

# Contribute with GitLab

SA<sup>2</sup> team  
(Software Automation Architecture)

February 2019



# AGENDA



- Introduction 00'10
- Concepts 00'30
- Existing workflows 00'30
- Our workflow 00'20
- Training 01'30



# Contribute with GitLab

Introduction

# Introduction

## Contribute with GitLab

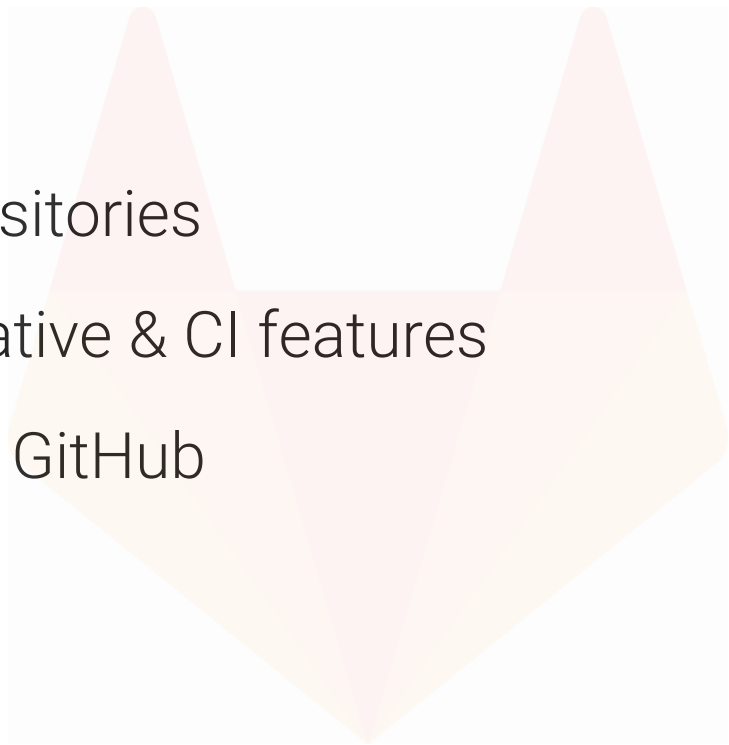
- Git
- GitLab
- A contribution workflow



# Introduction

## GitLab

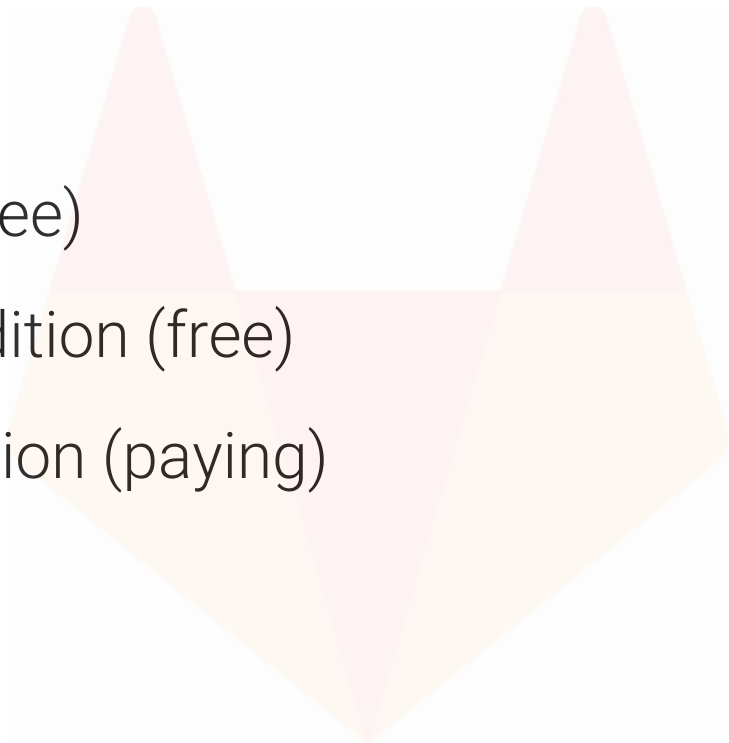
- Hosts Git repositories
- Adds collaborative & CI features
- Very similar to GitHub
- Open source



# Introduction

## GitLab

- GitLab.com (free)
- Community Edition (free)
- Enterprise Edition (paying)



# Introduction

## Contribution workflow

- Set of common rules and good practices
- Define one that **everyone agree with**
- Identify problems and questions before merging





# Contribute with GitLab

Concepts



# Concepts



Project

# Project

- Git repository + collaborative data
- Private, internal or public
- Owned by a group or a user



sopra-banking-software / sopra-banking-framework



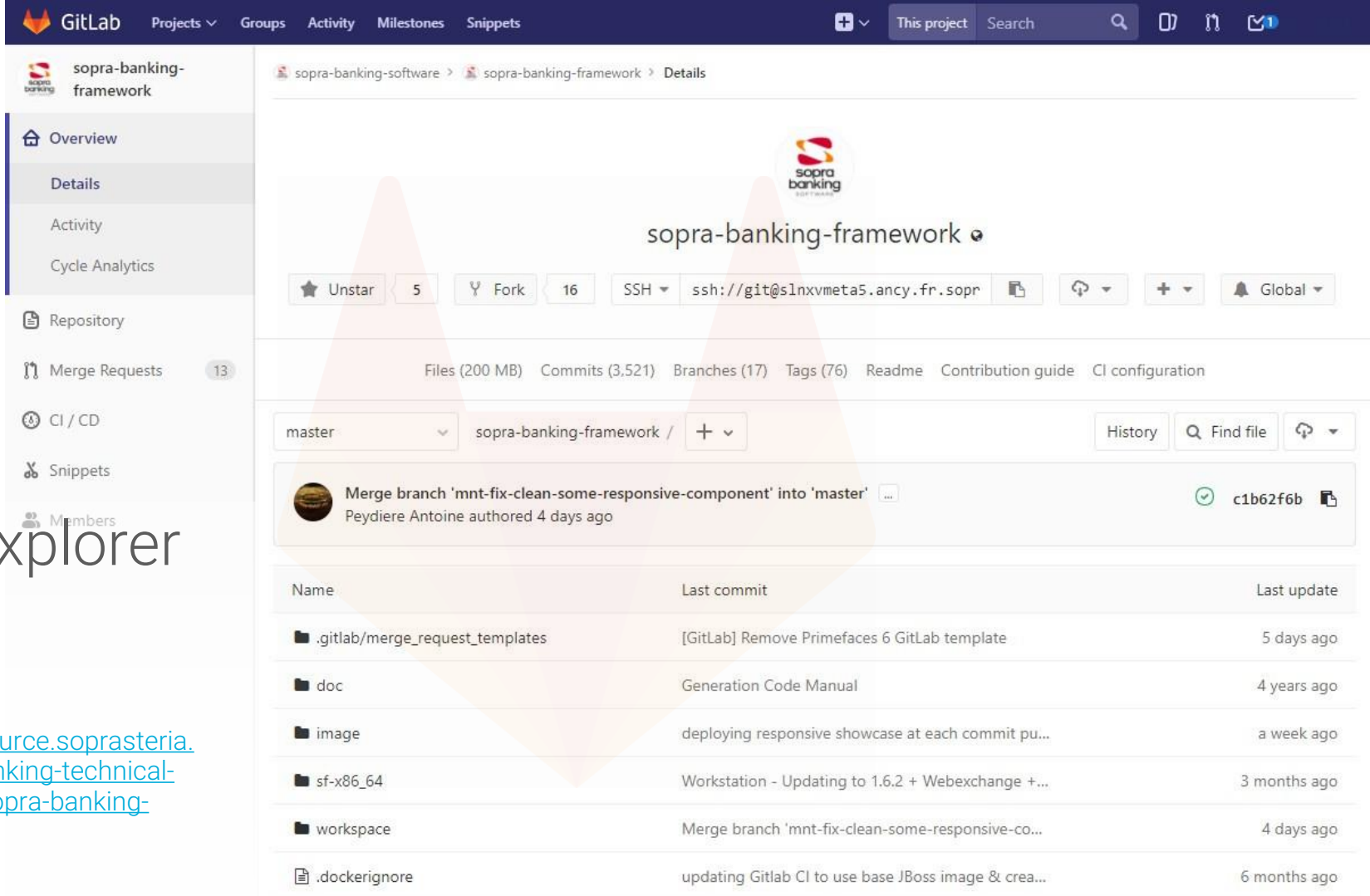
Tournie Stephane / sopra-banking-framework

# Project

## Files explorer

### Example:

<https://innersource.soprasteria.com/sopra-banking-technical-architecture/sopra-banking-framework>



The screenshot displays the GitLab web interface for the 'sopra-banking-framework' project. The top navigation bar includes the GitLab logo and links to Projects, Groups, Activity, Milestones, and Snippets. The left sidebar shows the project's navigation menu with options like Overview, Details, Activity, Cycle Analytics, Repository, Merge Requests (13), CI / CD, Snippets, and Members. The main content area shows the project details, including the repository name, star/fork counts, and the SSH URL. Below this, there are links to Files (200 MB), Commits (3,521), Branches (17), Tags (76), Readme, Contribution guide, and CI configuration. A recent commit is highlighted, showing a merge of the 'mnt-fix-clean-some-responsive-component' branch into 'master' by Peydiere Antoine. The bottom section displays a table of files in the repository.

Name	Last commit	Last update
.gitlab/merge_request_templates	[GitLab] Remove Primefaces 6 GitLab template	5 days ago
doc	Generation Code Manual	4 years ago
image	deploying responsive showcase at each commit pu...	a week ago
sf-x86_64	Workstation - Updating to 1.6.2 + Webexchange +...	3 months ago
workspace	Merge branch 'mnt-fix-clean-some-responsive-co...	4 days ago
.dockerignore	updating Gitlab CI to use base JBoss image & crea...	6 months ago

# Project

## Commits view

Example:

<https://innersource.soprasteria.com/sopra-banking-technical-architecture/sopra-banking-framework/commits/master>

The screenshot displays the 'Commits' view of the 'sopra-banking-framework' repository on the Innersource platform. The left sidebar shows the repository structure with 'Commits' selected. The main area lists commits grouped by date. The top group, dated '01 Feb, 2018', contains 6 commits. The bottom group, dated '31 Jan, 2018', contains 18 commits. Each commit entry includes a profile picture, a description, the author's name, the time since authoring, a commit hash, a file icon, and a 'Browse Files' button. A large, semi-transparent watermark of a stylized 'S' is overlaid on the commit list.

Date	Commit Count	Commit Message	Author	Time Ago	Hash	Files	Action
01 Feb, 2018	6	Merge branch 'mnt-fix-clean-some-responsive-component' into 'master'	Peydiere Antoine	4 days ago	c1b62f6b	1	Browse Files
		Merge branch '4615' into 'master'	Fernandes Damien	4 days ago	970c9a07	1	Browse Files
		[MNT] Fix Scss cleanup for migrated components + move Chart & loading spinner to...	Pollet Quentin	4 days ago	00edbe4a	1	Browse Files
		Merge branch 'TECARCH_IRM-4772' into 'master'	Fernandes Damien	4 days ago	578b20cb	1	Browse Files
		Merge branch 'MNT-fix-formItem-look' into 'master'	Pollet Quentin	4 days ago	823ce4ea	1	Browse Files
		Merge branch 'TECARCH_IRM-4893-commandLink' into 'master'	Pollet Quentin	4 days ago	ab92d153	1	Browse Files
31 Jan, 2018	18	[MNT] fix design in classic	Peydiere Antoine	4 days ago	0d5f8341	1	Browse Files
		[MNT] Selenium Test and refactor	Fauchart Lionel	4 days ago	c2932897	1	Browse Files
		[TECARCH_IRM-4893] Responsive - CommandLink	Fauchart Lionel	5 days ago	3f444087	1	Browse Files
		* TECARCH_IRM-4772 : Batch Reporting: New version of the CRT			4c84f4b2	1	Browse Files

# Project

## Branches view / compare

Example:

<https://innersource.soprasteria.com/sopra-banking-technical-architecture/sopra-banking-framework/compare/1.15.1...1.15.2>

The screenshot displays the GitHub interface for the 'sopra-banking-framework' repository. The left sidebar shows the repository navigation menu with 'Compare' selected. The main content area shows a comparison between revisions 1.15.2 (Source) and 1.15.1 (Target). Below the comparison bar, a list of 14 commits is shown, including release preparations, bug fixes, and merges. The bottom section shows a diff view of a file, highlighting changes in the 'bannerTitle' and 'comment' sections.

GitLab Projects Groups Activity Milestones Snippets

sopra-banking-framework

Overview Repository Files Commits Branches Tags Contributors Graph Compare Charts Merge Requests 13 Snippets Members

sopra-banking-software > sopra-banking-framework > Compare Revisions > 1.15.1...1.15.2

Source 1.15.2 Target 1.15.1 Compare

Commits (14)

- [RELEASE]prepare for next development iteration jenkins authored a month ago f302e003
- [JIRA:TECARCH\_IRM-4853] JSF - FileUpload simple doesn't work on WKS Silva Raul authored a month ago 30aa82ce
- Merge branch 'JIRA-4853' into 'master' Pollet Quentin authored a month ago 86ae6797
- [TECARCH\_IRM-4846] JSF - Showcase precision on DateField component Pollet Quentin authored a month ago 407b6677
- [RELEASE]prepare release 1.15.2 jenkins authored a month ago c182d02d

workspace/sopra-banking-framework-superpom/sopra-banking-framework/sopra-banking-framework... View file @ c182d02d

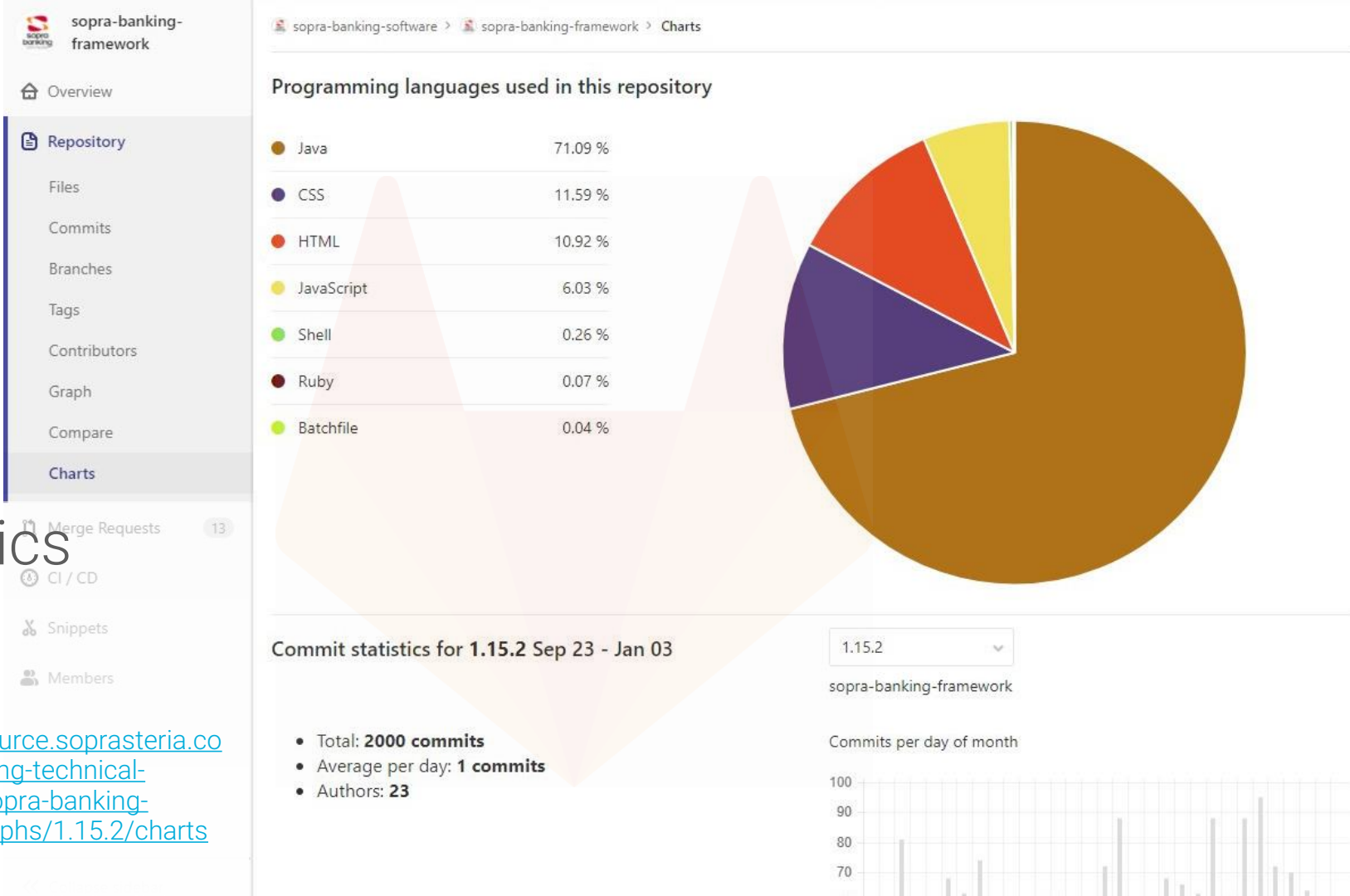
```
@@ -22,6 +22,10 @@
22 22 <ui:param name="csvCompatible" value="true" />
23 23
24 24 <ui:define name="bannerTitle">DateField</ui:define>
25 +
26 + <ui:define name="comment">
27 + The pageDate, minDate and maxDate properties should get a Date value from the controller. Setting the value from
28 + String isn't working.
29 + </ui:define>
25 29 <ui:define name="field">
26 30 <sbf:dateField
27 31
```

# Project

## Statistics

### Example:

<https://innersource.soprasteria.com/sopra-banking-technical-architecture/sopra-banking-framework/graphs/1.15.2/charts>



# CI configuration

sopra-banking-technical-architecture > sopra-banking-framework > Pipelines > #18768

 **Pipeline #18768** triggered 2 days ago by  CHALLUT Nicolas

## Merge branch 'master' into 'master'

[MNT] Update .gitlab-ci.yml

See merge request !431

🕒 4 jobs from master in 6 minutes 58 seconds (queued for 1 second)

🔑 33ea18b0  

Pipeline Jobs 4

Prepare



build-jboss-ima...

Build



compile-and-un...

Deploy



deploy-responsi...

Cleanup



clean-old-images

- .gitlab-ci.yml
- Pipeline of jobs
- Triggered by commit push
- Status on Merge Request

Example:

<https://innersource.soprasteria.com/sopra-banking-technical-architecture/sopra-banking-framework/pipelines/18768>



# Project

Build status badge  
in README.md

## Example:

<https://innersource.soprasteria.com/software-automation-architecture/ci/docker-ci/blob/master/README.md>



# Docker base image used by GitLab CI pipelines

```
[[pipeline status]](https://innersource.soprasteria.com/software-automation-architecture/ci/docker-ci/badges/master/pipeline.svg)](https://innersource.soprasteria.com/software-automation-architecture/ci/docker-ci/commits/master)
```

# CONTRIBUTING.md

## *Sopra Banking Framework Contributing Guide*

### Basic steps

To contribute to *Sopra Banking Framework* first ask your [GitLab admin](#) to give you permission on the project, fork the [origin repository](#) to your own GitLab account, clone your fork, commit your work on topic branches, and make Merge Requests.

Here are the steps in detail:

### Example:

<https://innersource.sopra.com/sopra-banking-technical-architecture/sopra-banking-framework/blob/master/CONTRIBUTING.md>

1. Fork the project. This creates a new project in your own GitLab account with a fork relationship to the original repository.
2. Clone the original repository. This creates and populates a directory in your local file system.

```
git clone https://slnxvmeta5.ancy.fr.sopra/sopra-banking-software/sopra-banking-framework.git  
(in Eclipse: left click in Project Explorer then Import > Projects from Git > Clone URI)
```

3. Add the remote `<your-username>` repository so you can push your changes to your forked repository and create Merge Requests.

```
git remote add <your-username> https://slnxvmeta5.ancy.fr.sopra/<your-username>/sopra-banking-framework.git  
(in Eclipse: in Git perspective, expand the original repository and left click on Remotes > Create Remote...)
```

4. Get the latest files from the `origin` repository.

```
git fetch origin  
(in Eclipse: left click on your project then Team > Pull)
```

5. Create a new topic branch to contain your features, changes, or fixes using the `git checkout -b <topic-branch-name> origin/master` command. For example:

```
git checkout -b EVOTA-123 origin/master
```

# Concepts



# Contribute

## Fork

- Copy of an existing repository
- New project on another group/user workspace
- Link to origin project



# Contribute

## Merge Request

Open

Merge Request !22 opened 3 weeks ago by  Fernandes Damien 0 of 4 tasks completed

Close

Edit

### WIP: EVOTA-3870: Middleware controller - data access Cobol / New Connector

What does this Merge Request implement or fix ?

Middleware controller - data access Cobol / Only New Connector with JCA [EVOTA-3870](#)

Are there points in the code the reviewer needs to double check ?

- Dependencies in pom.xml
- Throwable errors in connector

Does this MR meet the acceptance criteria ?

- ☐ Documentation created/updated (if relevant)
- ☐ Tests added for this feature and passing (Tests can be done in SBFSA)
- ☐ Branch has no merge conflicts with master (if it does - rebase it please)
- ☐ Squashed related commits together

Edited about 17 hours ago

Request to merge [dfernandes:EVOTA-3870](#) into [master](#) (71 commits behind)

[Check out branch](#)
[Download as](#) ▼

✓ Pipeline #212 passed for 7d3aba93.

This merge request is currently a Work In Progress

When this merge request is ready, remove the [WIP:](#) prefix from the title to allow it to be merged.



0



0



Add

[Discussion](#) 3

[Commits](#) 2

[Pipelines](#) 2

[Builds](#) 1

[Changes](#) 12

✓ 1/1 discussion resolved



Fernandes Damien @dfernandes commented 3 weeks ago

@dmartins I do Connector for CICS and TSD, can you take a look ?

[Master](#)


# Contribute

## Merge Request

- Request to integrate changes in main repository/branch
- Related to a (JIRA) Story
- From a **branch in same project or in a fork**
- Discussed, reviewed, (reworked,) validated and... merged

# Contribute

## Merge Request

- One Merge Request  $\neq$  one commit
- Usual target branch is **origin/master**
- Both human and automated validation



# Contribute

## Code review

- Manual / read code
- Validate Merge Request made by another developer
- Any relevant discussion, link, quote, inline, ...



Filipa Lacerda @filipa started a discussion on [the diff](#) about an hour ago  
Last updated by Filipa Lacerda about an hour ago

`app/assets/javascripts/vue_pipelines_index/store.js.es6`

21	21	<code>gl.PipelineStore = class {</code>
22	22	<code>  fetchDataLoop(Vue, pageNum, url, apiScope) {</code>
23	23	<code>    this.pageRequest = true;</code>
24	-	<code>    const updatePipelineNums = (count) =&gt; {</code>



Filipa Lacerda @filipa commented about an hour ago  
Created an issue to handle this: [#28243](#)

This code updates the DOM after we receive the API response, but there is no need for correct. - I added tests to confirm this.

We need to refactor the tabs into vue instead of haml and only use the API response.



Filipa Lacerda @filipa commented about an hour ago

[@iamphill](#) [@fatihacet](#) can you take a look at this and see if it makes sense? The rest of  
Thanks in advance! 🙌

Filipa Lacerda @filipa marked the task [Squashed related commits together](#) as completed about an hour ago



Filipa Lacerda @filipa commented about an hour ago  
[@ayufan](#) can you please review this?

# Contribute

## Automated validation

- Compile & unit tests
- Sonar analysis
- Fail if error
- Notify author

```
59 + public String marshal()  
60 + {  
61 +     try  
62 +     {  
63 +         return mapper.writeValueAsString(this);  
64 +     }  
65 +     catch (JsonProcessingException e)  
66 +     {  
67 +         e.printStackTrace();  
68 +     }  
69 +     return "";  
70 + }  
71 + }
```

SonarQube @sonarqube commented 2 weeks ago  
⚠ Document this public method.

Reply...

SonarQube @sonarqube commented 2 weeks ago  
⚠ Either log or rethrow this exception.

Reply...

SonarQube @sonarqube commented 2 weeks ago  
🚫 Use a logger to log this exception. ⓘ Method com.sopra.framework.jaxrs.core.AbstractJaxrsDto.ma

Reply...



SonarQube @sonarqube commented 2 weeks ago  
SonarQube analysis reported 9 issues for this commit:

- ⓘ 2 info
- ⬆ 1 minor
- ⚠ 4 major
- 🚫 2 critical

Look at the inline comments inserted above to review related issues.



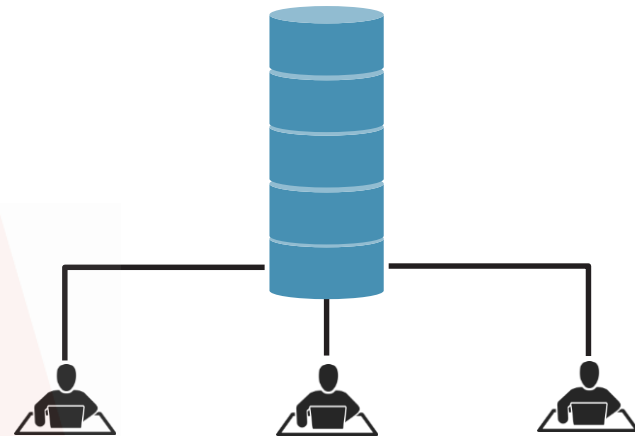
# Contribute with GitLab

Existing workflows

# Workflows

## Centralized flow

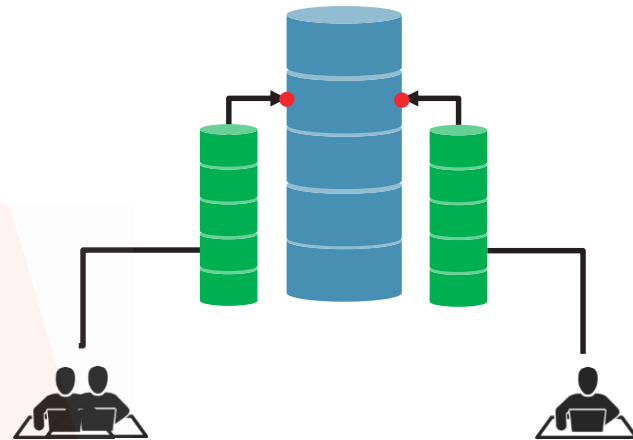
- Central repository
- All changes committed to origin/master
- SVN-like



# Workflows

## Feature branch flow

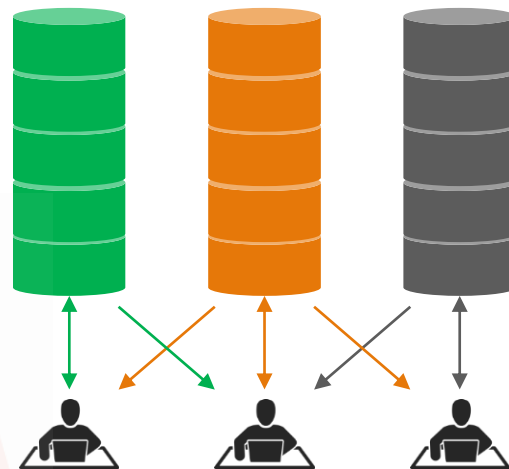
- Centralized flow + **feature branches**
- Isolated branch per feature/Story
- Work on a particular feature without disturbing the main codebase
- Merge Requests possible (code review, discussion)
- Feature Branch – (Martin Fowler) <https://martinfowler.com/bliki/FeatureBranch.html>



# Workflows

## Forking flow

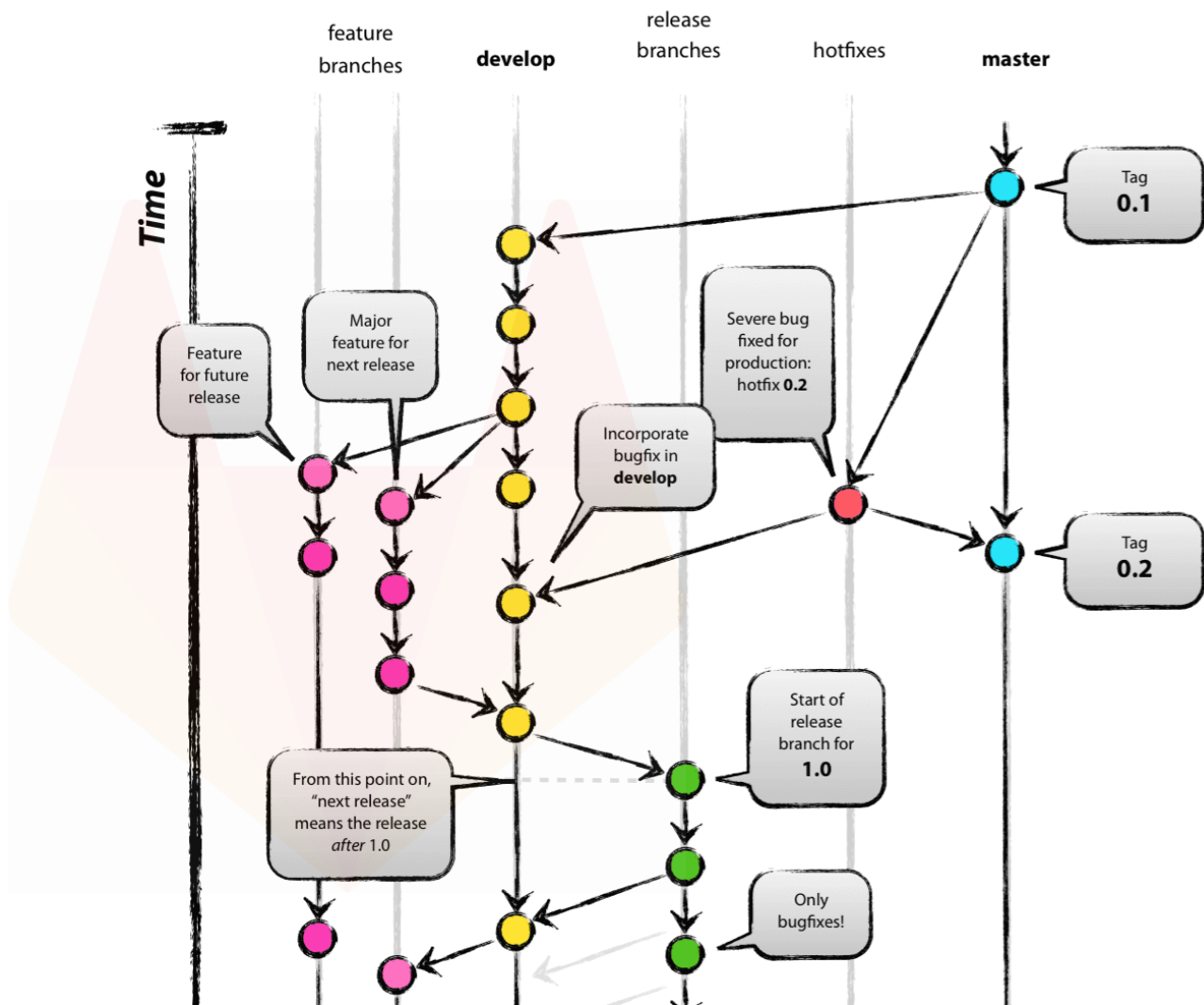
- No push to central repository
- Every developer has a **fork** of the original repository
- So each developer has **two Git repositories**
- Only the project maintainer can push to the original repository
- Original repository evolves through merge requests



# Workflows

## Git flow

<http://nvie.com/posts/a-successful-git-branching-model/>

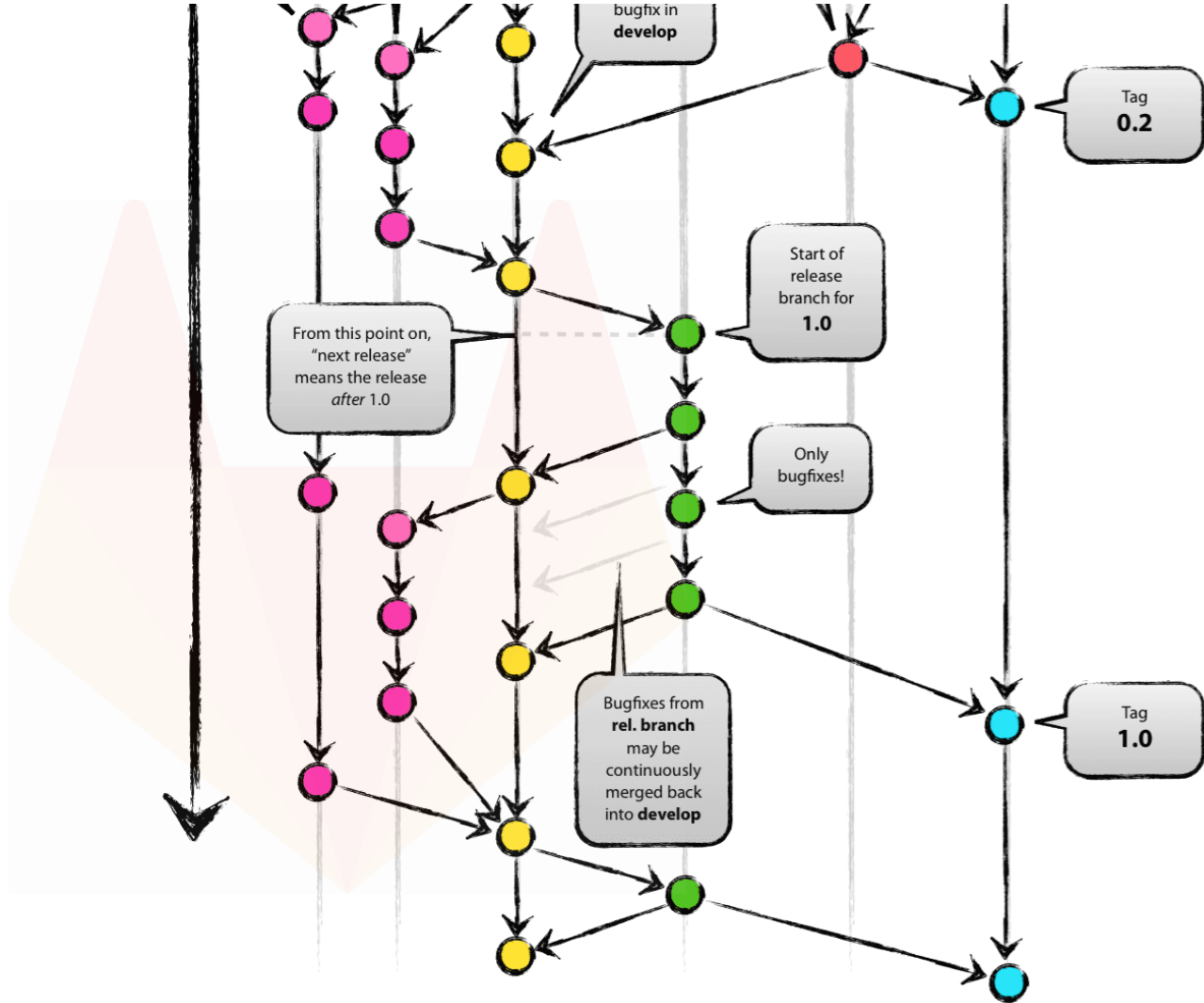




# Workflows

## Git flow

<http://nvie.com/posts/a-successful-git-branching-model/>



# Workflows

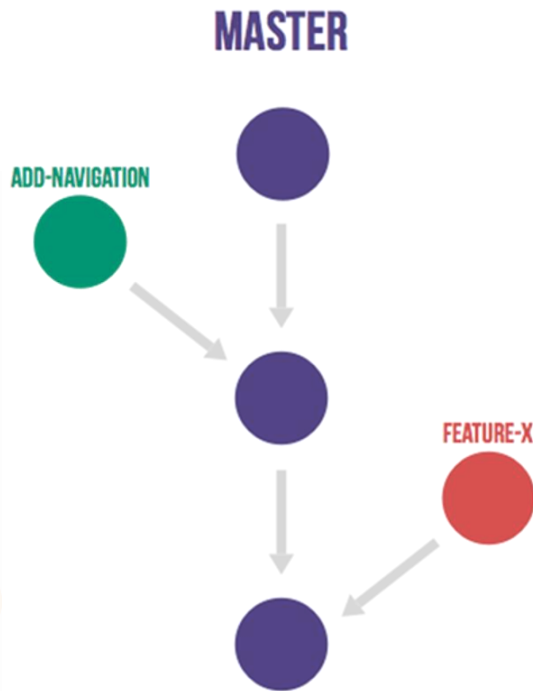
Git flow - <http://nvie.com/posts/a-successful-git-branching-model/>

- Feature branch flow + specific roles to different branches
- Strict branching model around the project release
- branches:
  - **develop** = integration branch for features
  - **feature branches** = one branch per feature
  - **release branches**
  - **master** = release history
  - **hotfixes** = quick patches for production releases

# Workflows

GitHub flow - <http://scottchacon.com/2011/08/31/github-flow.html>

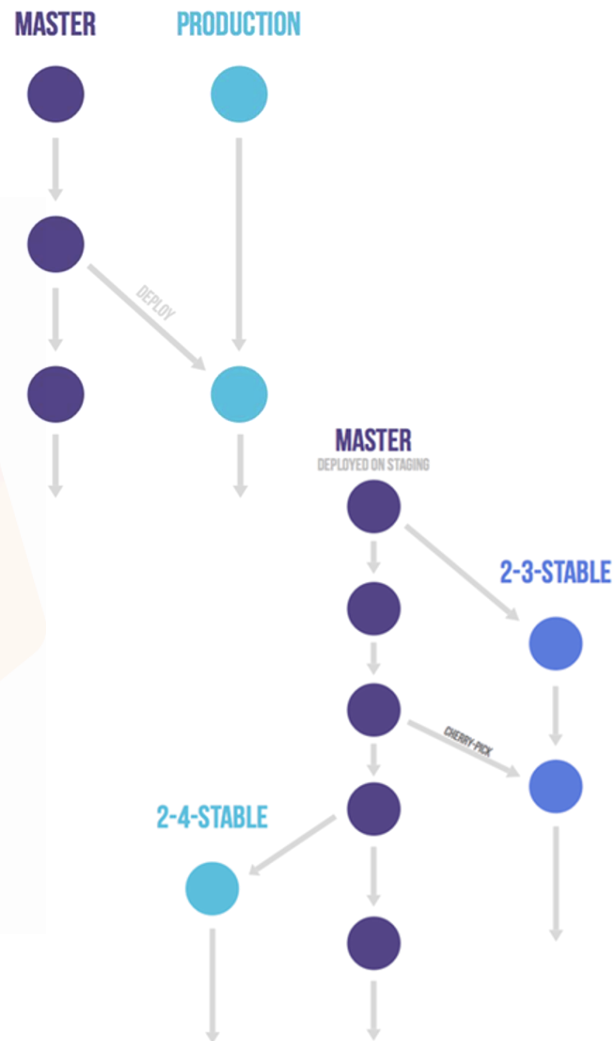
- Back to basics
- Any commit must be self-sufficient (rollback possible)
- Open a Pull Request at any time (ready / need help / need feedback)
- Deploy immediately after your Pull Request get reviewed & merged
- “Anything in the master branch is always **deployable**”



# Workflows

GitLab flow - [https://docs.gitlab.com/ce/workflow/gitlab\\_flow.html](https://docs.gitlab.com/ce/workflow/gitlab_flow.html)

- Add practical rules to the GitHub flow
  - protect long-lived branches (usually master)
  - commit often
  - test before merging
  - squash commits with rebase
  - link issues to Merge Requests
  - request approvals on Merge Requests
  - prevent merge commits, but don't eliminate them
  - remove merged branch





# Contribute with GitLab

Proposed workflow

# Proposed workflow

- This workflow is explained here <https://documentation-sa2.apps.sodigital.io/development-workflow/>
- origin/master always protected
- Feature branch per (JIRA) Story
- Merge Request with human & automated validation
- Commit & development rules

# Proposed workflow

## Protected branch (origin/master)

- No commits are allowed in origin/master  
Modify origin/master only through Merge Requests
- “Anything in the master branch is always **deployable**”
- Any change must be double checked **before merging**
- Any commit can be rolled back
- Protect other branches on origin ?



# Proposed workflow

## Feature branch per Story

- One JIRA Story = one Git branch
- Work / discussion / team isolation
- Naming convention
- Source of Merge Requests
- Feature branches can be **shared** between several devs

# Proposed workflow

## Merge Request with validation

- Create Merge Request once you need:
  - help
  - feedback
  - validation
- A Merge Request is a **living process**
- Code review + CI build + Sonar analysis before merging

# Proposed workflow

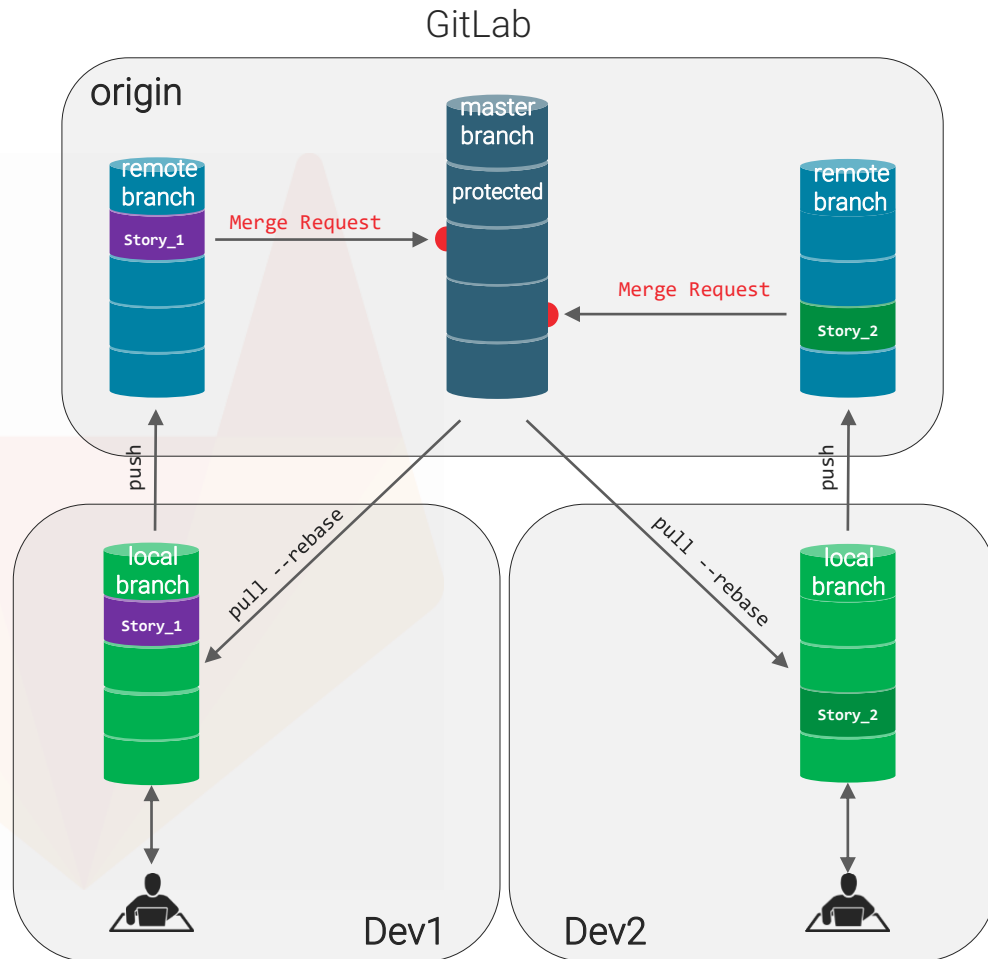
## Commit & development rules

- Any commit must be « buildable » & « revertable »
- Merge Requests description must follow a *Template*
- MRs must be **approved** before merging  
(all discussions marked resolved)
- Commits in MRs that are related must be squashed before merging

# Proposed workflow

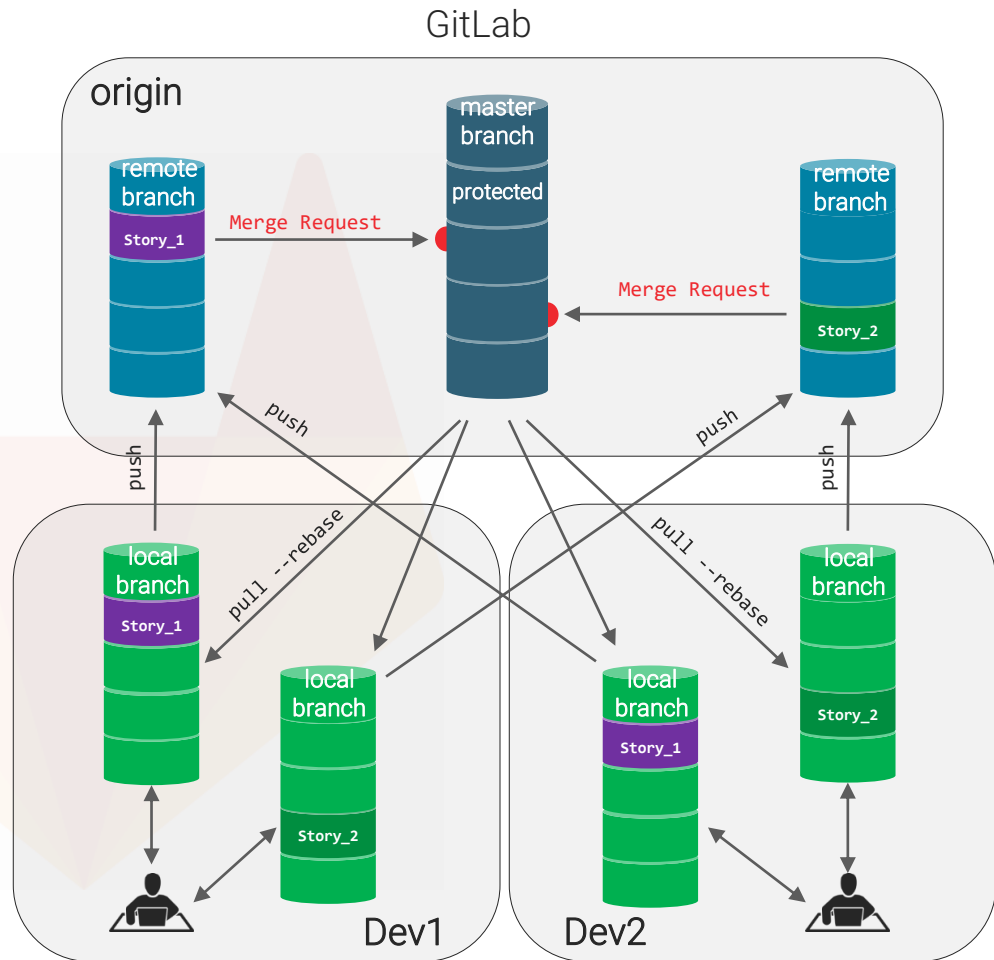
## Summary

- Branch per Story (Story-...)
- Branches created locally
- Common rules in Merge Request template
- Merge Request OK when:
  - Rules OK
  - Build OK
  - Sonar OK
  - 2 approvals



# Proposed workflow

Feature branches can be shared between several developers



# (optional) Commit message Emoji

Swagg up your commit messages

- Prepend every commit message with an emoji with this form:  
**<emoji> commit message**
- <https://gitlab.com/gitlab-org/gitlab-ce/blob/master/doc/user/markdown.md#emoji>
- <https://github.com/dannyfritz/commit-message-emoji>

## Commits Without Emoji 😞

0.5.2

Fix exporting of the library to include \_ifElse

add \_ifElse to README.md

add \_ifElse

## Commits with Emoji 😊

📝 0.5.2

🐛 Fix exporting of the library to include \_ifElse

📖 add \_ifElse to README.md

🔧 add \_ifElse



# Contribute with GitLab

Training

# Training

## Contribute



1. Clone origin repository
2. Create a local branch
3. Implement changes
4. Push changes remotely
5. Check branch on the repos
6. Create a Merge Request
7. Assignee: review the Merge Request
8. Assignee: merge the Merge Request
9. Update (JIRA) Story status



# Training



Clone origin repository

- Clone <https://innersource.soprasteria.com/software-automation-architecture/git-training> from Innersource

# Training



Clone origin repository

- Clone <https://innersource.soprasteria.com/software-automation-architecture/git-training> from Innersource

```
$ git clone  
git@innersource.soprasteria.com:software-  
automation-architecture/training/git-training.git
```

# Training



## Implement changes required by a Story

- Go to your JIRA Story & click on « Start »
- Create a local branch named following naming convention of your project
- Implement & commit changes

# Training



## Implement changes required by a Story

- Go to your JIRA Story & click on « Start »
- Create a local branch named following naming convention of your project

```
$ git checkout -b SA2_BLM-... master
```

- Implement & commit changes

```
$ git add ... & git commit -m "message"
```

# Training

Push changes remotely

- Push your local branch remotely



# Training

Push changes remotely

- Push your local branch remotely

```
$ git push origin <branch>
```



# Training



Check branch on the repos

- Check branch commits on GitLab
- Compare your branch with master branch on GitLab
- Check that CI build is successful

# Training



## Check branch on the repos

- Check branch commits on GitLab

<https://innersource.soprasteria.com/software-automation-architecture/git-training/commits/{branch}>

- Compare your branch with master branch on GitLab

<https://innersource.soprasteria.com/software-automation-architecture/git-training/compare/master...{branch}>

- Check that CI build is successful

<https://innersource.soprasteria.com/software-automation-architecture/git-training/pipelines/{pipeline-id}>



# Training

## Create a Merge Request (1)



- In the git-training project create a *Merge Request*

# Training



## Create a Merge Request (1)

- In the git-training project create a *Merge Request*

<https://innersource.soprasteria.com/software-automation-architecture/git-training/tree/{branch}>

You pushed to **Story-1** 4 minutes ago

Create merge request

# Training

## Create a Merge Request (2)

- Fill *Title* and *Description*
- Choose another attendee as *Assignee*
- Create Merge Request



# Training

## Create a Merge Request (2)

- Fill *Title* and *Description*



### New Merge Request

From `Story-1` into `master` Change branches

Title

Start the title with `WIP:` to prevent a **Work In Progress** merge request from being merged before it's ready.

Add [description templates](#) to help your contributors communicate effectively!

Description

Write Preview

**B** **I** **”** **<>** **≡** **≡** **☑** **✎**

Add here a link to the story  
[Story-XXXX](https://constellation.soprasteria.com/jira2/browse/Story-XXXX)

Detail here all the acceptance criterias

1

Markdown and quick actions are supported Attach a file

# Training

## Create a Merge Request (2)



- Choose another attendee as *Assignee*

A screenshot of a web form for creating a Merge Request. The form is enclosed in a blue border. It contains three dropdown menus: 'Assignee' with 'TOURNIE Stephane' selected, 'Milestone' with 'Milestone' selected, and 'Labels' with 'Labels' selected. To the right of the 'Assignee' dropdown is a button labeled 'Assign to me'.

Assignee	TOURNIE Stephane	Assign to me
Milestone	Milestone	
Labels	Labels	

# Training

## Create a Merge Request (2)



- Create Merge Request

Important

Source branch Story-1

Target branch master [Change branches](#)

☒ Remove source branch when merge request is accepted.

☐ Squash commits when merge request is accepted. [About this feature](#)

[Submit merge request](#)

# Training



## Create a Merge Request (3)

- Comment on your JIRA Story with a link to the Merge Request...

or setup [JIRA integration](#) on your Innersource project

→ reference and close JIRA items from Merge Requests

# Training

## Assignee: review Merge Request (1)



- Check build status on Merge Request →
- Check particular points to review
- Read/review changes
- Open inline / global discussion(s) →
- Wait for answer from the developer

Request to merge stournie:SONAR-ANALYSIS-BUILD into master

✓ Pipeline #160 passed for e1988070.

```
src/test/java/com/example/TestGreeter.java
...      ...      @@ -17,14 +17,12 @@ public class TestGreeter {
17      17      greeter = new Greeter();
18      18      }
19      19
20      - @Test
```



Administrator @root commented 3 minutes ago  
Why ? 🤔

Reply...



# Training



## Assignee: review Merge Request (2)

- Check that all discussions are well answered
- Check that all new changes are ok
- Check that all « acceptance criteria » are ok
- Give your approval

The screenshot shows a Merge Request interface. At the top, there are three buttons: a thumbs up icon with '1', a thumbs down icon with '0', and an 'Add' button with a plus icon. Below these are three tabs: 'Discussion' (with a '1' badge), 'Commits' (with a '1' badge), and 'Changes' (with a '3' badge). The 'Discussion' tab is selected. Below the tabs, there is a comment from 'Administrator @root' saying 'Ok' with a profile picture icon. An arrow points from the 'Give your approval' list item to the thumbs up button. Another arrow points from the 'Check that all « acceptance criteria » are ok' list item to a checklist on the right.

**Does this MR meet the acceptance criteria ?**

- ☐ Documentation created/updated (if relevant)
- ☐ Tests added for this feature and passing
- ☐ Branch has no merge conflicts with master (if it does - rebase it please)
- ☐ Squashed related commits together

# Training



Assignee: merge Merge Request

- Click on *Merge* button
- Wait for merge process to finish
- Check commits on origin/master

Accept Merge Request



Merged by  Tournie Stephane 2 weeks ago

The changes were merged into `master`. The source branch has been removed.

Revert

Cherry-pick

# Training

## Update status of JIRA Story



- Set status to « Done » on JIRA Story...

or do nothing thanks to [JIRA integration](#)

THINKING AHEAD BEGINS NOW. ■

Thank you.

