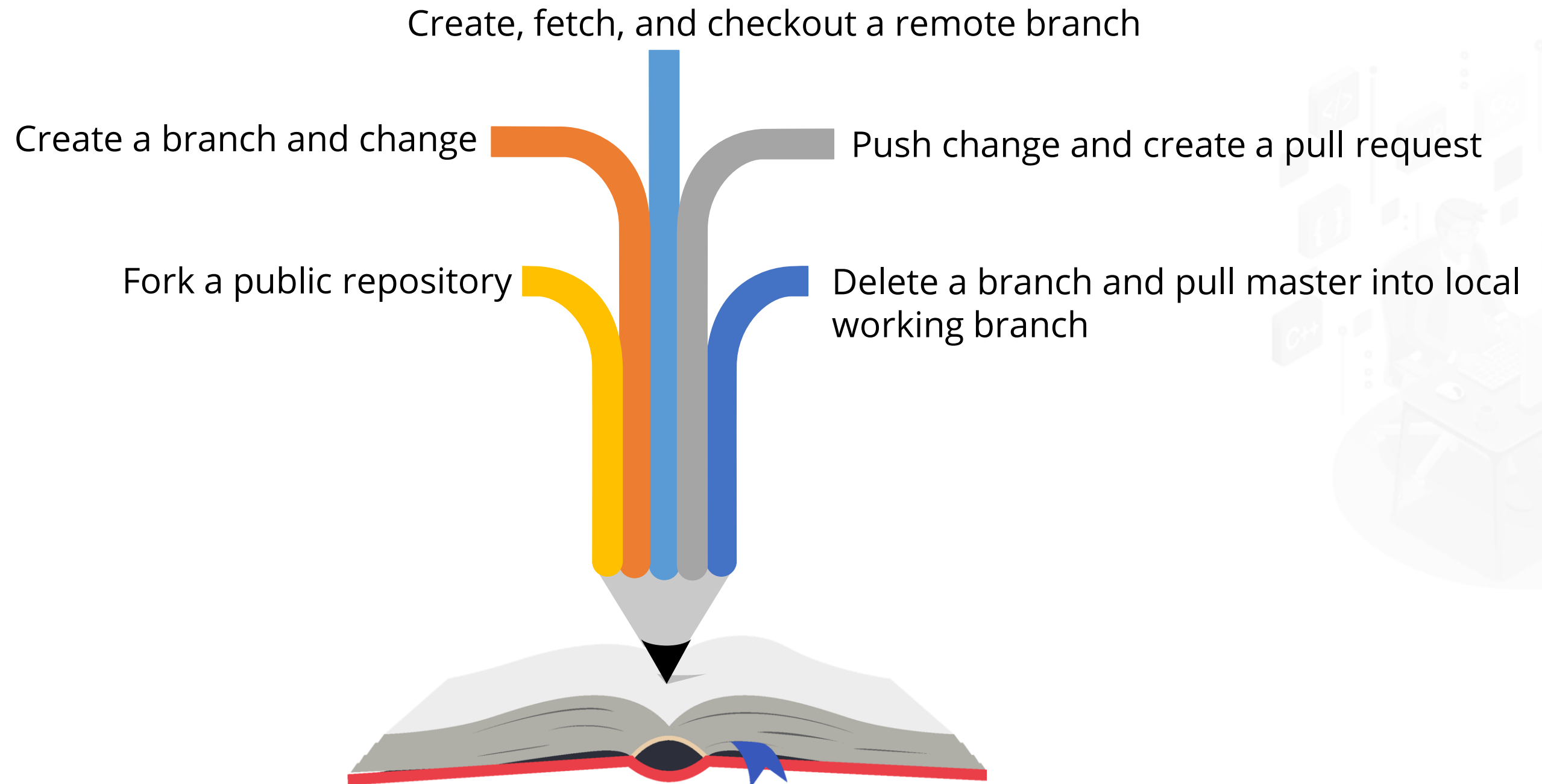


Have multiple lines of development running at the same time



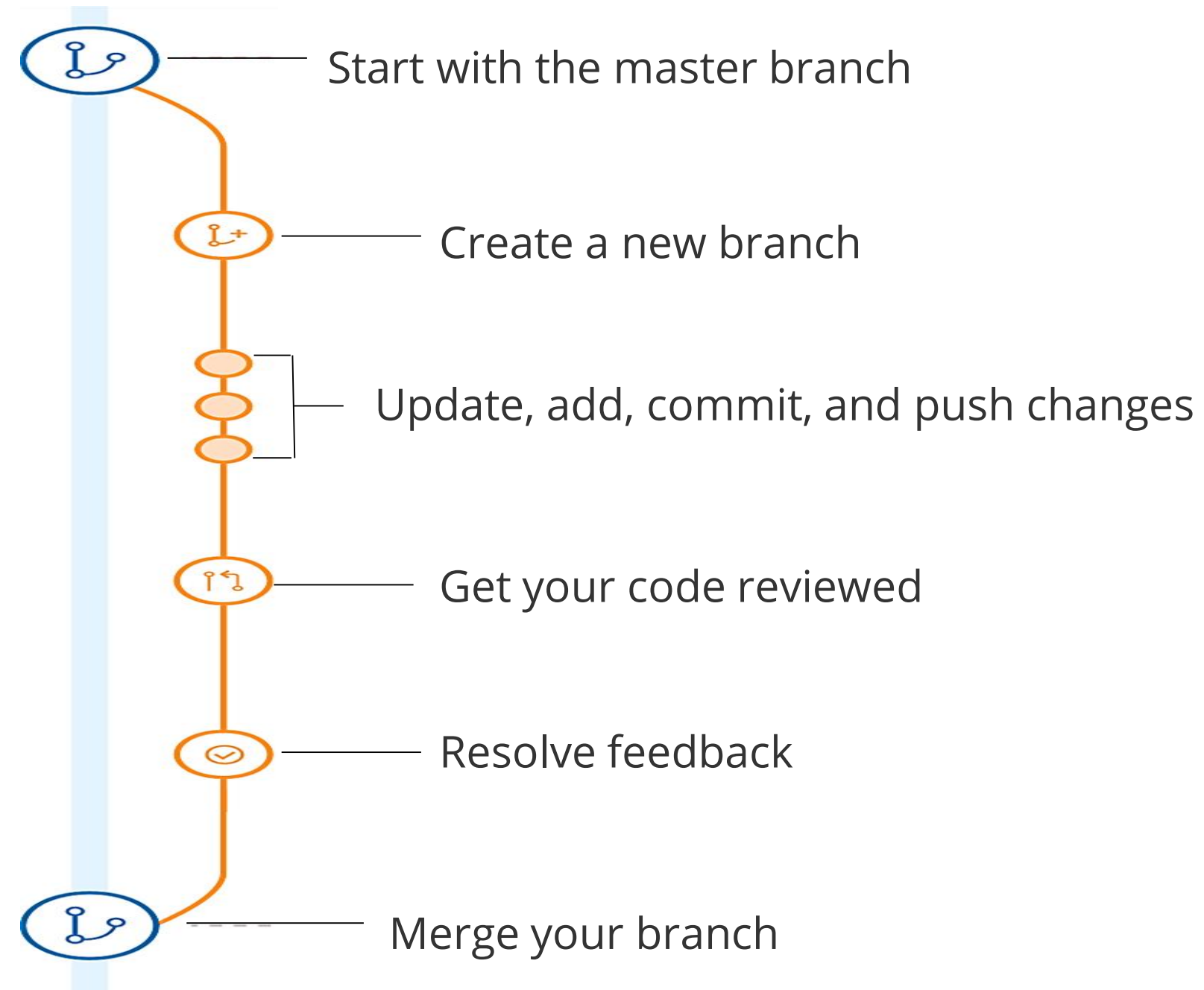
# Create Branch Using Branching Workflow

In order to work on a team, you will have to:



# Review the Branching Workflow

The Git Feature Branch Workflow is an efficient way to work with your team in Bitbucket.



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## Undo Changes in Git Using Bitbucket Cloud

# Git Commands

The most common git functions to undo a change or changes safely:

Command	Example	Explanation
git log	\$ git status On branch master Your branch is up-to-date with 'origin/master'. nothing to commit, working tree clean	Returns working directory, staging area, and updated files
git reset	\$ git log commit 1f08a70e28d84d5034a8076db9103f22ec2e9 82c	Lists the project history and search
git revert	\$ git revert 035lf	Creates new commit
git status	\$ git status On branch master Your branch is up-to-date with 'origin/master'.	Inspects the working directory and staging area



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## Introduction to GitLab

# What Is GitLab?

GitLab is a service that provides remote access to Git repositories.

Features of GitLab:



Manages git repository on centralized server

Keeps the user code private

Deploys the change on the user code

Provides user-friendly web interface layer

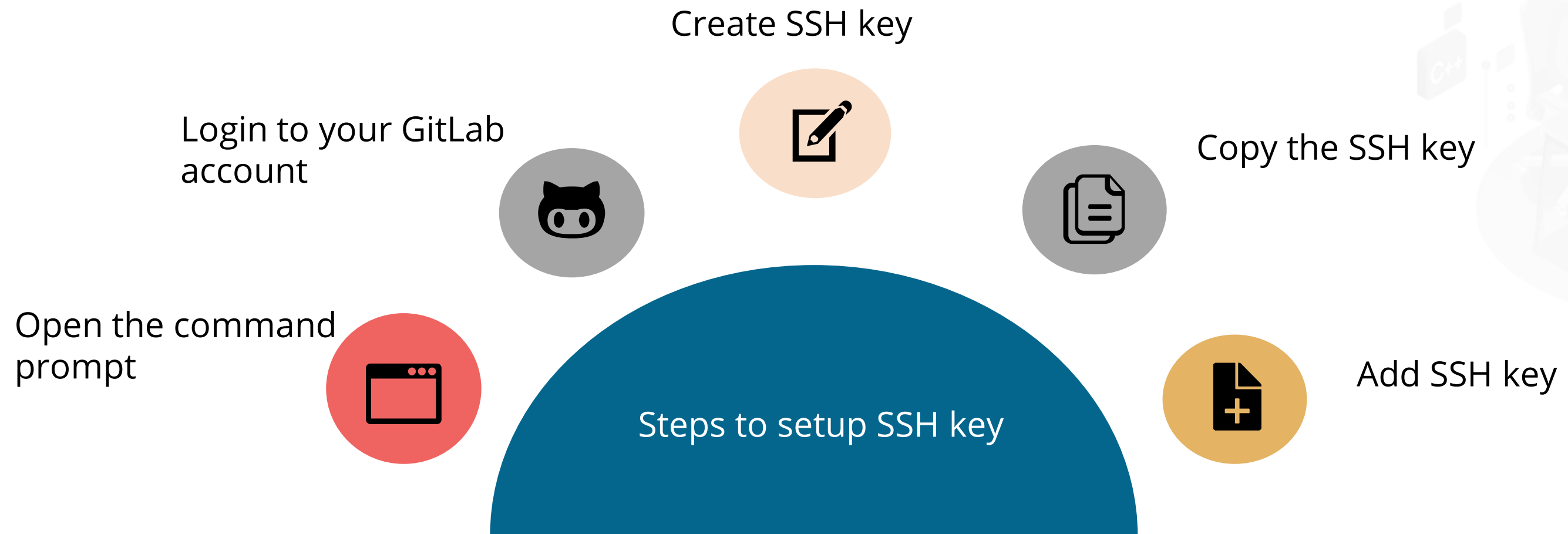


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## GitLab Basics

# SSH Key Setup

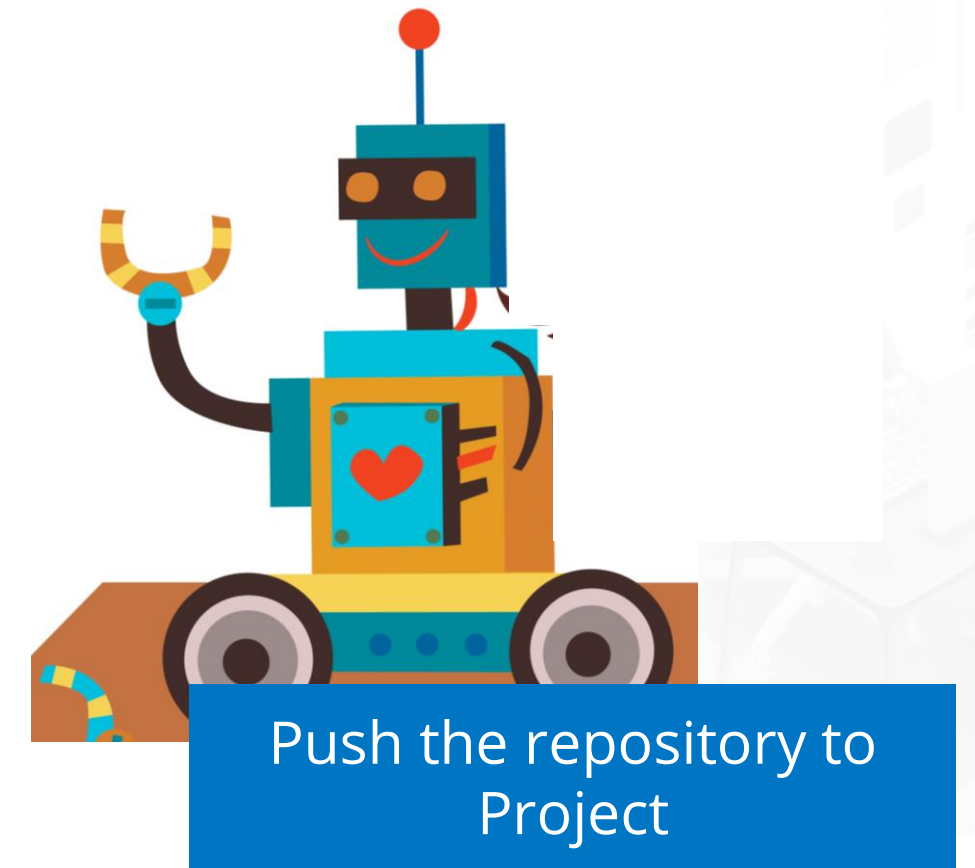
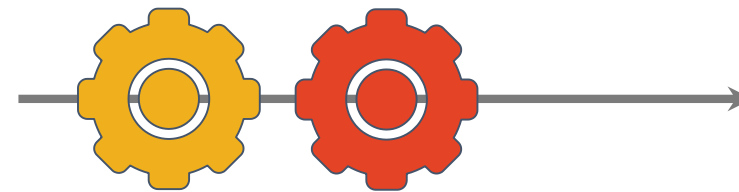
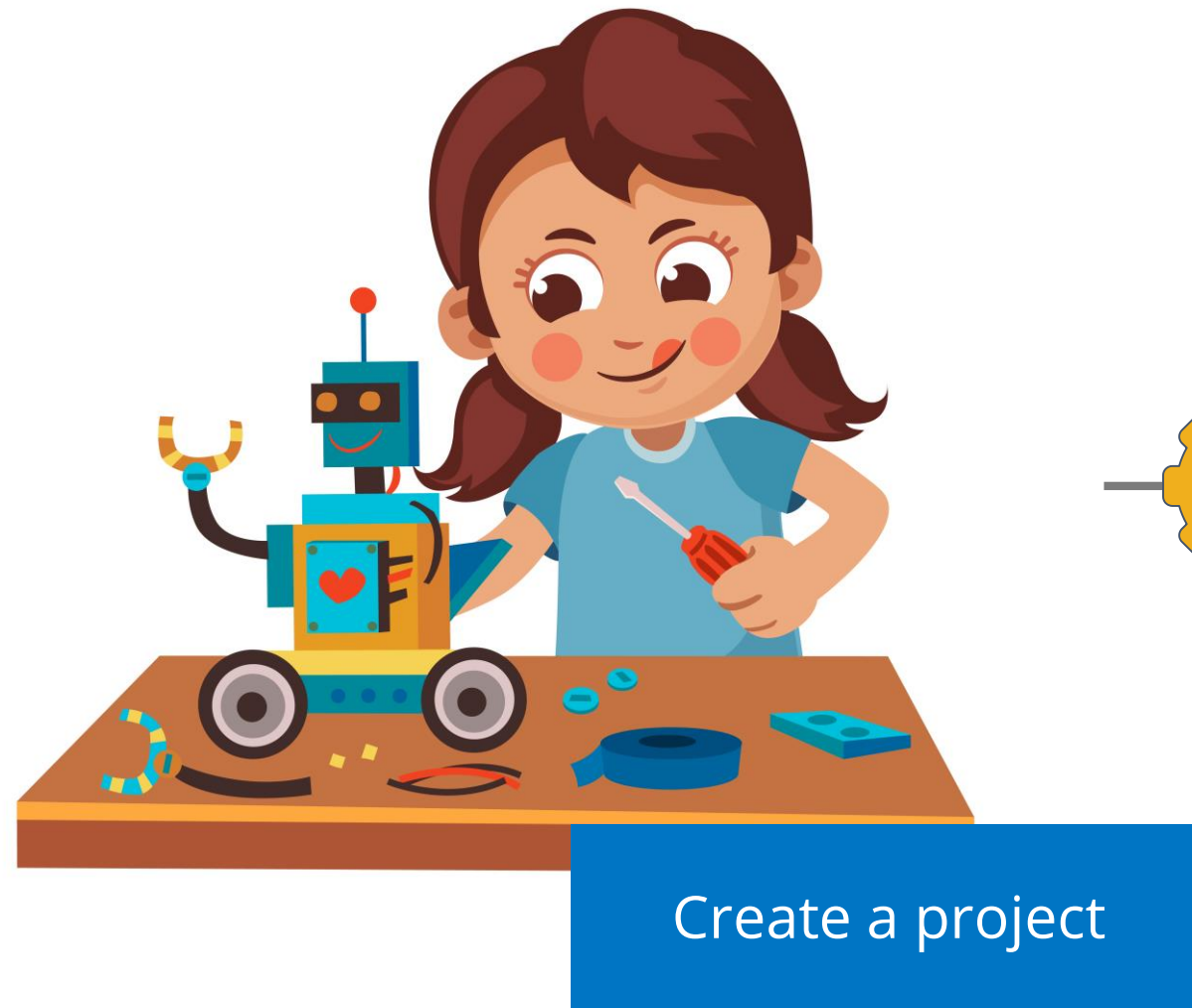
- Stands for Secure Shell or Secure Socket Shell
- Authenticates GitLab server





# Create a Project

In order to create a new project, the user must follow the instructions given below:

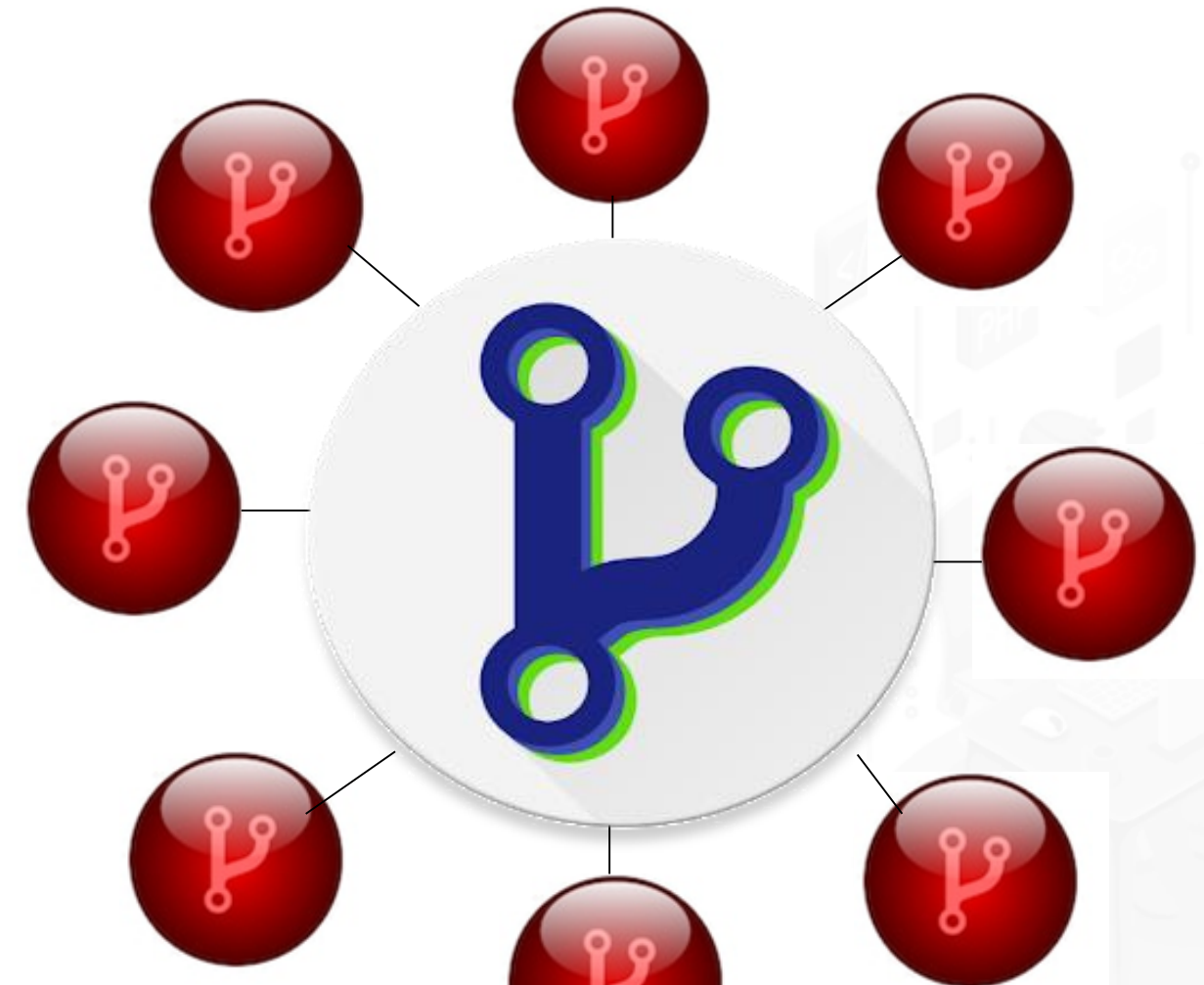
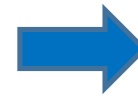


# Fork a Project

Fork is a duplicate of your original repository.



Click on Fork to fork a project

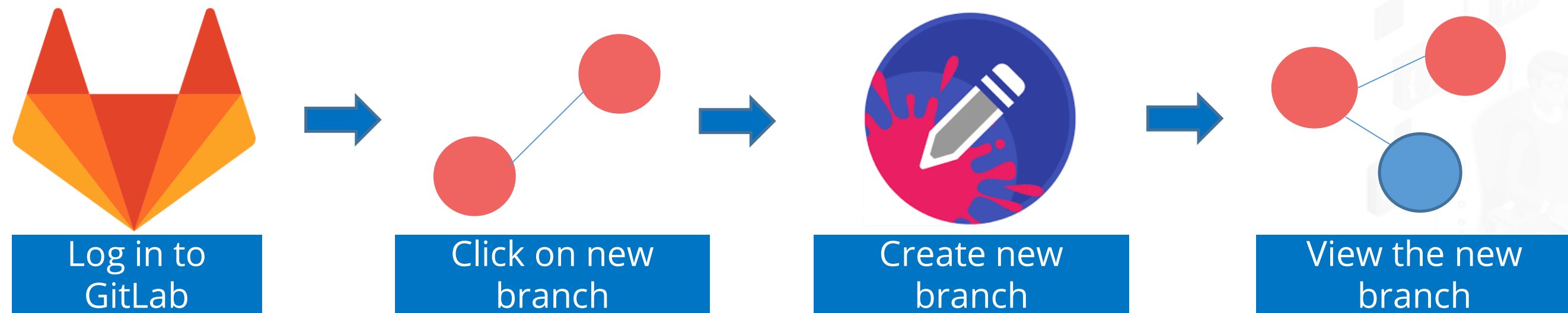


Add the forked project to a fork group

# Create a Branch

Branch is an independent line and part of the development process.

The creation of branch involves the following steps:



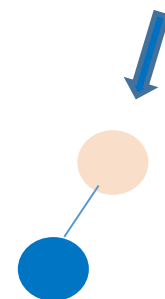
# Add a File

We can add files in two ways:

## Using command line

Enter the below command

```
C:\project>touch project2.html  
C:\project>
```



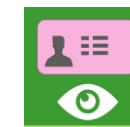
Check the project directory

## Using web interface

Click on the + button



Enter the details

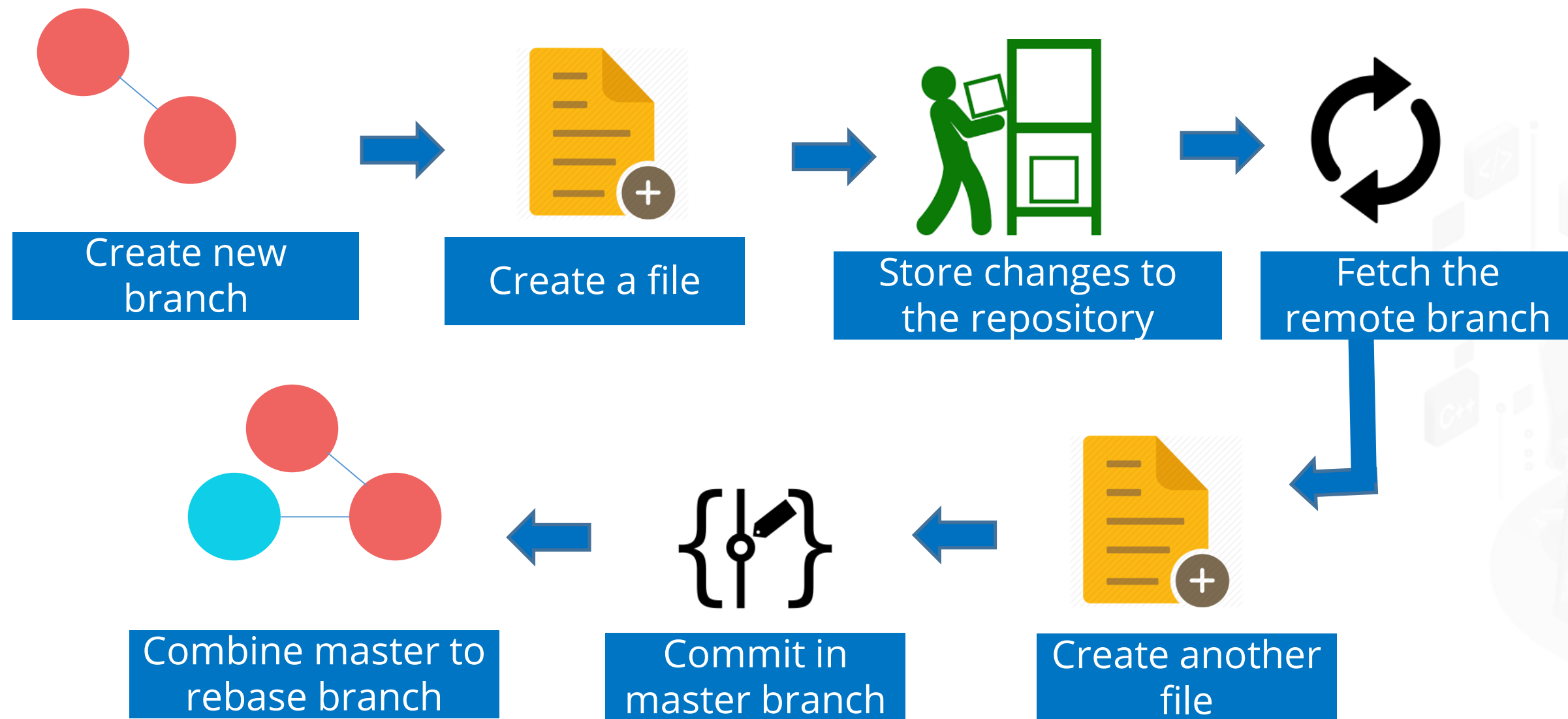


View file



# Rebase Operation

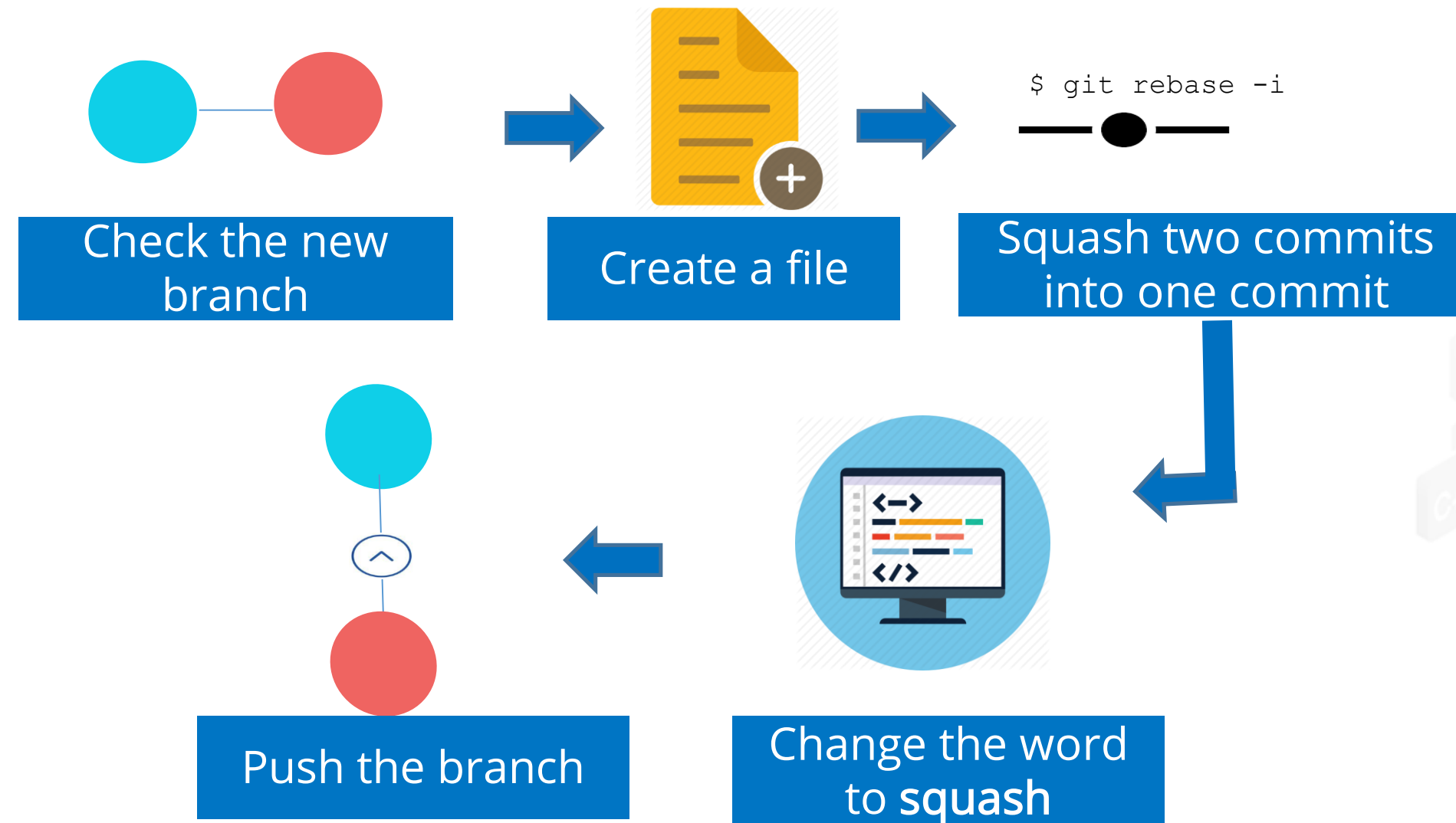
Rebase is a way of merging master to your branch with long running branches.





# Squashing Commits

Squashing is a way of combining all commits into one during a merge request.



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## Overview of GitLab Users and Groups

# Users and Groups

GitLab provides the following features:

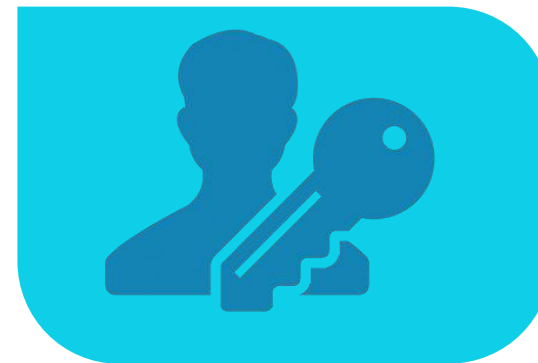
**Add Users:**  
Adding users to the project



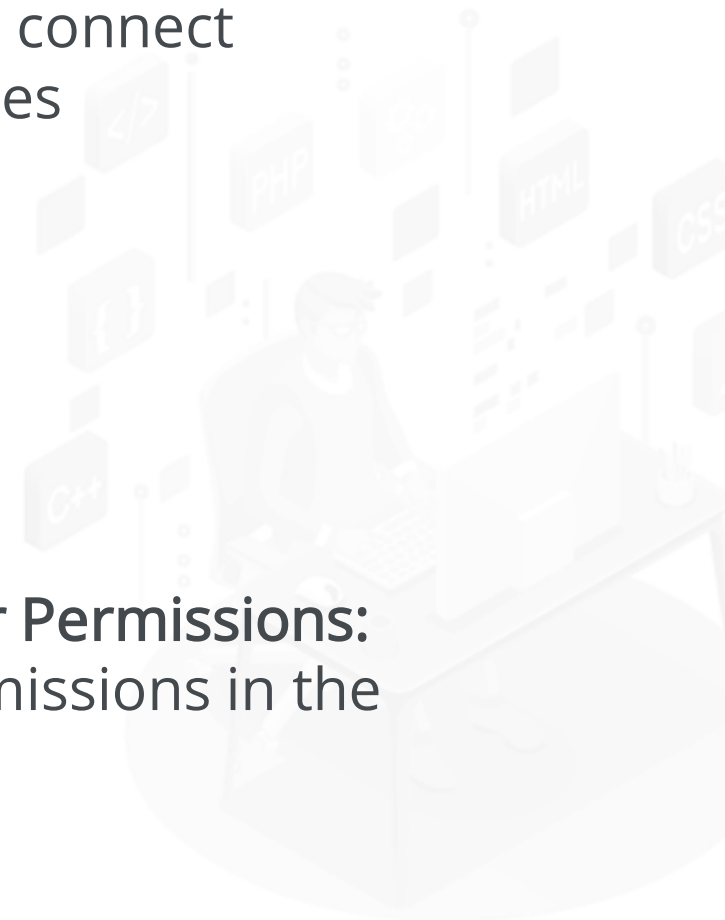
**Remove Users:**  
Removing users from a project



**Create Groups:**  
Creating groups to connect multiple repositories



**Adding User Permissions:**  
Adding permissions in the project

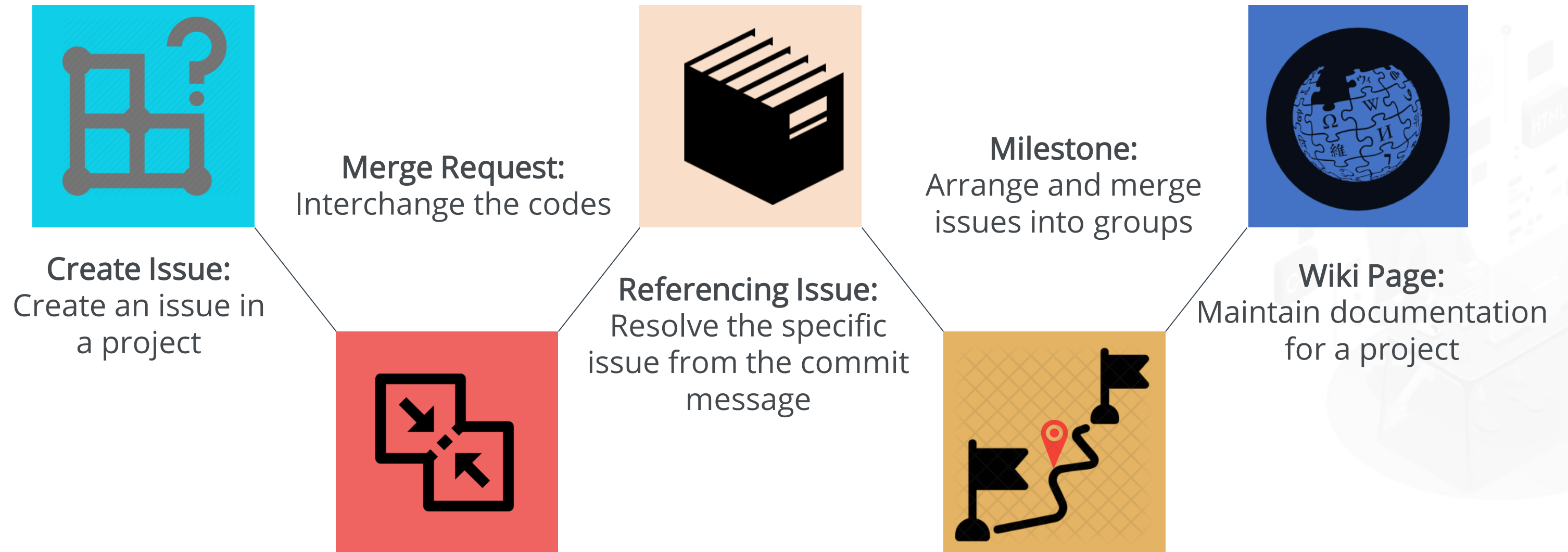


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## Overview of GitLab Issue Tracker

# Issue Tracker

GitLab issues are the fundamental medium for collaborating on ideas and planning work.





## Key Takeaways

- Bitbucket is a web-based version control system.
- Bitbucket can create, copy, pull, and merge repo.
- Branching is one of the best ways to get the most out of Git for version control.
- GitLab is great way to manage git repositories on a centralized server.
- GitLab can fork, rebase, and squash a project.



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## Knowledge Check

## Knowledge Check

1

Bitbucket and GitLab supports SVN. Is the statement true or false?

- a. True
- b. False



Knowledge  
Check

1

Bitbucket and GitLab supports SVN. Is the statement true or false?

- a. True
- b. False



The correct answer is **b**

Bitbucket and GitLab do not support SVN.

## Knowledge Check

2

How do you revert a commit that has already been pushed and made public in GitLab?

- a. git revert
- b. git commit
- c. git push
- d. git pull





## Knowledge Check

2

How do you revert a commit that has already been pushed and made public in GitLab?

- a. `git revert`
- b. `git commit`
- c. `git push`
- d. `git pull`



The correct answer is **a**

The “git revert” command reverts a commit that has already been pushed or made public in GitLab.

**Which of the following is not an advantage of Bitbucket over GitLab?**

- a. Provides powerful Jira integration
- b. Provides semantic search
- c. Provides continuous integration
- d. Provides plenty of native plugins



Knowledge  
Check

3

Which of the following is not an advantage of Bitbucket as compared to GitHub?

- a. Provides powerful Jira integration
- b. Provides semantic search
- c. Provides continuous integration
- d. Provides plenty of native plugins



The correct answer is **d**

GitHub provides plenty of native plugins as compared to Bitbucket.