

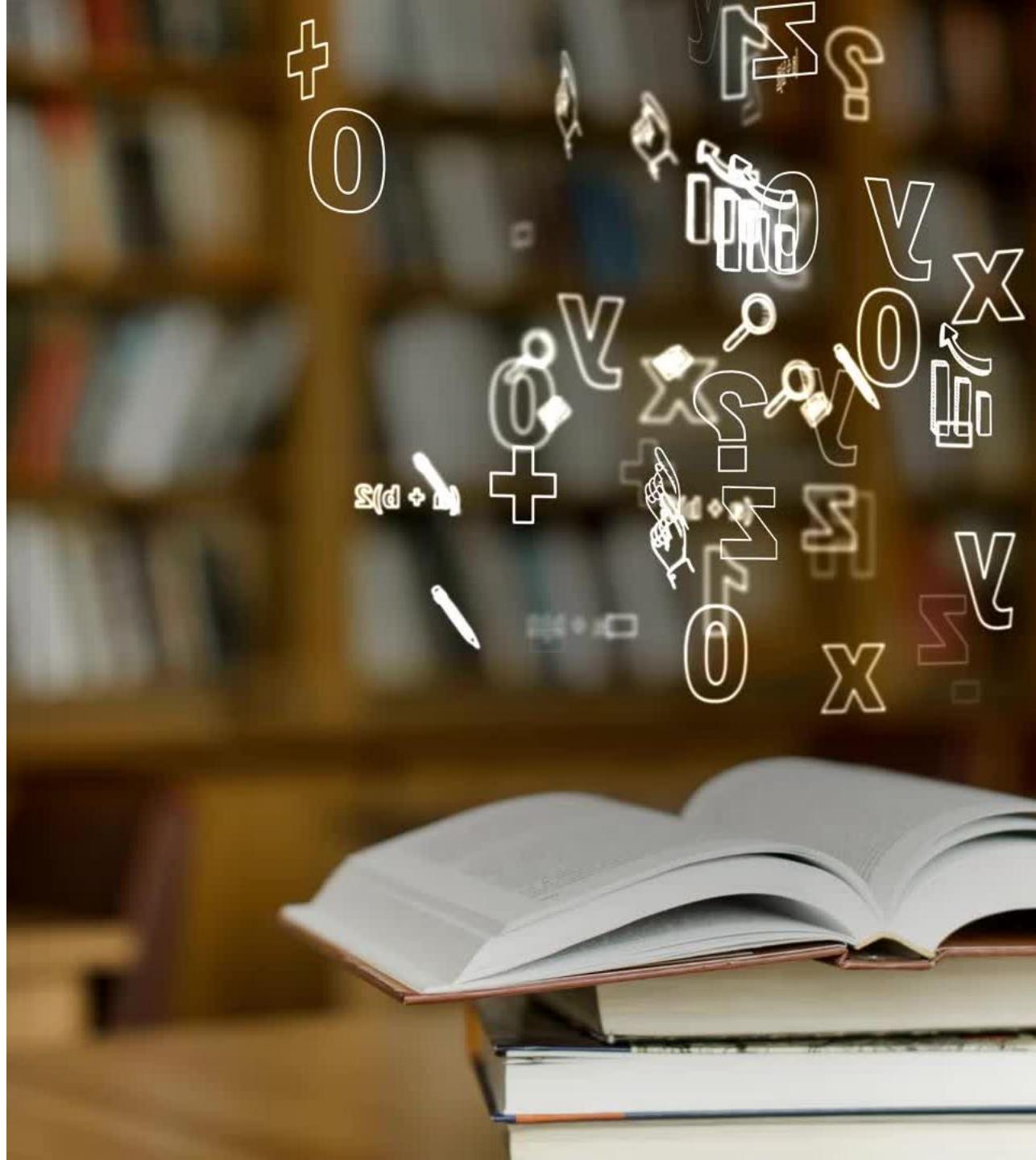
# VENTAJAS DEVOPS

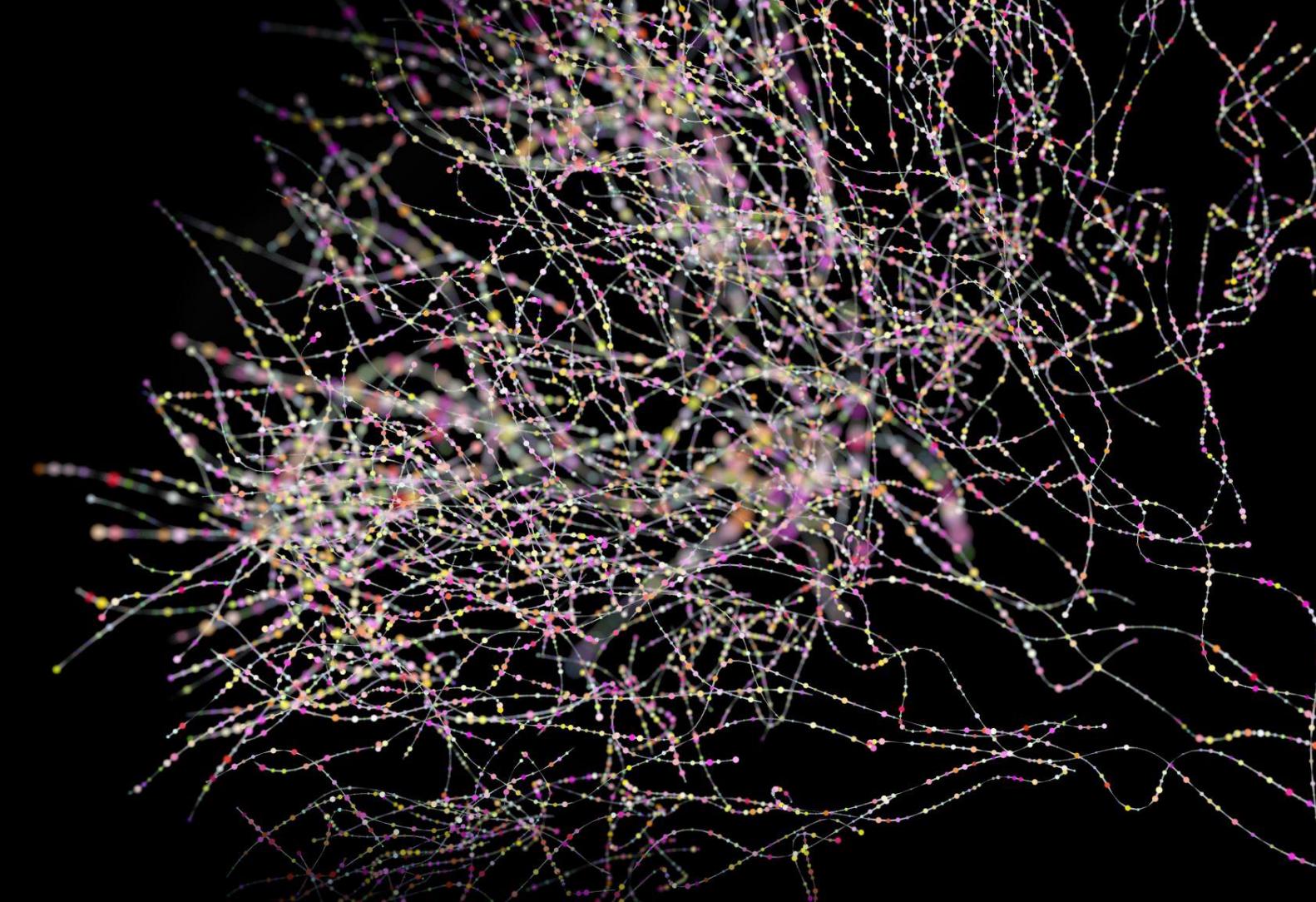
- Entrega más rápida y continua
- Mayor colaboración y transparencia
- Mayor calidad del software
- Optimización de recursos
- Mejora en la colaboración y la cultura
- Flexibilidad y adaptabilidad
- Mayor seguridad
- Retroalimentación continua y mejora continua



# PRESENTACIONES

- Conocimientos de DevOps
- Conocimientos de Bitbucket
- Conocimientos de Jenkins
- Conocimientos de Testing

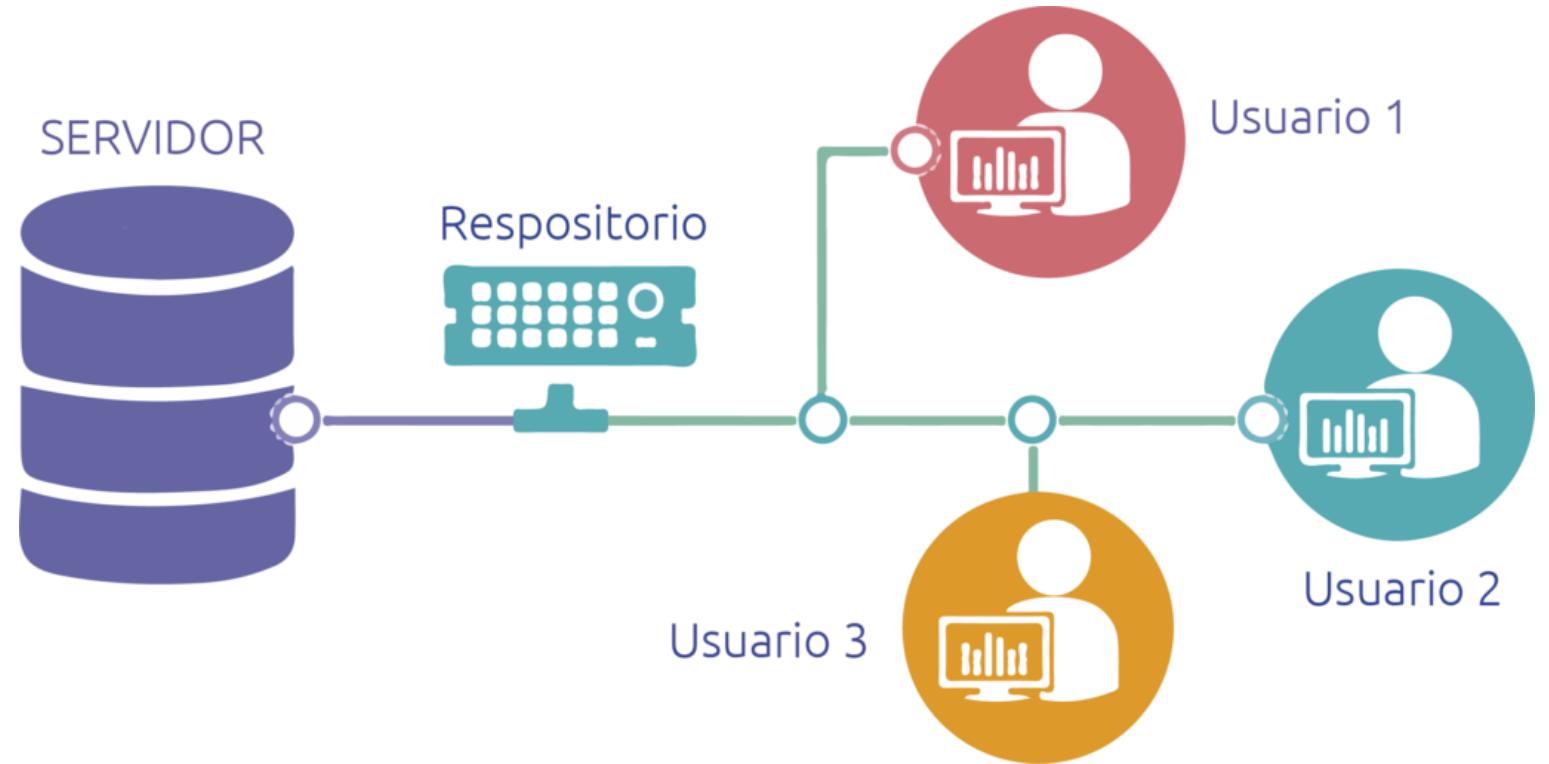


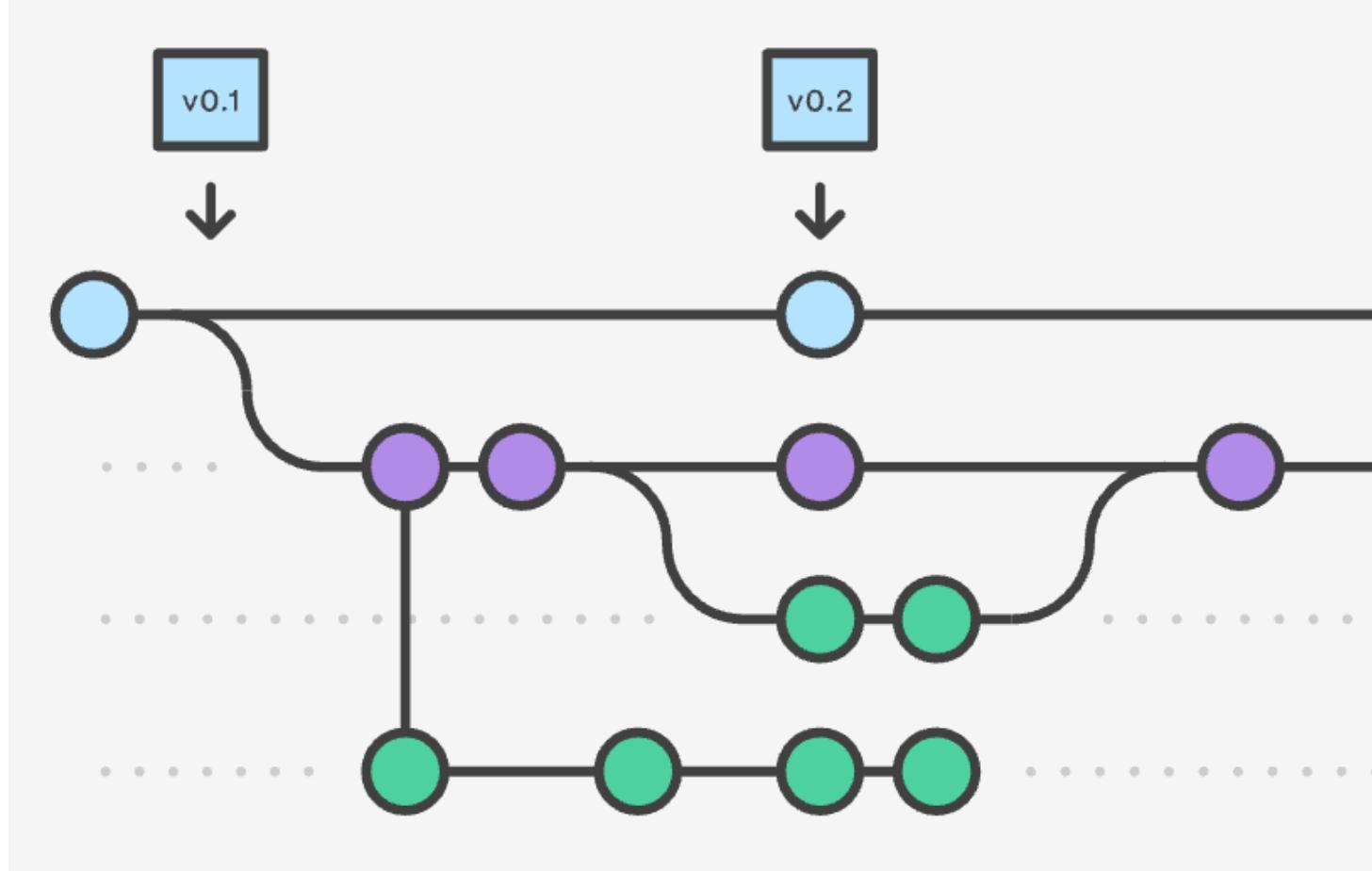


## Modulo 1: Bitbucket

- Introducción a los CVS
- Gestión de un repositorio remoto
- Ramificaciones
- GitFlow
  - Desarrollo
  - Release
  - Hotfix
- Pull Request

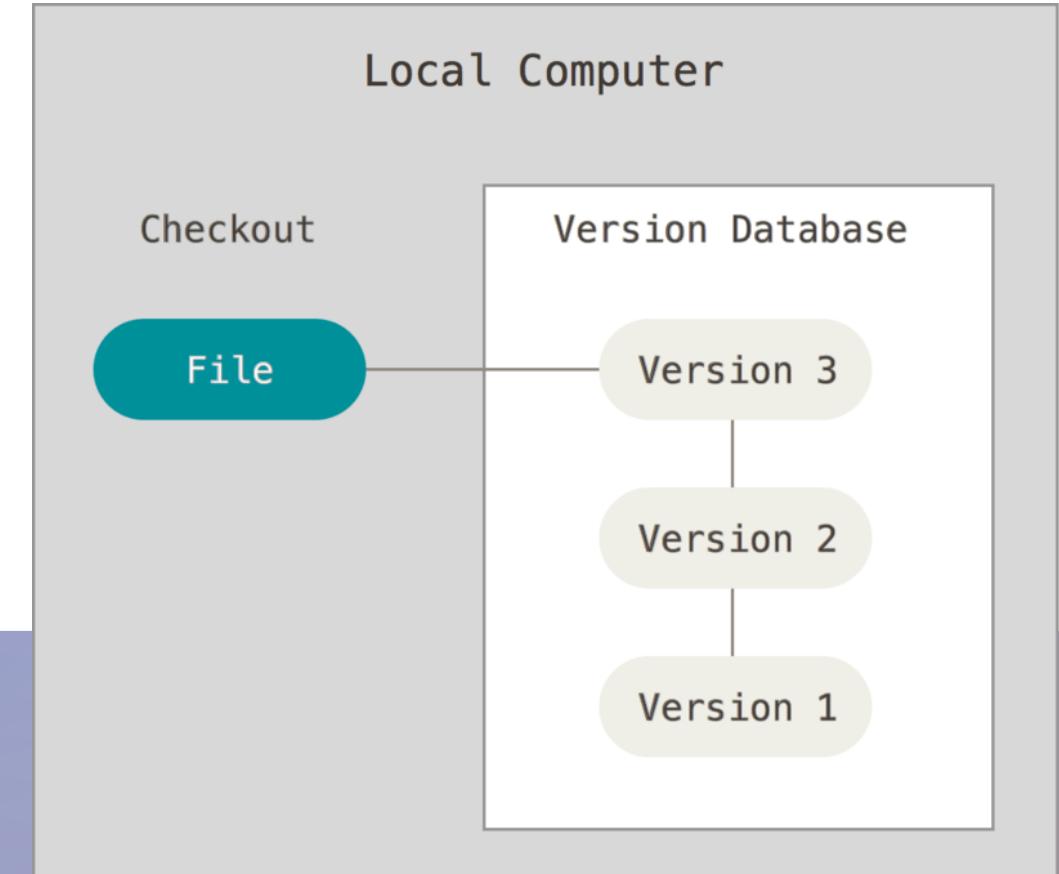
# CONTROL DE VERSIONES



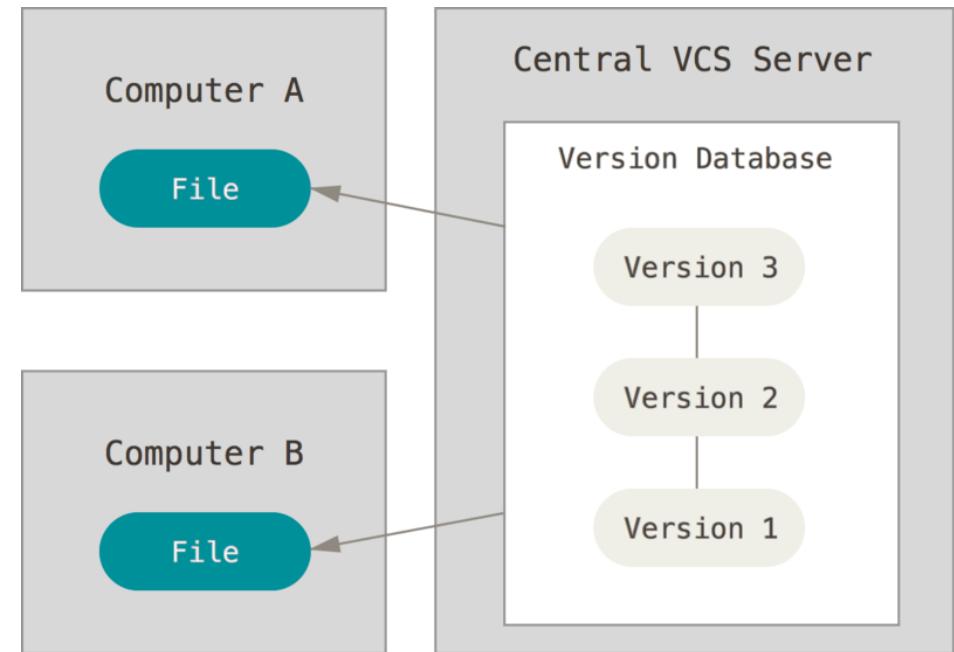


¿POR QUÉ USAR UN VCS?

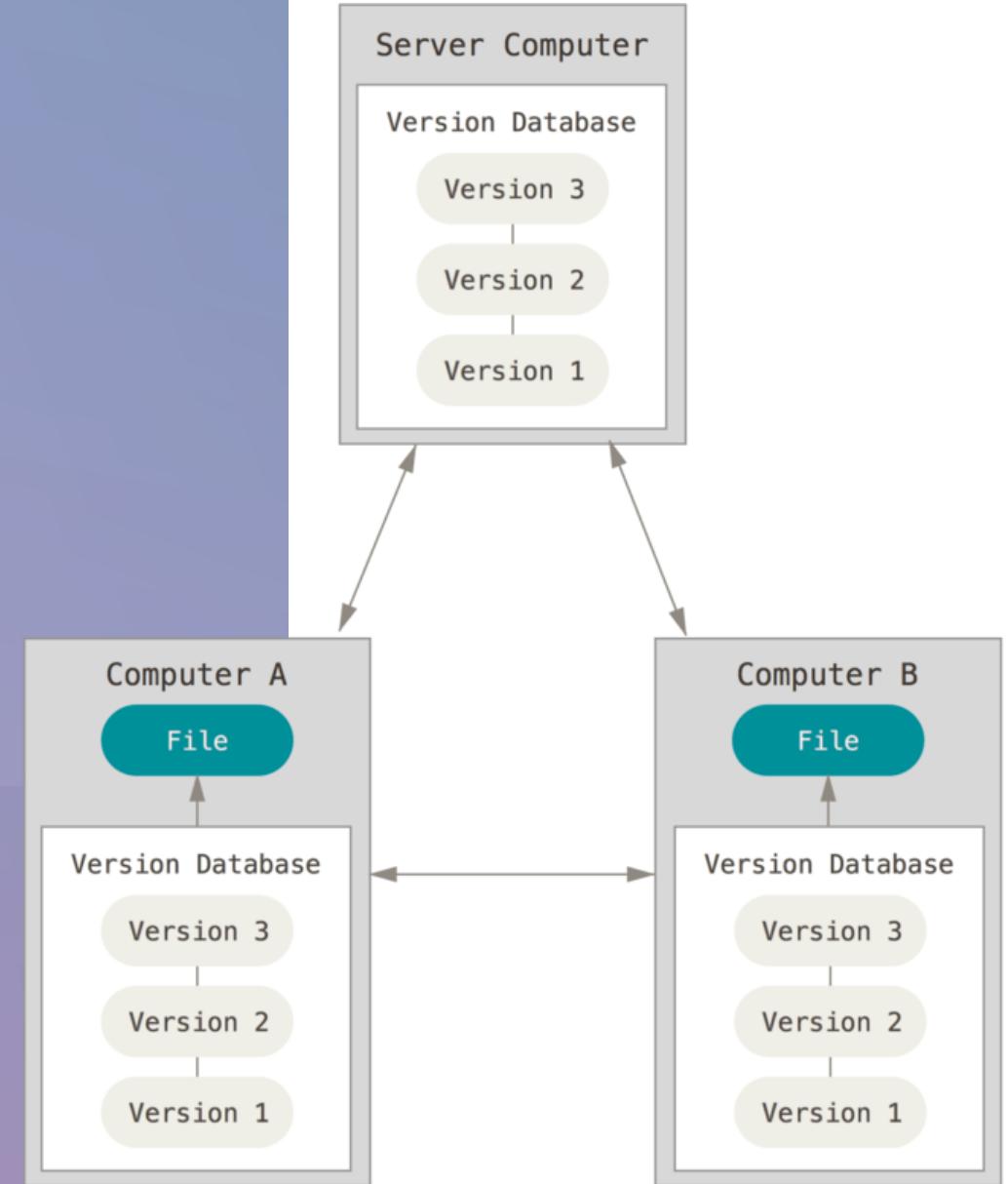
# SISTEMAS DE CONTROL DE VERSIONES LOCALES



# SISTEMAS DE CONTROL DE VERSIONES CENTRALIZADOS



# SISTEMAS DE CONTROL DE VERSIONES DISTRIBUIDOS



# HISTORIA DE GIT

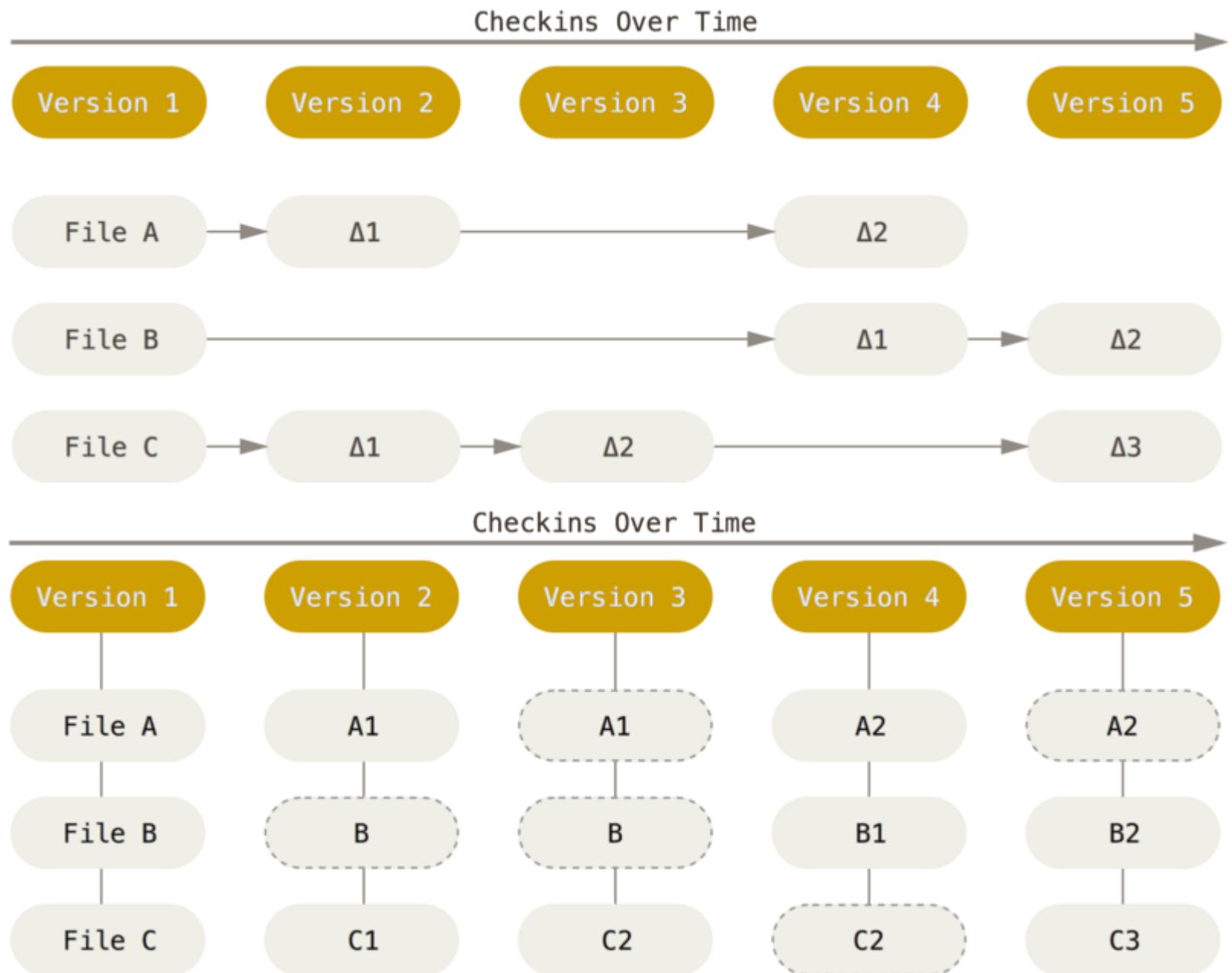


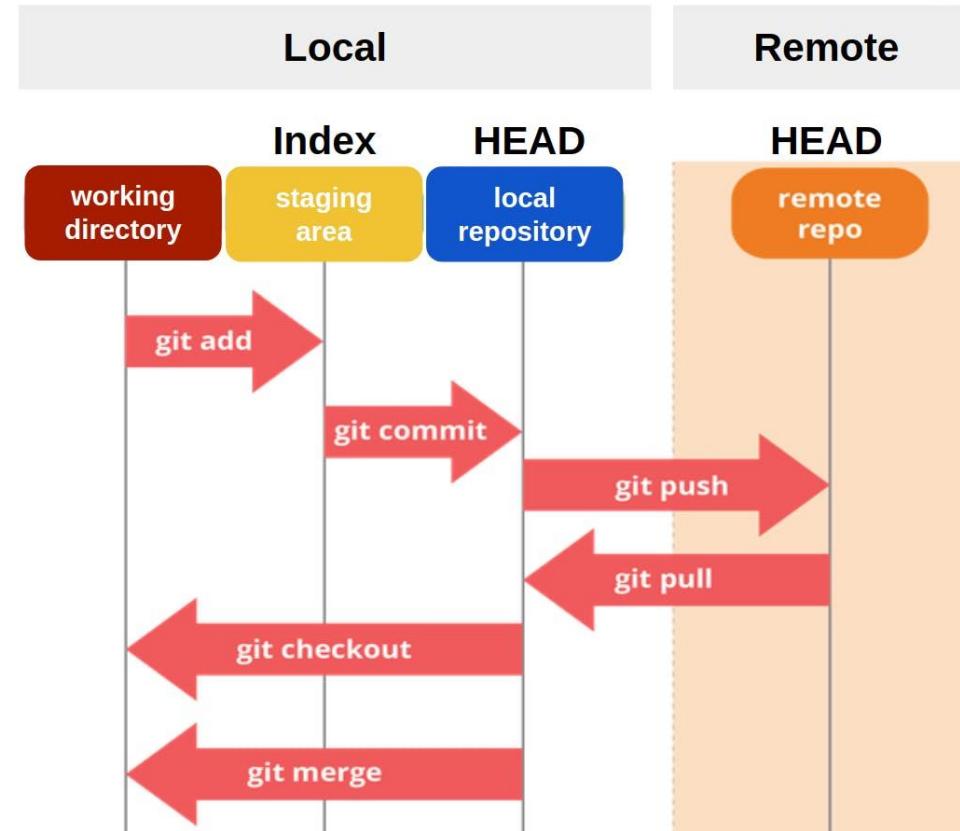


git

¿QUÉ ES GIT?

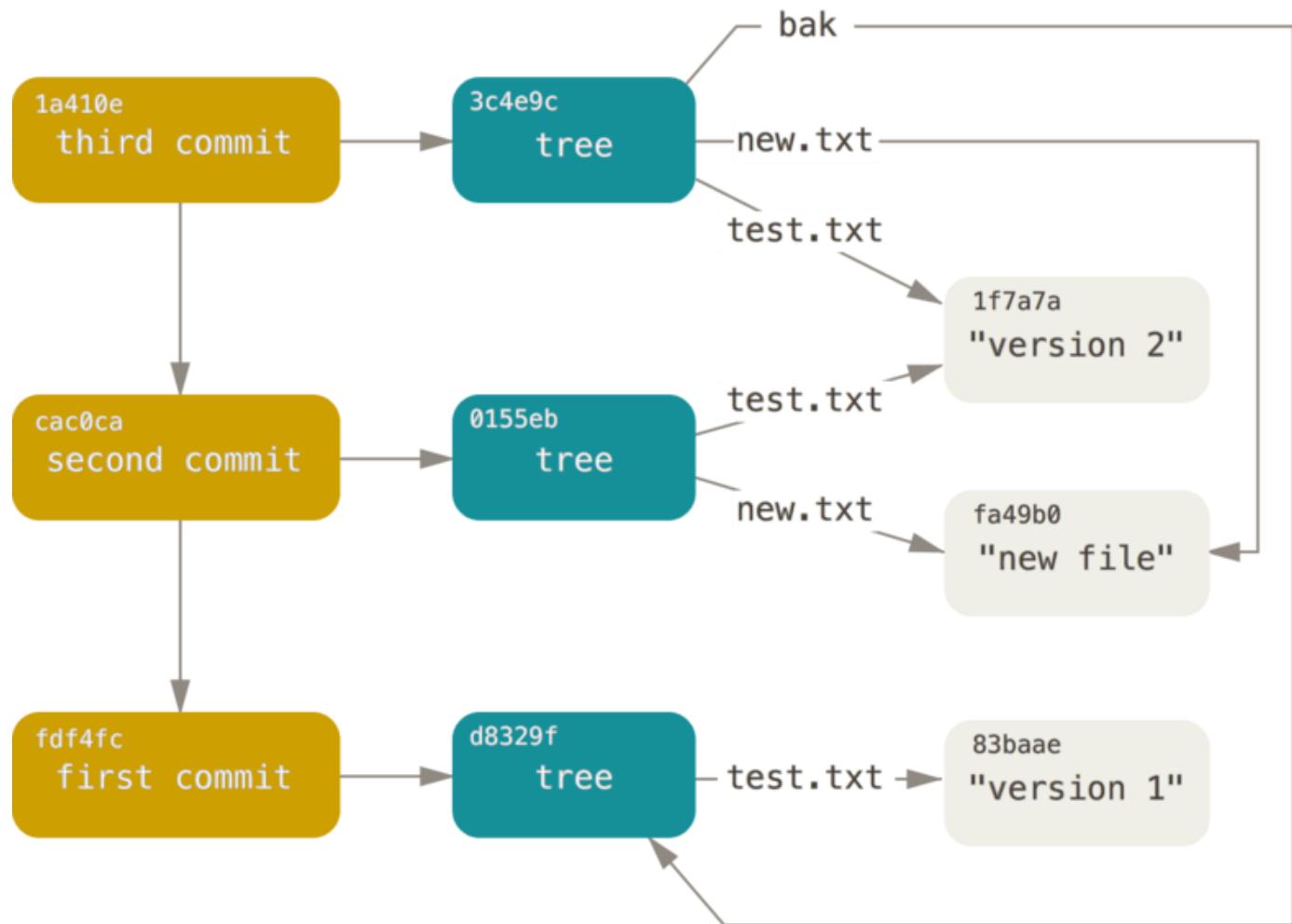
# COPIAS INSTANTÁNEAS, NO DIFERENCIAS



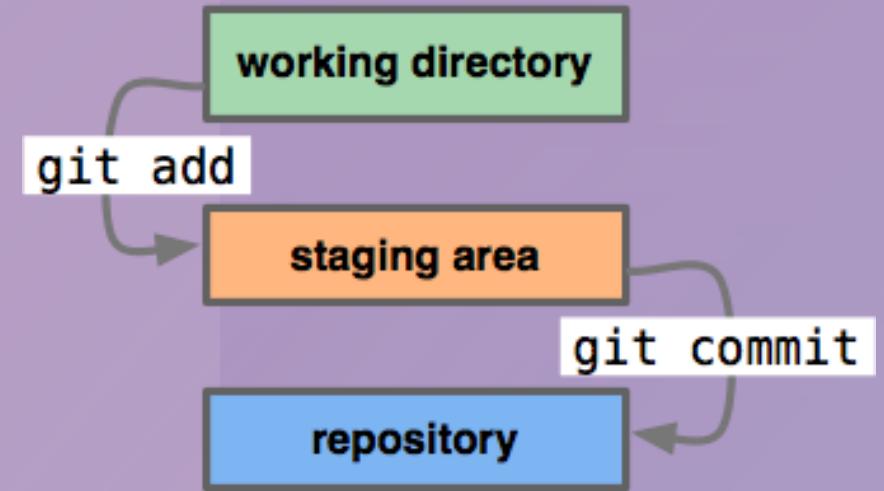


## OPERACIONES LOCALES

# INTEGRIDAD



# ESTADOS DE GIT



# LINEA DE COMANDOS

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.18363.657]
(c) 2019 Microsoft Corporation. All rights reserved.

D:\GFG>git init
Initialized empty Git repository in D:/GFG/.git/

D:\GFG>
```

# SOURCETREE

sourcetree-website (Git)

Push Branch Merge Shelve Show in Finder Terminal

All Branches Show Remote Branches Ancestor Order Jump to:

Graph	Commit	Author	Description	Date
b7358c7	Rahul Chhab...	[ master ] [ origin/master ] [ origin/HEAD ] Removing ol...	Mar 3, 2014	
bdb8bef	Rahul Chhab...	Merged in update-google-verification (pull request #14)	Feb 18, 2014	
dfe975d	Tyler Tadej...	[ origin/update-google-verification ] Update google verificati...	Feb 11, 2014	
3bc3290	Tyler Tadej...	Replace outdated Atlassian logo in footer with base-64 en...	Feb 11, 2014	
dba47f9	Tyler Tadej...	Add gitignore	Feb 11, 2014	
ff67b45	Mike Minns...	Updated Mac min-spec to 10.10	Feb 15, 2014	
72d32a8	Michael Min...	Merged in hero_images (pull request #13)	Feb 15, 2014	
246c4ff	Joel Unger...	[ origin/hero_images ] [ hero_images ] Used Tinypng to c...	Feb 11, 2014	
9d9438c	Joel Unger...	Replacing hero images with new version of SourceTree	Feb 9, 2014	
ce75b63	Michael Min...	Merged in bug/date-https (pull request #12)	Feb 15, 2014	
85367bb	Patrick Tho...	[ origin/bug/date-https ] fixed date and https errors	Jan 7, 2014	
4f9b557	Joel Unger...	New Favicon	Feb 8, 2014	
384e6d5	Rahul Chhab...	[ origin/search-console-access ] search console google ver...	Feb 3, 2014	
6fa47a9	Mike Minns...	updated to move supported version to OSX 10.9+	Dec 15, 2013	
8dd87bb	Mike Minns...	remove extra , when a line is skipped due to empty server	Nov 23, 2013	
faa195e	Mike Minns...	Skip records with empty server/user id as gas rejects them	Nov 23, 2013	
0cdfe96	Mike Minns...	corrected paths after merge	Nov 23, 2013	
051ab1b	Mike Minns...	corrected column counting	Nov 23, 2013	
a723bc2	Mike Minns...	Merge branch 'au2gex'	Nov 23, 2013	
65fd580	Mike Minns...	deal with invalid instanceids	Nov 23, 2013	
500a892	Michael Min...	Merged in au2gex (pull request #11)	Nov 23, 2013	

GITHUB



 git	 GitHub
1. It is a software	1. It is a service
2. It is installed locally on the system	2. It is hosted on Web
3. It is a command line tool	3. It provides a graphical interface
4. It is a tool to manage different versions of edits, made to files in a git repository	4. It is a space to upload a copy of the <b>Git</b> repository
5. It provides functionalities like Version Control System Source Code Management	5. It provides functionalities of Git like VCS, Source Code Management as well as adding few of its own features

## GIT VS GITHUB



Why Bitbucket ▾ Product Guide ▾ Self-Hosted Pricing

Log in

Get started

## Built for professional teams

Bitbucket is more than just Git code management. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy.

Get started for free

Or host it yourself with [Bitbucket Data Center →](#)

bugfix/123-bug remove extra padding

Approve

Merge



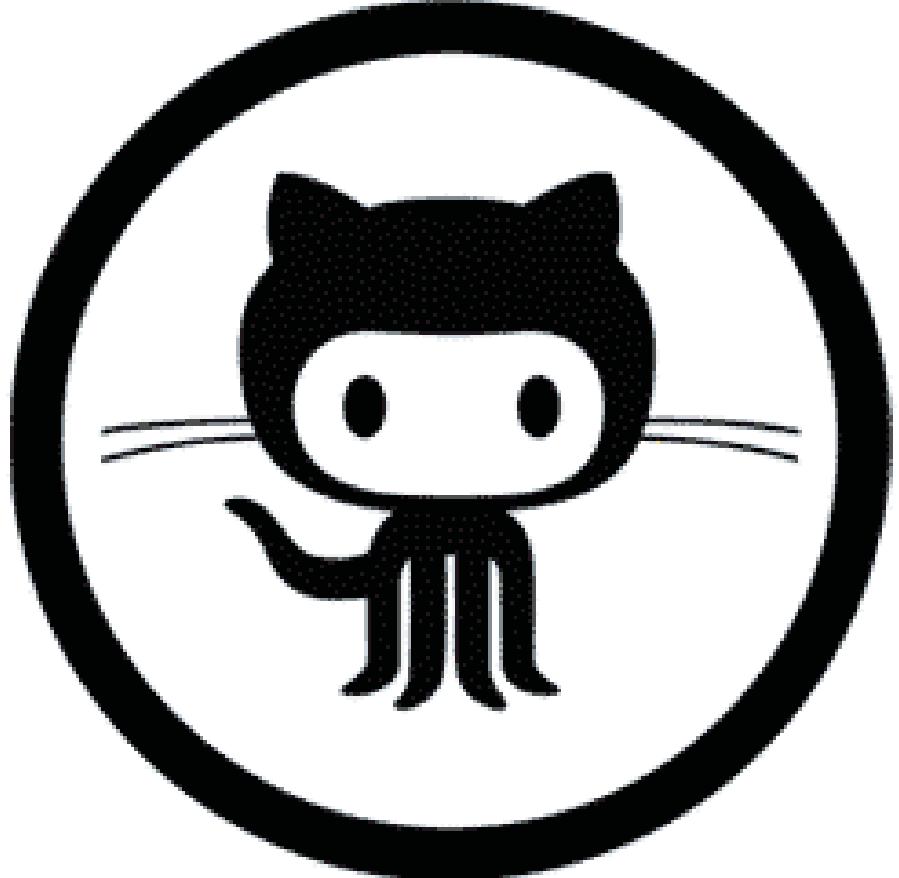
bugfix/123-bug → master OPEN

I made a few changes to tidy up the code. Please let me know if all looks good!



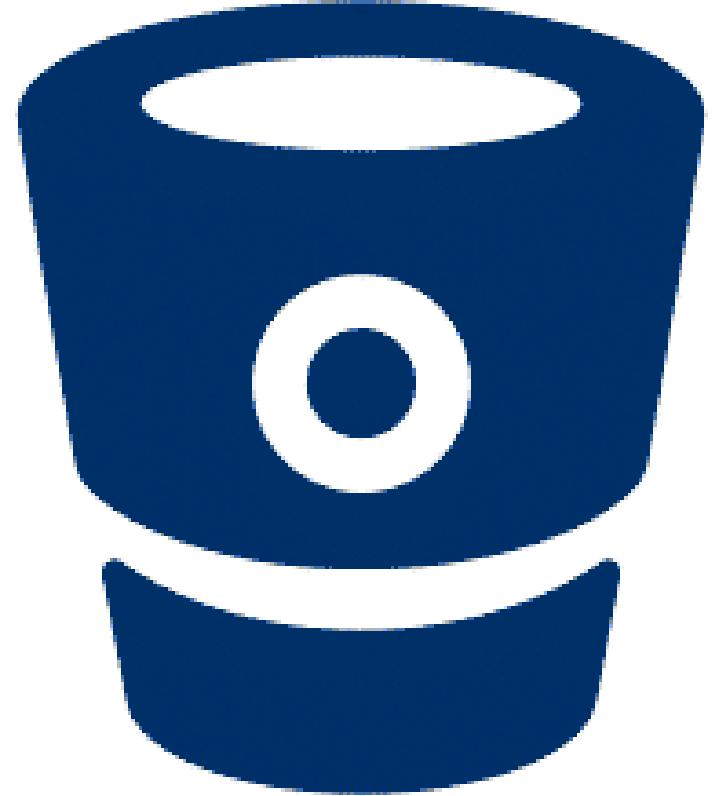
js / core.js

```
12 - // Takes an input date string and related date format
12 + // by parsing the date and converting to a string using
13 + function reconstructDateMatches(date, DateFormat) {
```



**Github**

**VS**



**Bitbucket**

The screenshot shows the Bitbucket interface for the repository "Alpha-team-app". The left sidebar includes links for Source, Commits, Branches, Pull requests, Pipelines, Deployments (which is selected), Downloads, Boards, and Settings. The main content area displays deployment status for three environments: Test, Staging, and Production. Under "Test", deployment #13 is listed with a green checkmark. Under "Staging", deployment #8 is listed with a green checkmark. Under "Production", deployment #5 is listed with a green checkmark. Below this, the "Deployment History" section shows a detailed log of previous deployments across all environments. The log includes entries for #5, #13, #12, #11, #10, #9, #8, and #3, each with its commit hash, message, environment, time ago, and a small user icon.

Deployment	Commit Hash	Message	Environment	Time Ago	User
#5	b4ce58b	NONE: use microsoft/dotnet: sdk as the recommended dotnet image	PRODUCTION	A MINUTE AGO	[User Icon]
#13	Odeeacb	BP-1148 : add tests and change dates to started on	TEST	2 MINUTES AGO	[User Icon]
#12	208e5b8	BP-749: Use definition list for size tooltip Also cleanup styled component...	TEST	2 MINUTES AGO	[User Icon]
#11	e2ee219	BP-1148 : add tests and change dates to started on	TEST	3 MINUTES AGO	[User Icon]
#10	3b65b47	add missing USER_ERROR status to repo overview widget	TEST	3 MINUTES AGO	[User Icon]
#9	017276d	feat(component): fS-1063 When searching for mentionable users in a pub...	TEST	6 MINUTES AGO	[User Icon]
#8	dd6c211	BP-535 : Remove download raw button in report view	STAGING	21 MINUTES AGO	[User Icon]
#8	dd6c211	BP-535 : Remove download raw button in report view	TEST	22 MINUTES AGO	[User Icon]
#3	856fe67	fix(build): make sure root does not change whatever import we use affect...	PRODUCTION	26 MINUTES AGO	[User Icon]

# CREAR UNA CUENTA DE BITBUCKET

## Welcome to the Git Setup Wizard

This will install Git version 2.6.3 on your computer.

It is recommended that you close all other applications before continuing.

Click Next to continue, or Cancel to exit Setup.

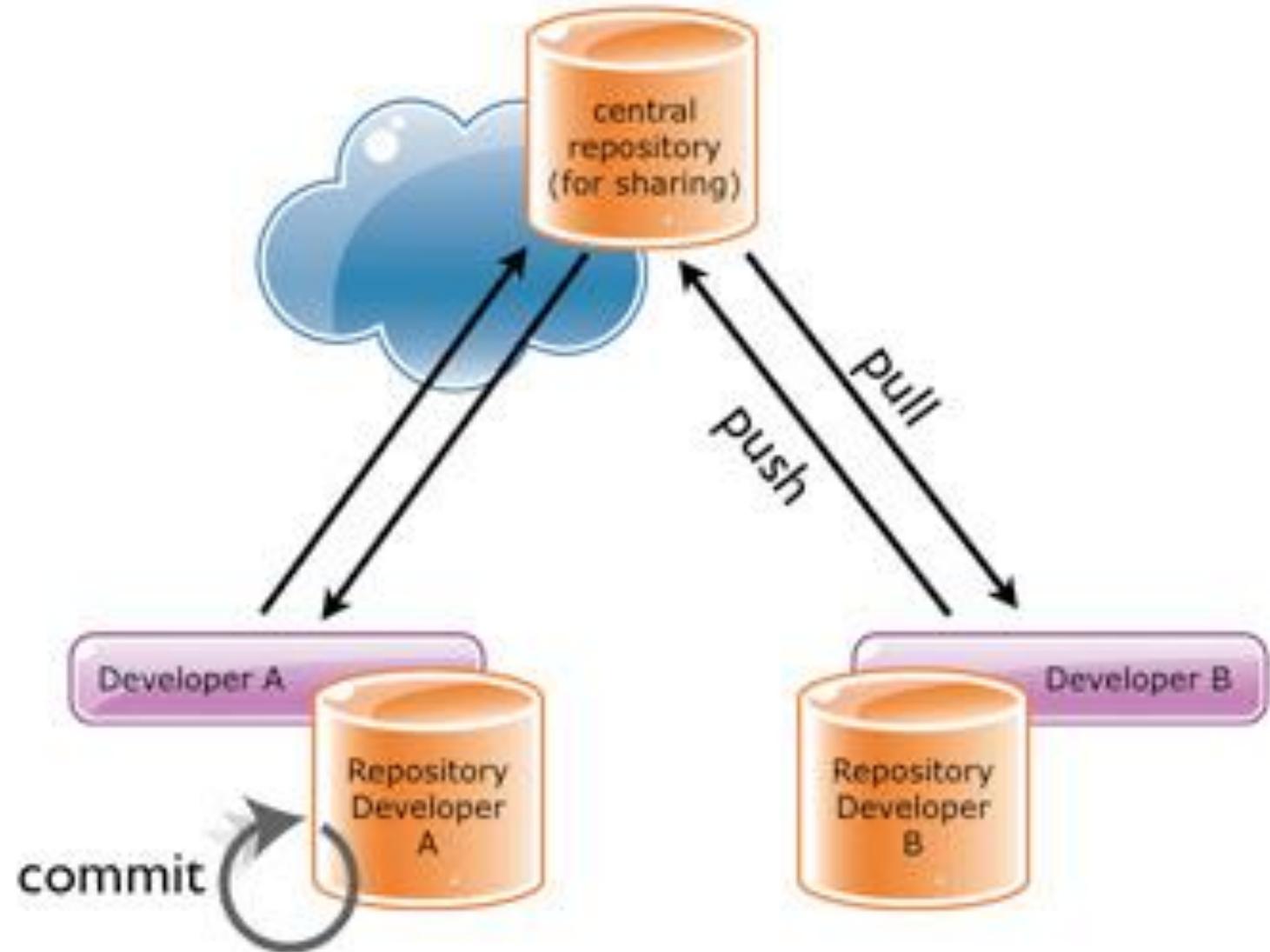


---

[Next >](#)[Cancel](#)

INSTALACIÓN DE GIT EN  
WINDOWS

# REPOSITORIO DE GIT



# Git Cheat Sheet

## Setup

Set the name and email that will be attached to your commits and tags

```
$ git config --global  
user.name "Danny Adams"  
$ git config --global  
user.email "my-  
email@gmail.com"
```

## Start a Project

Create a local repo (omit <directory> to initialise the current directory as a git repo)

```
$ git init <directory>
```

Download a remote repo

```
$ git clone <url>
```

## Make a Change

Add a file to staging

```
$ git add <file>
```

Stage all files

```
$ git add .
```

Commit all staged files to git

```
$ git commit -m "commit  
message"
```

Add all changes made to tracked files & commit

```
$ git commit -am "commit  
message"
```

## Basic Concepts

main: default development branch  
origin: default upstream repo  
HEAD: current branch  
HEAD^: parent of HEAD  
HEAD~4: great-great grandparent of HEAD

By @DoableDanny

## Branches

List all local branches. Add -r flag to show all remote branches. -a flag for all branches.

```
$ git branch
```

Create a new branch

```
$ git branch <new-branch>
```

Switch to a branch & update the working directory

```
$ git checkout <branch>
```

Create a new branch and switch to it

```
$ git checkout -b <new-branch>
```

Delete a merged branch

```
$ git branch -d <branch>
```

Delete a branch, whether merged or not

```
$ git branch -D <branch>
```

Add a tag to current commit (often used for new version releases)

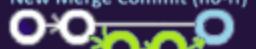
```
$ git tag <tag-name>
```

## Merging

Merge branch a into branch b. Add --no-ff option for no-fast-forward merge



New Merge Commit (no-ff)



```
$ git checkout b
```

```
$ git merge a
```

Merge & squash all commits into one new commit

```
$ git merge --squash a
```

## Rebasing

Rebase feature branch onto main (to incorporate new changes made to main). Prevents unnecessary merge commits into feature, keeping history clean



```
$ git checkout feature
```

```
$ git rebase main
```

Interatively clean up a branches commits before rebasing onto main

```
$ git rebase -i main
```

Interatively rebase the last 3 commits on current branch

```
$ git rebase -i Head~3
```

## Undoing Things

Move (&/or rename) a file & stage move

```
$ git mv <existing_path>  
<new_path>
```

Remove a file from working directory & staging area, then stage the removal

```
$ git rm <file>
```

Remove from staging area only

```
$ git rm --cached <file>
```

View a previous commit (READ only)

```
$ git checkout <commit_ID>
```

Create a new commit, reverting the changes from a specified commit

```
$ git revert <commit_ID>
```

Go back to a previous commit & delete all commits ahead of it (revert is safer). Add -hard flag to also delete workspace changes (BE VERY CAREFUL)

```
$ git reset <commit_ID>
```

## Review your Repo

List new or modified files not yet committed

```
$ git stash drop stash@{1}
```

Delete all stashes

```
$ git stash clear
```

## Synchronizing

Add a remote repo

```
$ git remote add <alias>  
<url>
```

View all remote connections. Add -v flag to view urls.

```
$ git remote  
commit1_ID  
commit2_ID
```

## Stashing

Store modified & staged changes. To include untracked files, add -u flag. For untracked & ignored files, add -a flag.

```
$ git stash
```

As above, but add a comment.

```
$ git stash save "comment"
```

Partial stash. Stash just a single file, a collection of files, or individual changes from within files

```
$ git stash -p
```

List all stashes

```
$ git stash list
```

Re-apply the stash without deleting it

```
$ git stash apply
```

Re-apply the stash at index 2, then delete it from the stash list. Omit stash@{n} to pop the most recent stash.

```
$ git stash pop stash@{2}
```

Show the diff summary of stash 1. Pass the -p flag to see the full diff.

```
$ git stash show stash@{1}
```

Delete stash at index 1. Omit stash@{n} to delete last stash made

```
$ git stash drop stash@{1}
```

Delete all stashes

```
$ git stash clear
```

## Stashing

Add a remote repo

```
$ git remote add <alias>  
<url>
```

View all remote connections. Add -v flag to view urls.

```
$ git remote  
commit1_ID  
commit2_ID
```

## Stashing

Store modified & staged changes. To include untracked files, add -u flag. For untracked & ignored files, add -a flag.

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```

Show the diff summary of stash 1. Pass the -p flag to see the full diff.

```
$ git stash show stash@{1}
```

# INICIALIZAR REPOSITORIO

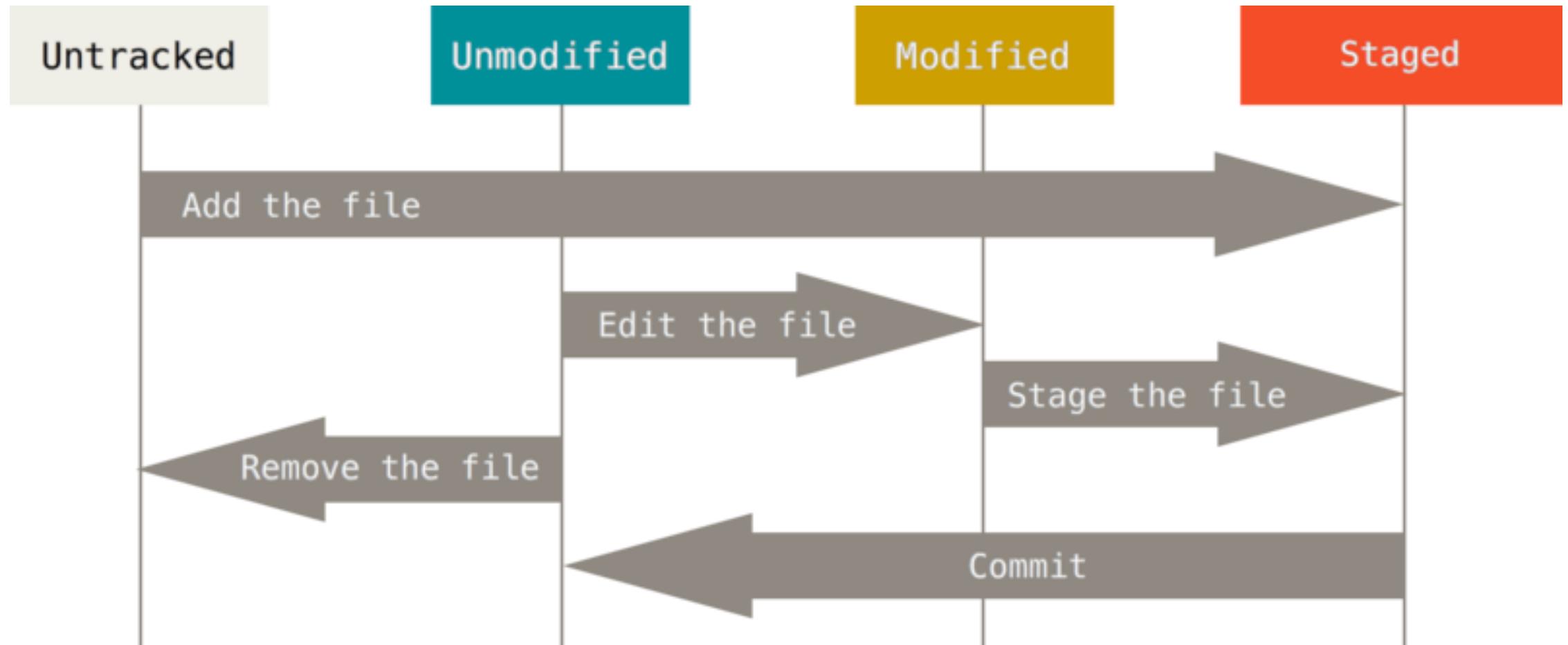
```
> git init
```

# CLONACIÓN

```
HiMaNshU@HiMaNshU-PC MINGW64 ~/Desktop (master)
$ cd "new folder"

HiMaNshU@HiMaNshU-PC MINGW64 ~/Desktop/new folder (master)
$ git clone https://github.com/IMDwivedi1/Git-Example.git
Cloning into 'Git-Example'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (6/6), done.

HiMaNshU@HiMaNshU-PC MINGW64 ~/Desktop/new folder (master)
$
```



GUARDANDO CAMBIOS EN  
EL REPOSITORIO

```
HiMaNshU@HiMaNshU-PC MINGW64 ~/Desktop/NewDirectory (master)
$ touch demofile
```

```
HiMaNshU@HiMaNshU-PC MINGW64 ~/Desktop/NewDirectory (master)
$ git status
on branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    demofile

nothing added to commit but untracked files present (use "git add" to track)
```

## G I T   S T A T U S

```
HiMaNShU@HiMaNShU-PC MINGW64 ~/Desktop/NewDirectory (master)
$ touch newfile.txt

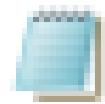
HiMaNShU@HiMaNShU-PC MINGW64 ~/Desktop/NewDirectory (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)

    newfile.txt
```

G I T A D D



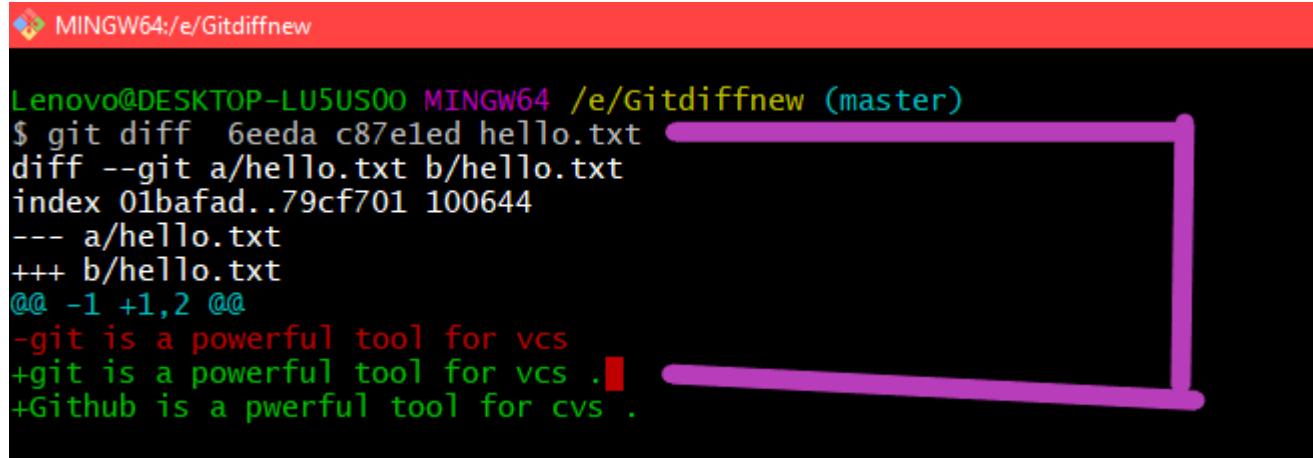
.gitignore - Notepad

File Edit Format View Help

secrets.txt

G I T   I G N O R E

# G I T   D I F F



```
MINGW64:/e/Gitdiffnew
Lenovo@DESKTOP-LU5US00 MINGW64 /e/Gitdiffnew (master)
$ git diff 6eeda c87e1ed hello.txt
diff --git a/hello.txt b/hello.txt
index 01bafad..79cf701 100644
--- a/hello.txt
+++ b/hello.txt
@@ -1 +1,2 @@
-git is a powerful tool for vcs
+git is a powerful tool for vcs .
+Github is a pwerful tool for cvs .
```

V COMMIT\_EDITMSG + (e:\xampp\htdocs\codeigniter\git) - VIM

```
# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
# On branch master
# Changes to be committed:
#   (use "git reset HEAD <file>..." to unstage)
#
#       modified:   application/config/dx_auth.php
#       deleted:    application/controllers/auth.php
#       deleted:    application/controllers/backend.php
#       modified:   application/libraries/DX_Auth_Event.php
#       deleted:    application/models/dx_auth/login_attempts.php
#       deleted:    application/models/dx_auth/permissions.php
#       deleted:    application/models/dx_auth/roles.php
#       deleted:    application/models/dx_auth/user_autologin.php
#       deleted:    application/models/dx_auth/user_profile.php
#       deleted:    application/models/dx_auth/user_temp.php
#       deleted:    application/models/dx_auth/users.php
```

G I T C O M M I T

# O P C I O N E S

Confirma la instantánea preparada

```
git commit
```

Confirma una instantánea de todos los cambios del directorio de trabajo.

```
git commit -a
```

Si se usa la opción **-m**, se omitirá la solicitud de editor de texto a favor de un mensaje insertado.

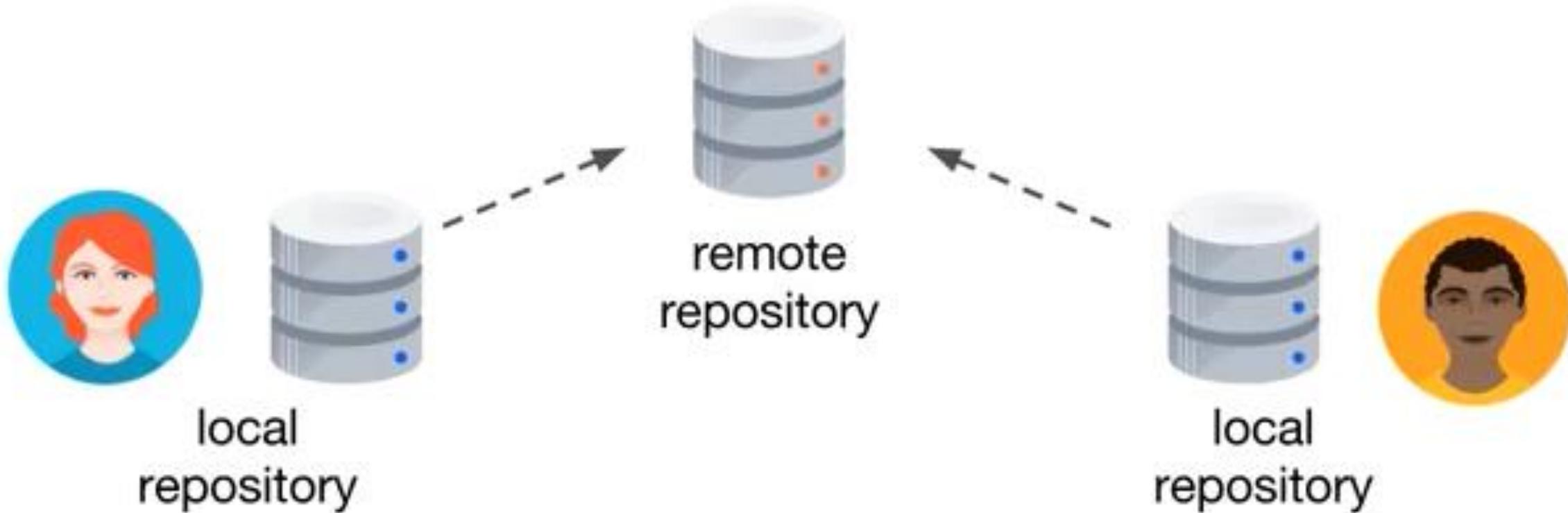
```
git commit -m "commit message"
```

Esta combinación crea inmediatamente una confirmación de todos los cambios preparados y aplica un mensaje de confirmación insertado.

```
git commit -am "commit message"
```

Al pasar esta opción, se modificará la última confirmación. En vez de crear una nueva confirmación, los cambios preparados se añadirán a la confirmación anterior

```
git commit --amend
```



REPOSITORIOS REMOTOS

```
$ cd grit
$ git remote -v
bakkdoor  https://github.com/bakkdoor/grit (fetch)
bakkdoor  https://github.com/bakkdoor/grit (push)
cho45     https://github.com/cho45/grit (fetch)
cho45     https://github.com/cho45/grit (push)
defunkt   https://github.com/defunkt/grit (fetch)
defunkt   https://github.com/defunkt/grit (push)
koke      git://github.com/koke/grit.git (fetch)
koke      git://github.com/koke/grit.git (push)
origin    git@github.com:mojombo/grit.git (fetch)
origin    git@github.com:mojombo/grit.git (push)
```

## G I T   R E M O T E

```
Welcome@Welcome-PC MINGW64 /e/git-demos/pull-tst (master)
$ git remote add my_bootstrap https://github.com/git-test-jaz/bootstrap.git
```

```
Welcome@Welcome-PC MINGW64 /e/git-demos/pull-tst (master)
$ git remote -v
my_bootstrap    https://github.com/git-test-jaz/bootstrap.git (fetch)
my_bootstrap    https://github.com/git-test-jaz/bootstrap.git (push)
origin          https://github.com/git-test-jaz/tst-pull-2.git (fetch)
origin          https://github.com/git-test-jaz/tst-pull-2.git (push)
```

```
Welcome@Welcome-PC MINGW64 /e/git-demos/pull-tst (master)
$
```

## G I T   R E M O T E   A D D

```
$ git remote show origin
* remote origin
  Fetch URL: https://github.com/schacon/ticgit
  Push URL: https://github.com/schacon/ticgit
  HEAD branch: master
  Remote branches:
    master                  tracked
    dev-branch              tracked
  Local branch configured for 'git pull':
    master merges with remote master
  Local ref configured for 'git push':
    master pushes to master (up to date)
```

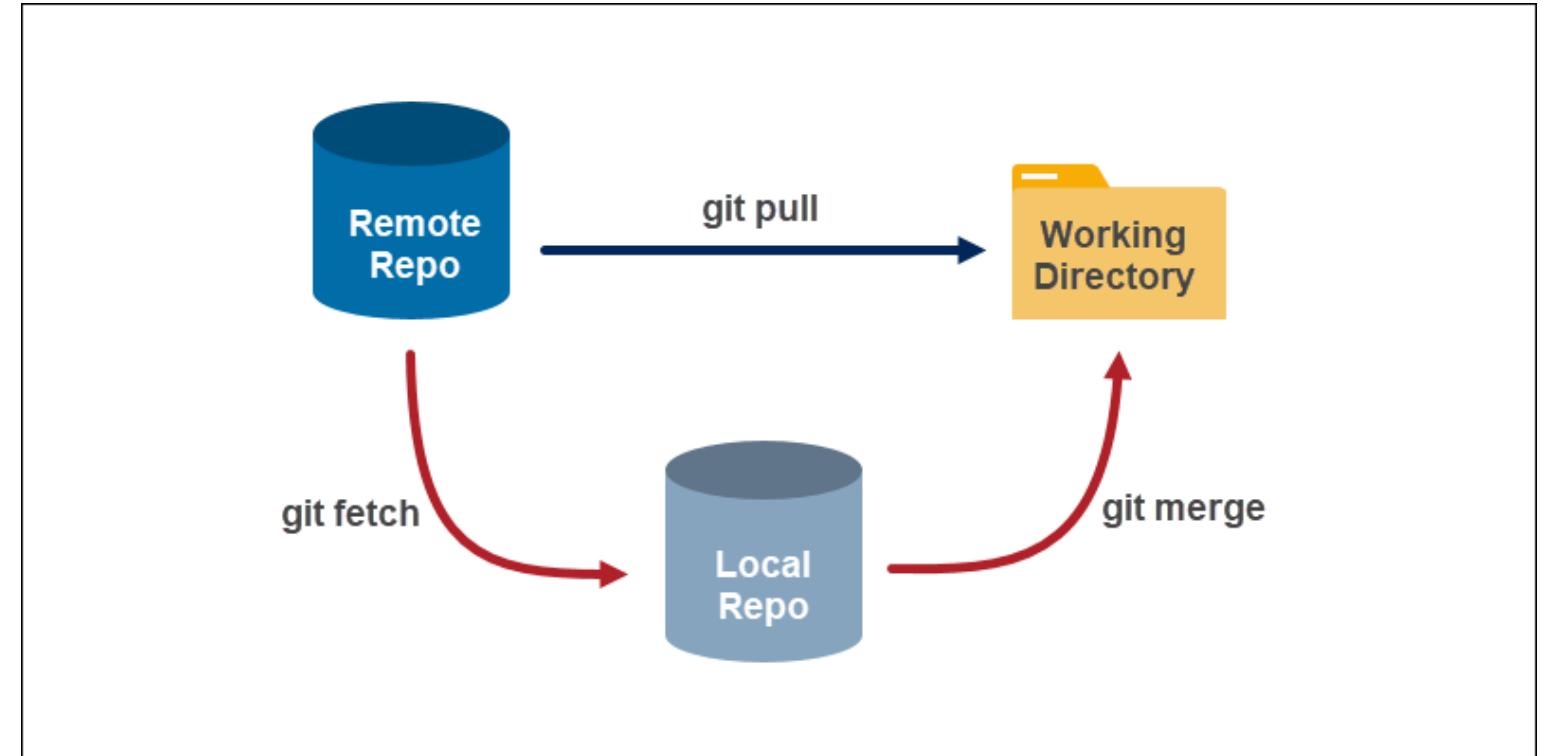
## G I T   R E M O T E   S H O W

# MODIFICACIONES SOBRE CONEXIÓN

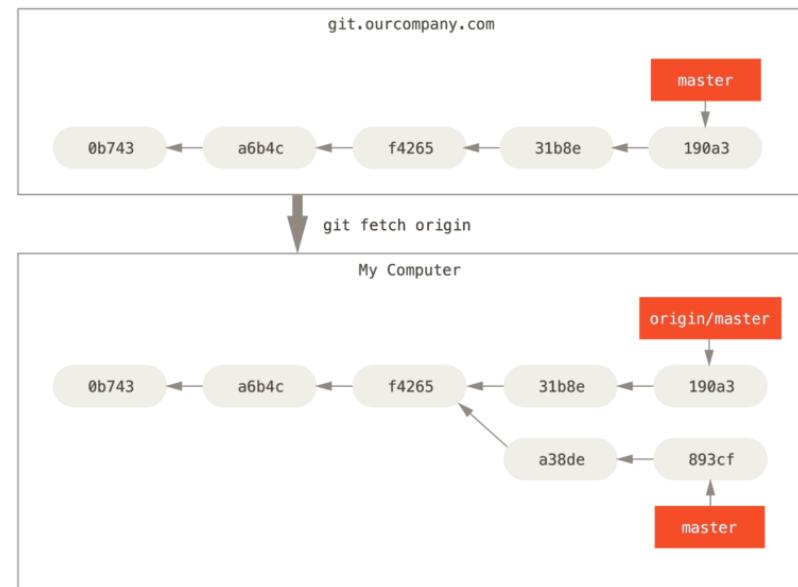
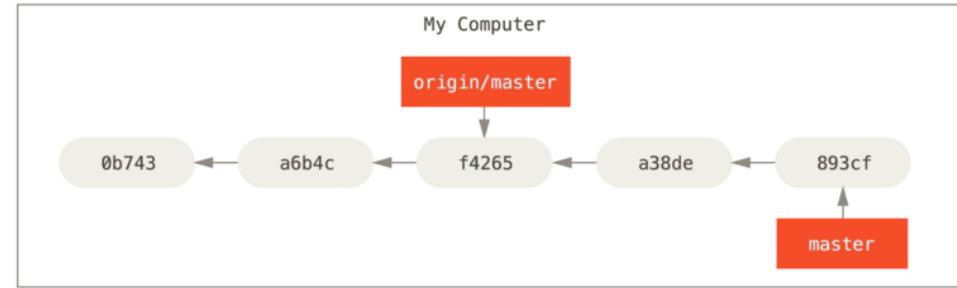
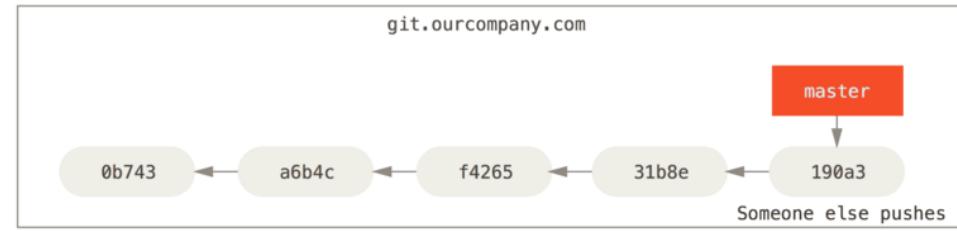
```
git remote rm <name>
```

```
git remote rename <old-name> <new-name>
```

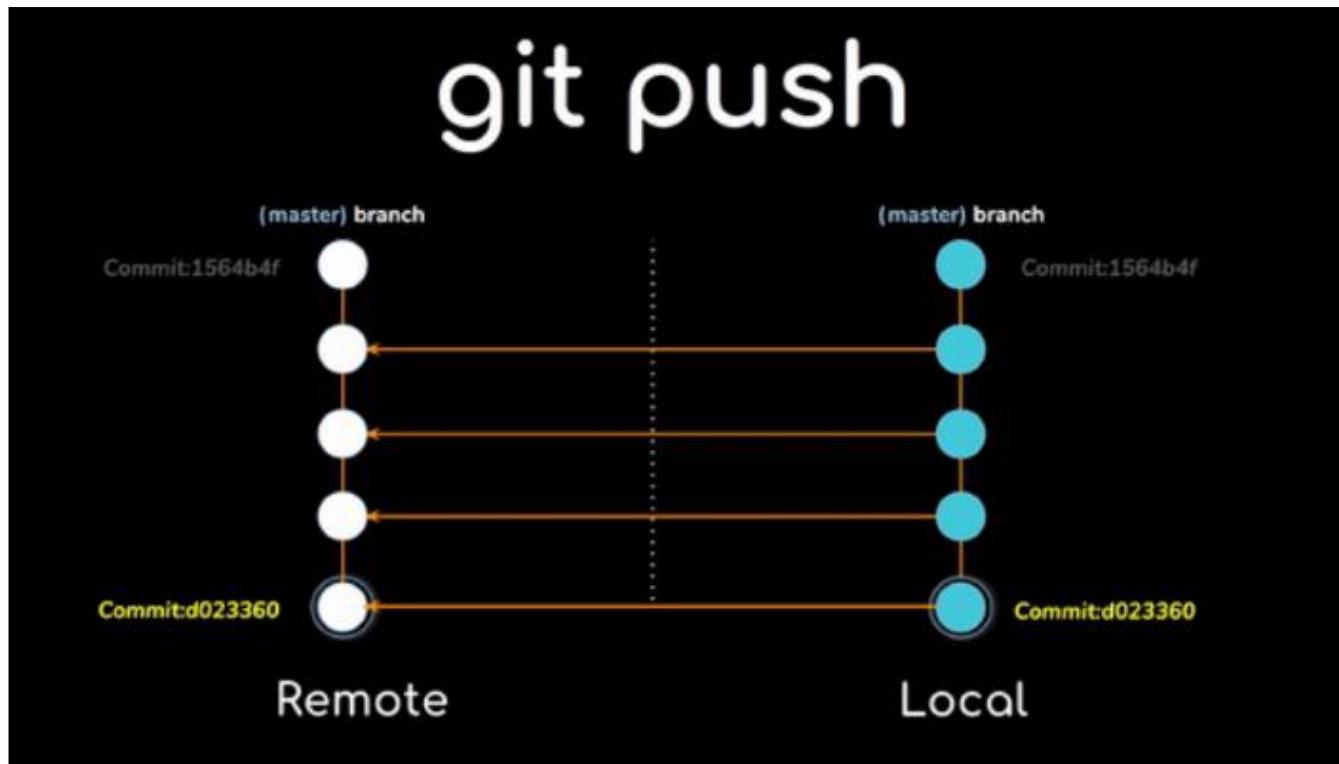
# GIT F E T C H



# GIT FETCH

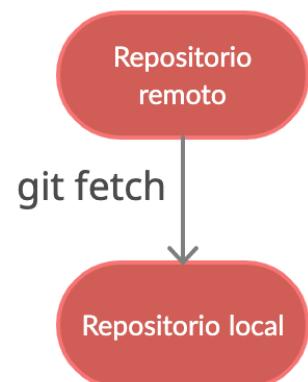


# G I T P U S H



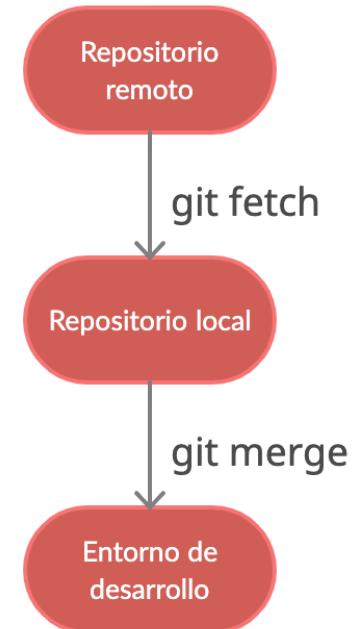
# G I T P U L L

git fetch



Entorno de desarrollo

git pull

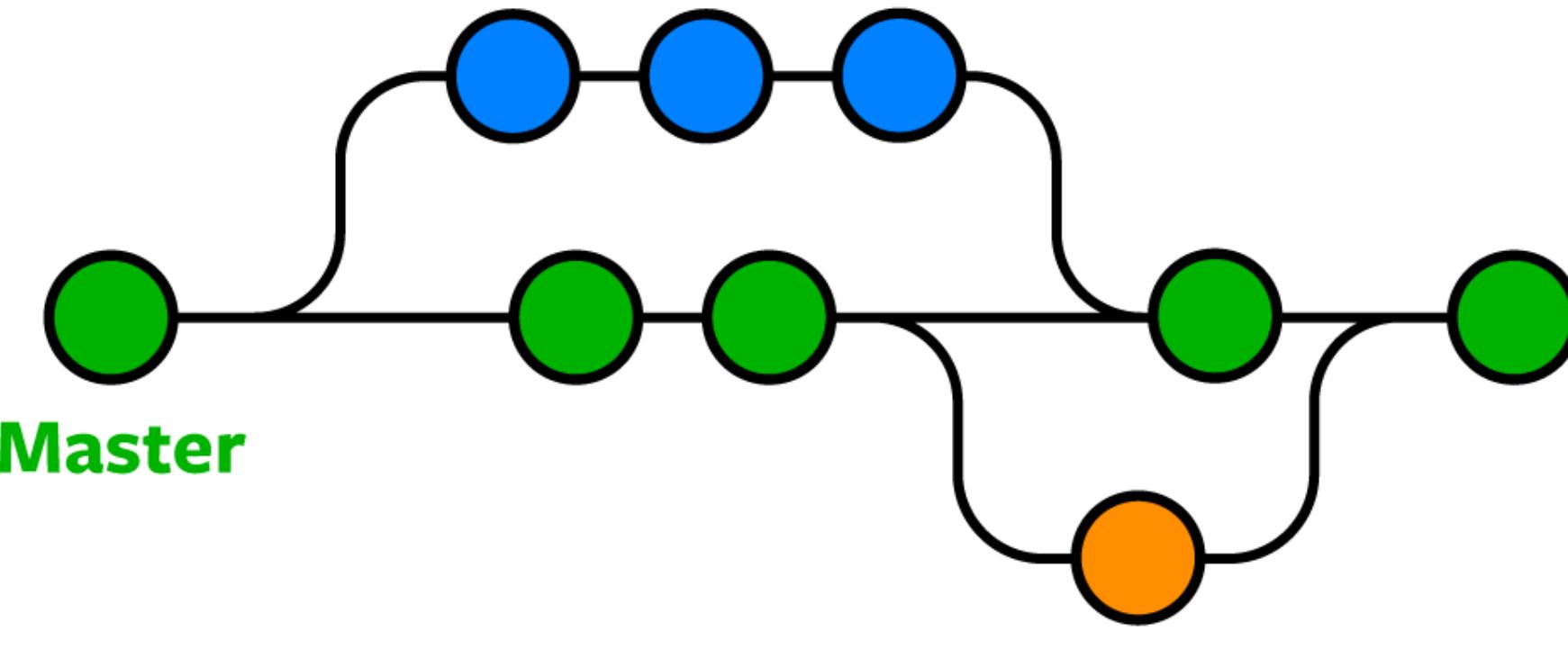


# ELIMINAR RAMAS REMOTAS

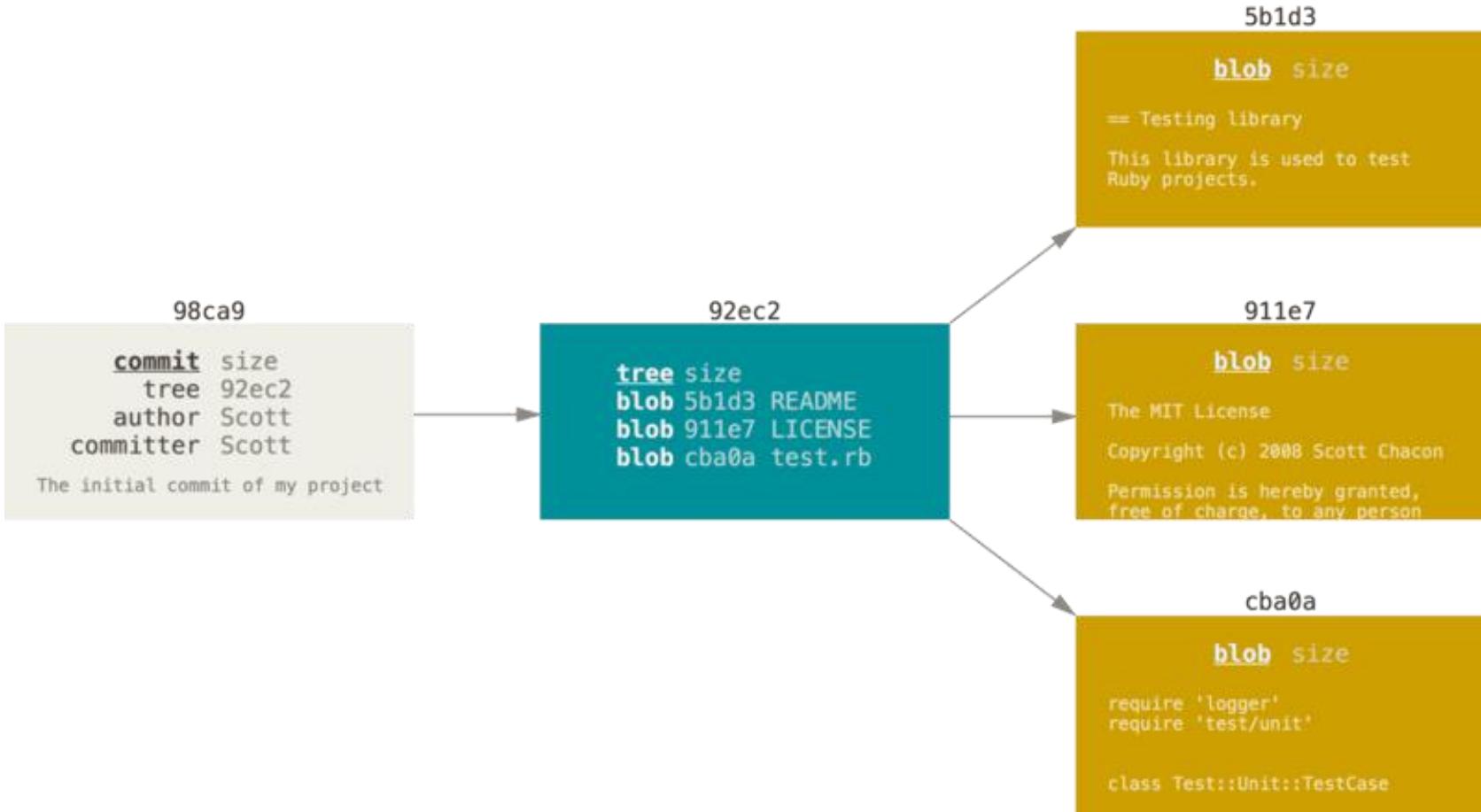
```
git push origin --delete fix/authentication
```



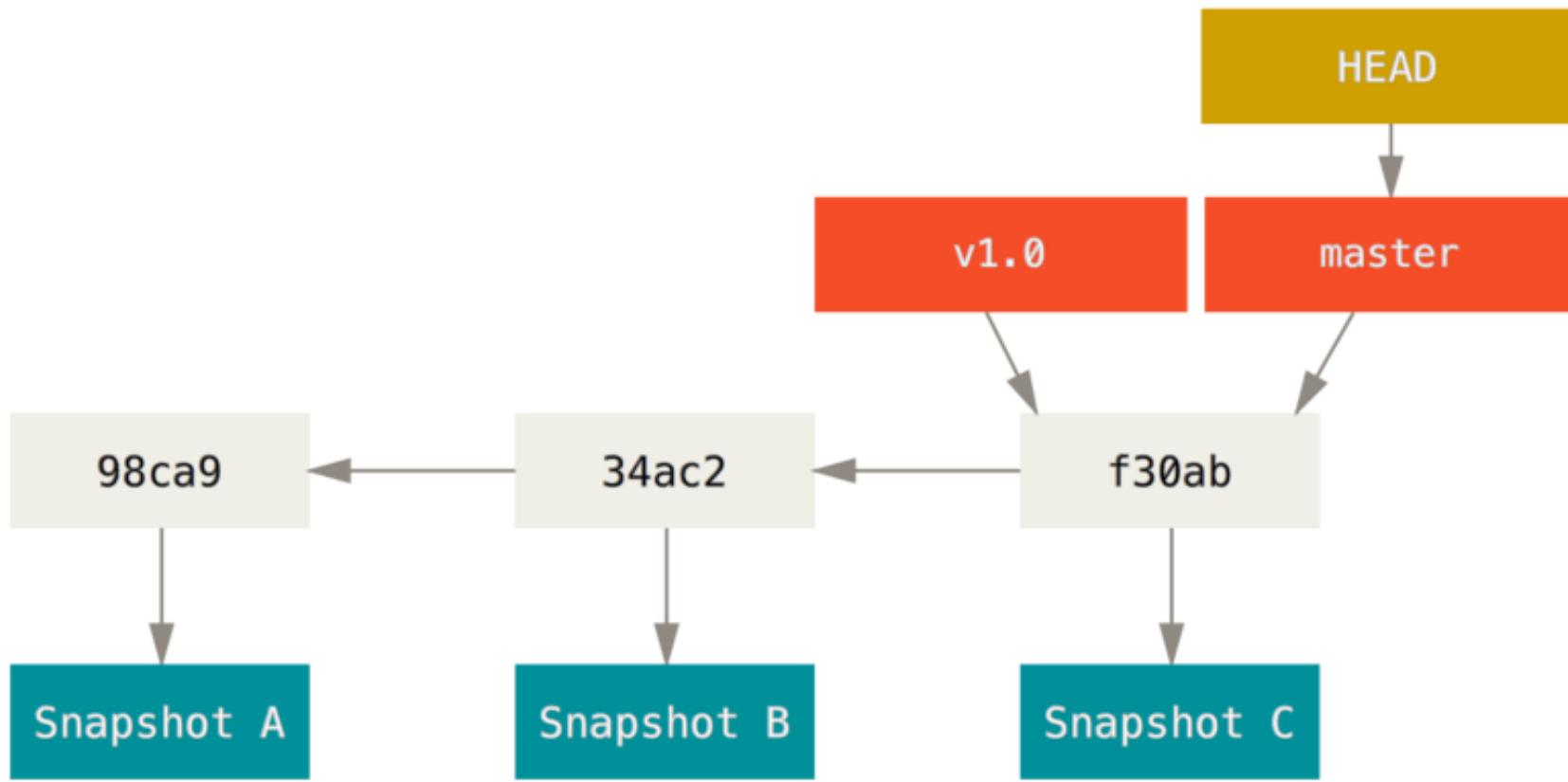
**Your Work**



**RAMIFICACIONES**

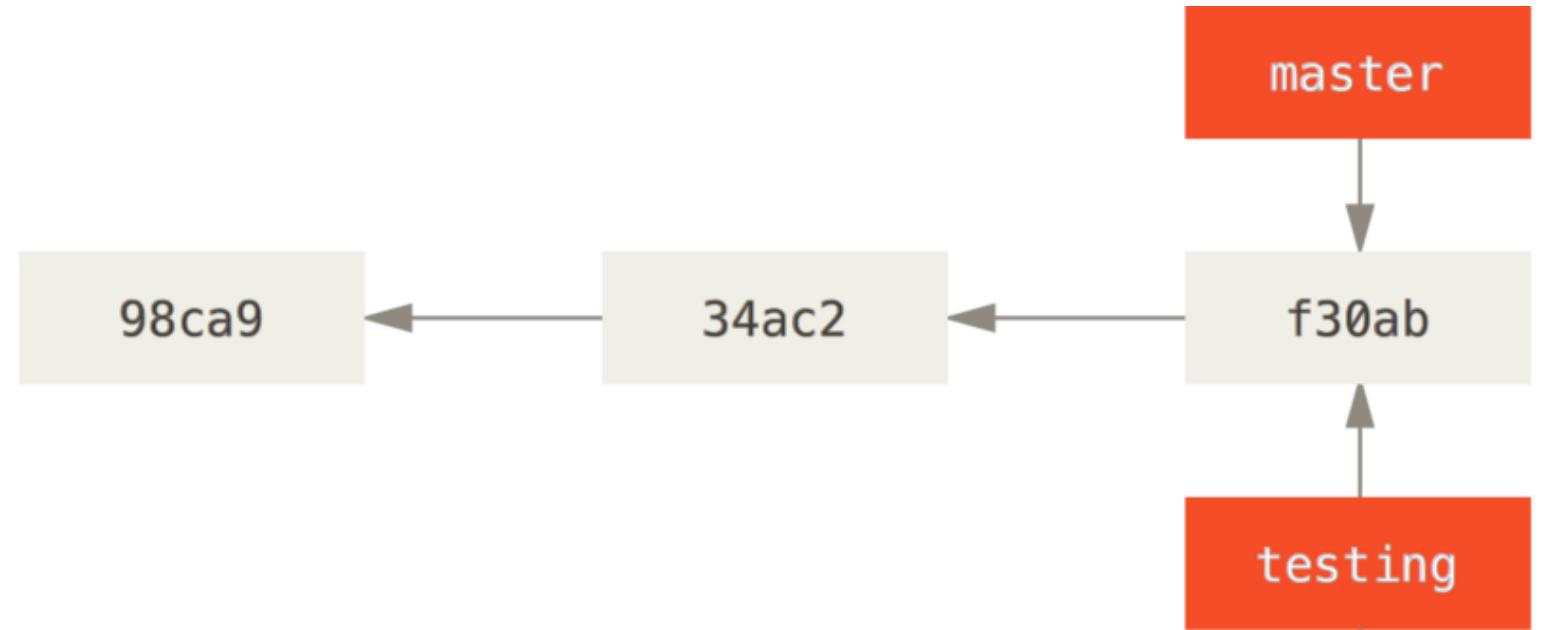


# ¿QUE ES UNA RAMA?

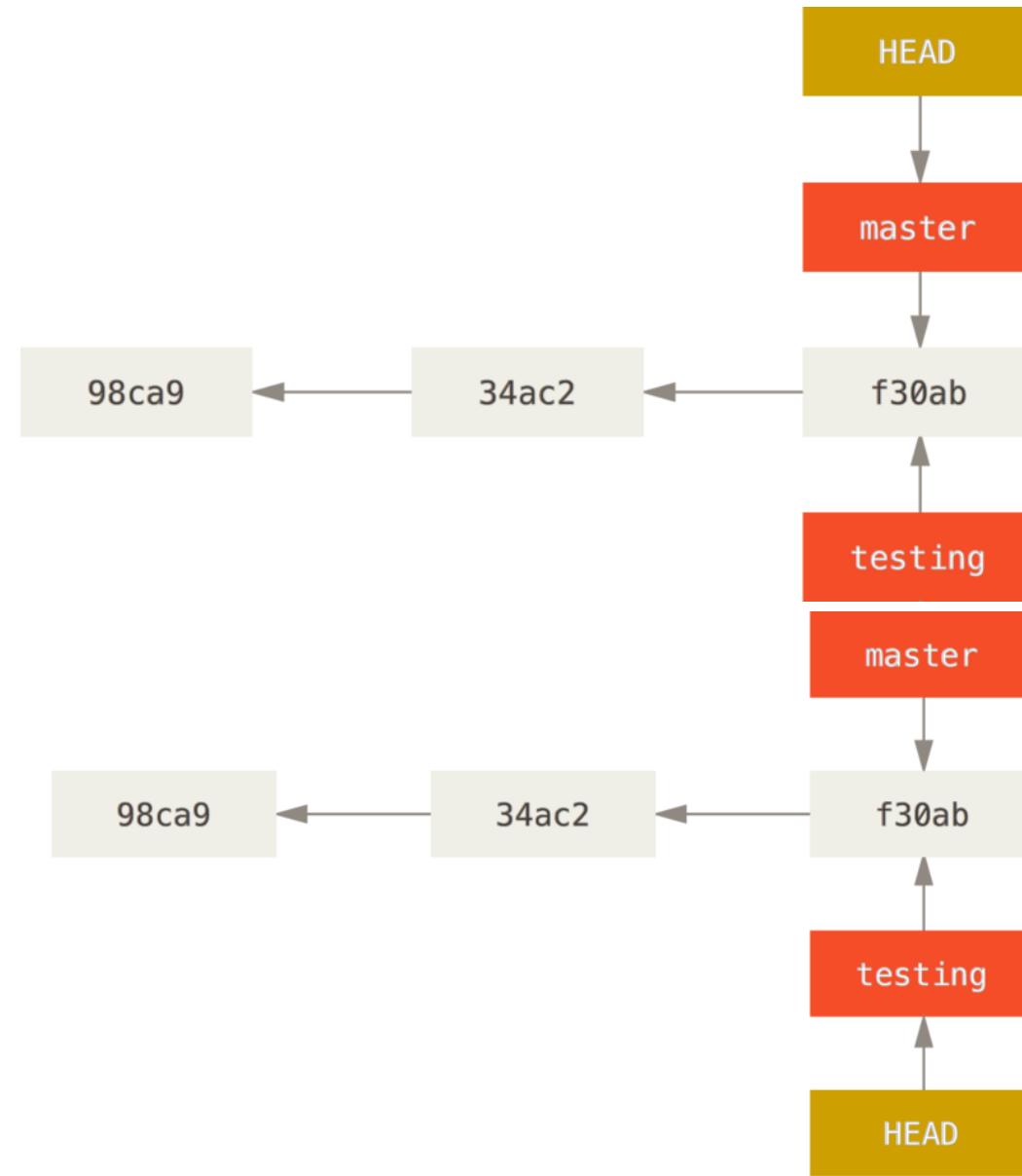


A P U N T A D O R M O V I L

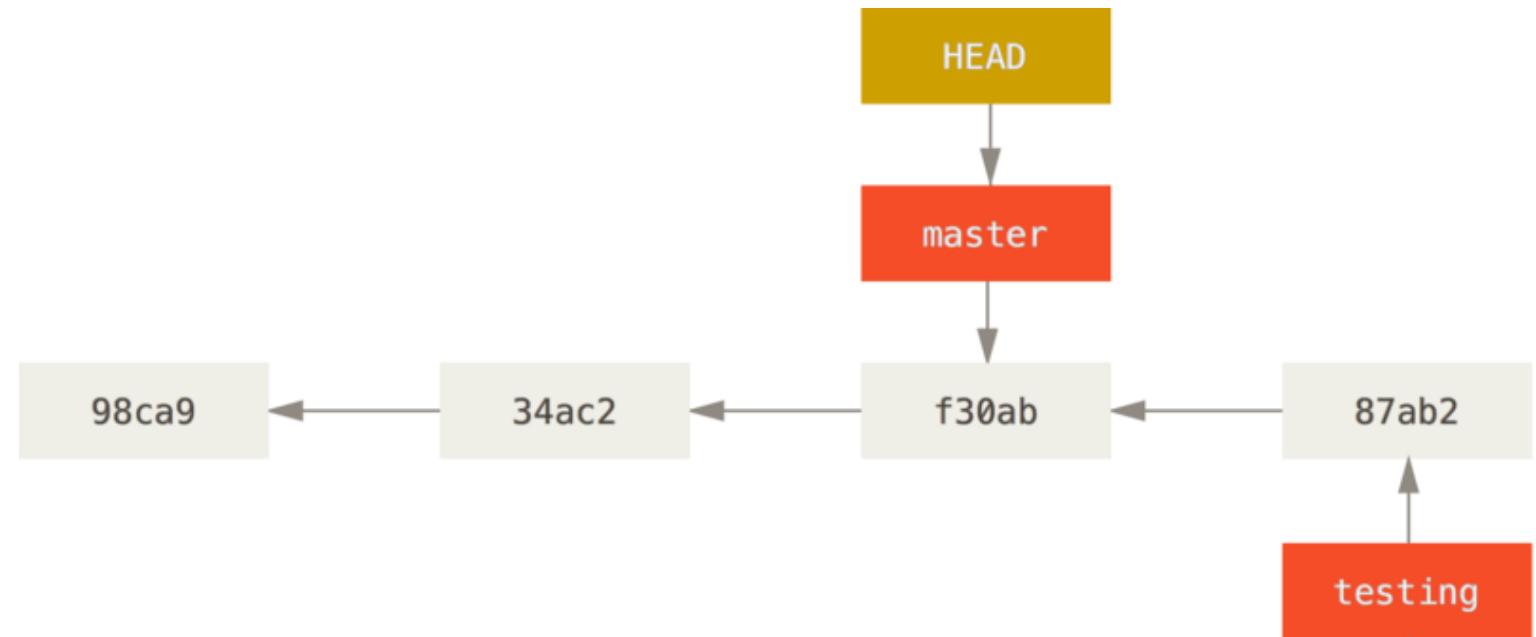
# NUEVAS RAMAS



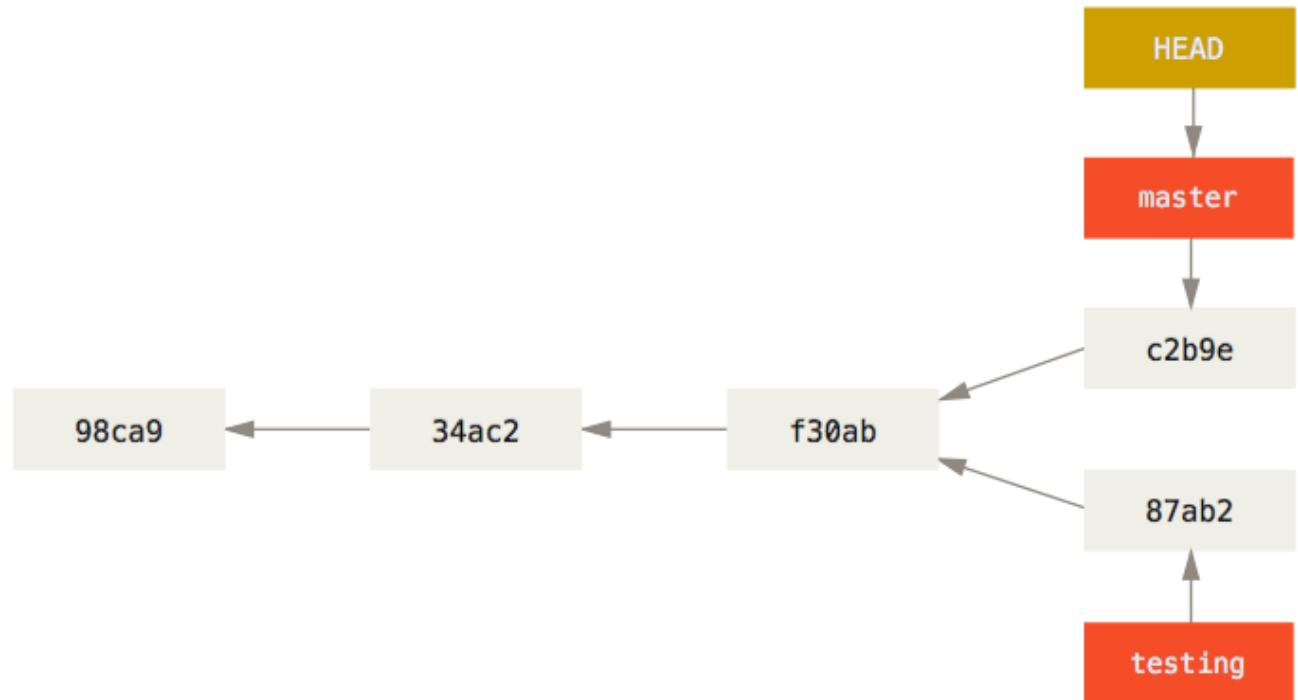
# MOVERNOS DE UNA RAMA A OTRA



# MOVERNOS DE UNA RAMA A OTRA



¿QUE NOS  
QUEDA  
FINALMENTE?



# E J E M P L O

Trabajas en un sitio web.

Creas una rama para un nuevo tema sobre el que quieres trabajar.

Realizas algo de trabajo en esa rama.

En este momento, recibes una llamada avisándote de un problema crítico que has de resolver. Y sigues los siguientes pasos:

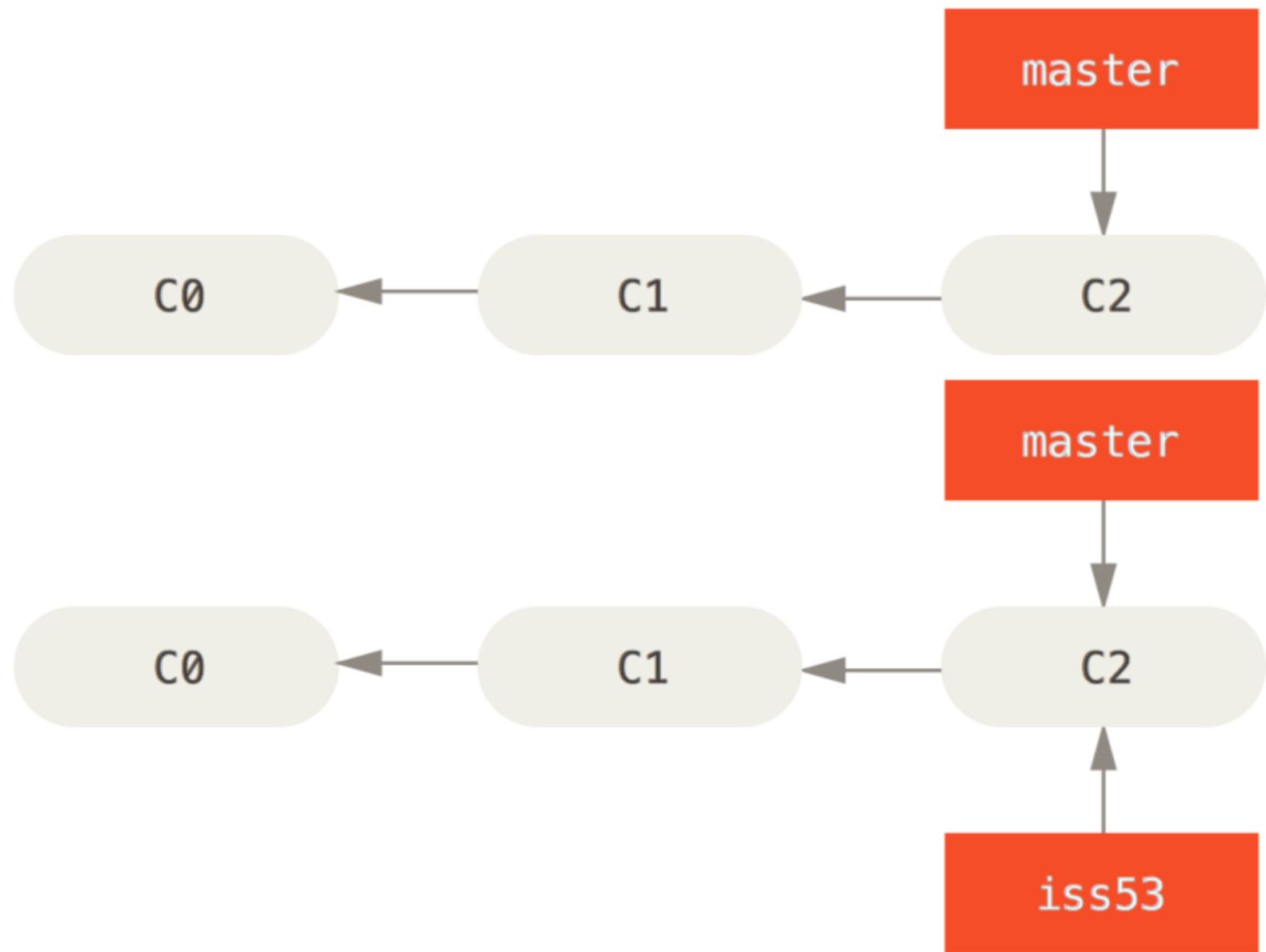
Vuelves a la rama de producción original.

Creas una nueva rama para el problema crítico y lo resuelves trabajando en ella.

Tras las pertinentes pruebas, fusionas (merge) esa rama y la envías (push) a la rama de producción.

Vuelves a la rama del tema en que andabas antes de la llamada y continuas tu trabajo

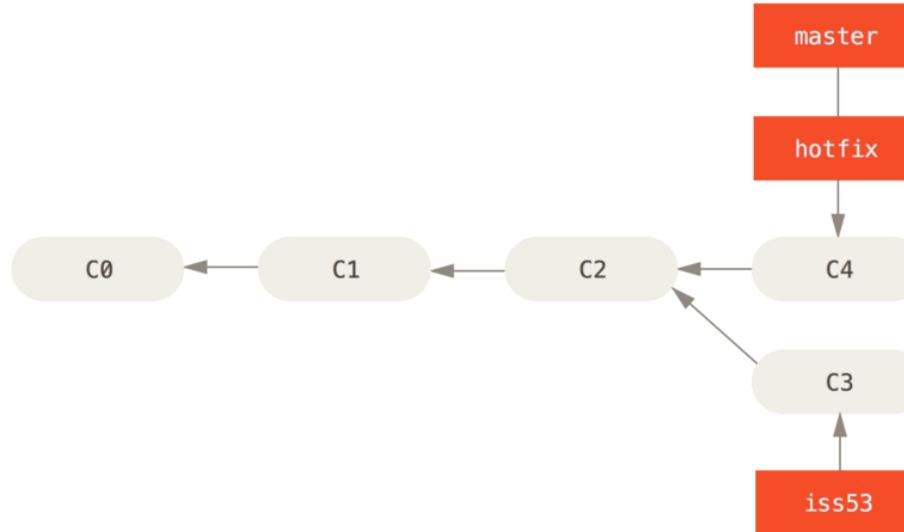
## PASO 1



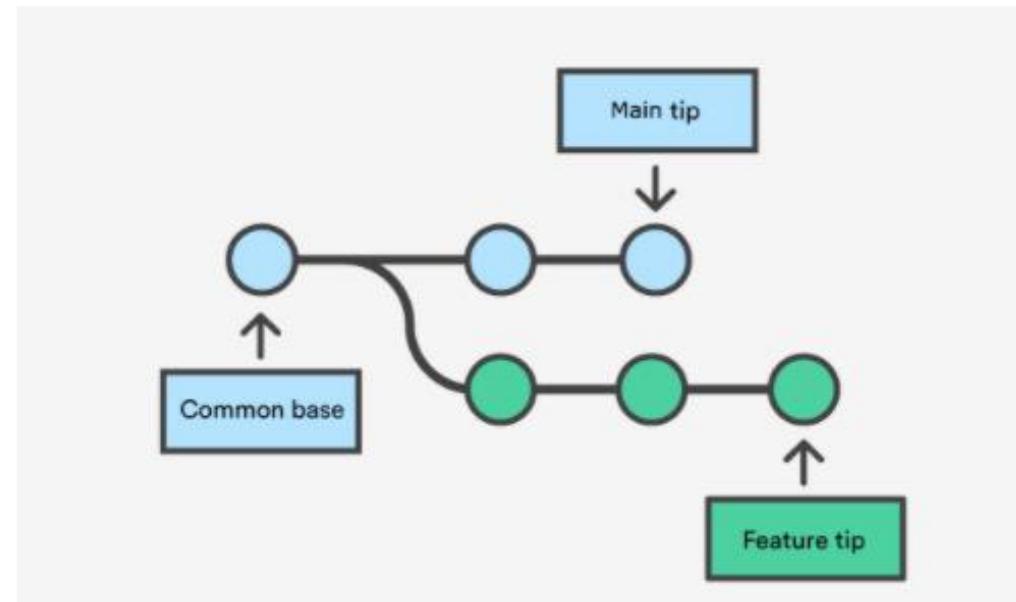
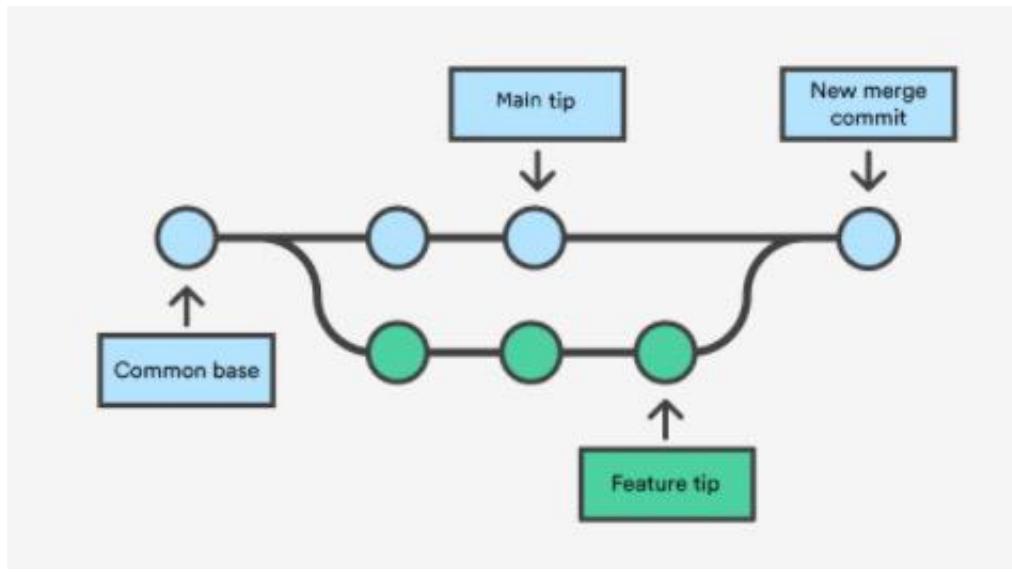
# RECIBES LA LLAMADA

```
$ git checkout master  
Switched to branch 'master'
```

```
$ git checkout -b hotfix  
Switched to a new branch 'hotfix'  
$ vim index.html  
$ git commit -a -m 'fixed the broken email address'  
[hotfix 1fb7853] fixed the broken email address  
1 file changed, 2 insertions(+)
```



# MERGE



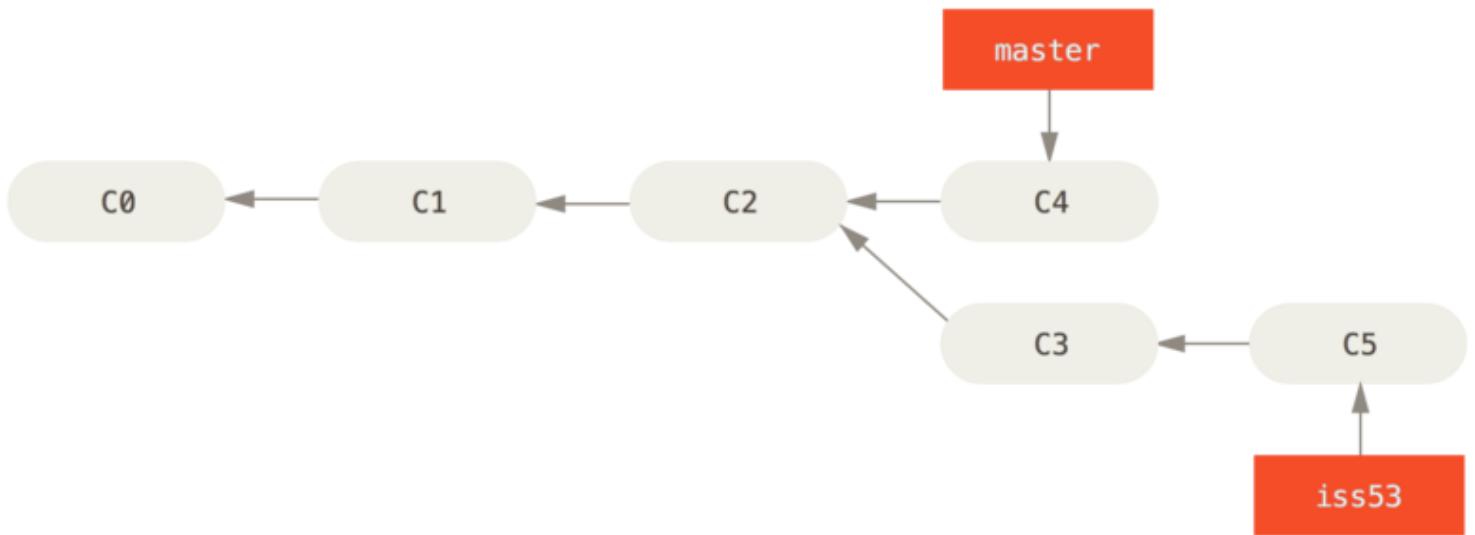
# SOLUCIONAMOS EL PROBLEMA URGENTE

```
$ git branch -d hotfix
Deleted branch hotfix (3a0874c).
```

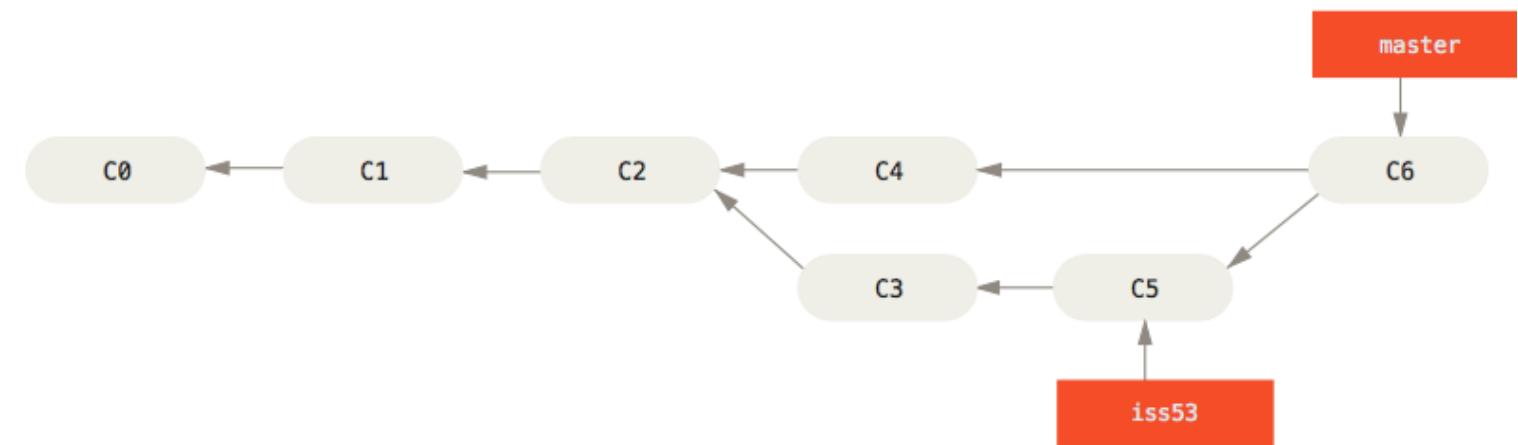
```
$ git checkout iss53
Switched to branch "iss53"
$ vim index.html
$ git commit -a -m 'finished the new footer [issue 53]'
[iss53 ad82d7a] finished the new footer [issue 53]
1 file changed, 1 insertion(+)
```

```
$ git checkout master
$ git merge hotfix
Updating f42c576..3a0874c
Fast-forward
 index.html | 2 ++
 1 file changed, 2 insertions(+)
```

# SITUACIÓN ACTUAL



# RESOLVIENDO EL PROBLEMA INICIAL



# DEMO

- ▶ packages
- ▶ scripts
- ▶ src
- ▶ test
- ▶ types

.babelrc.js

.editorconfig

.eslintignore

.eslintrc.js

.flowconfig

.gitignore

BACKERS.md

v2.6.0-beta.2 | build: release 2.6.0-beta.2

build: build 2.6.0-beta.2

feat: dynamic directive arguments for v-on, v-bind and custom directives (#9370)

origin/dynamic-directive-arguments

feat: dynamic args for custom directives

perf: improve scoped slots change detection accuracy (#9371)

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test: fix tests, resolve helper conflict

fix: fix middle modifier

feat: handle dynamic argument for v-bind.sync

origin/slot-optimization

perf: improve scoped slots change detection

feat: dynamic directive arguments for v-bind and v-on

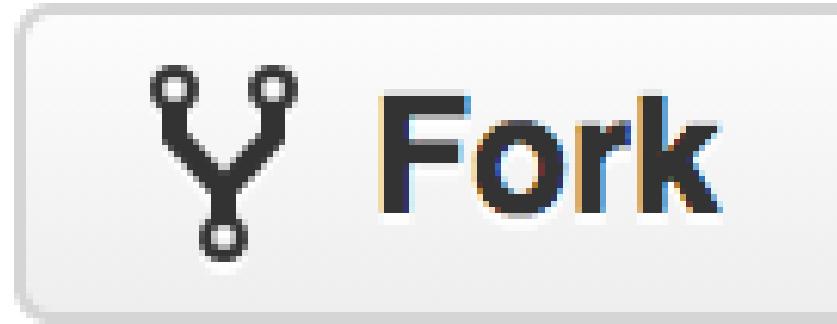
refactor: extend dom-props update skip to more attributes (#9372)

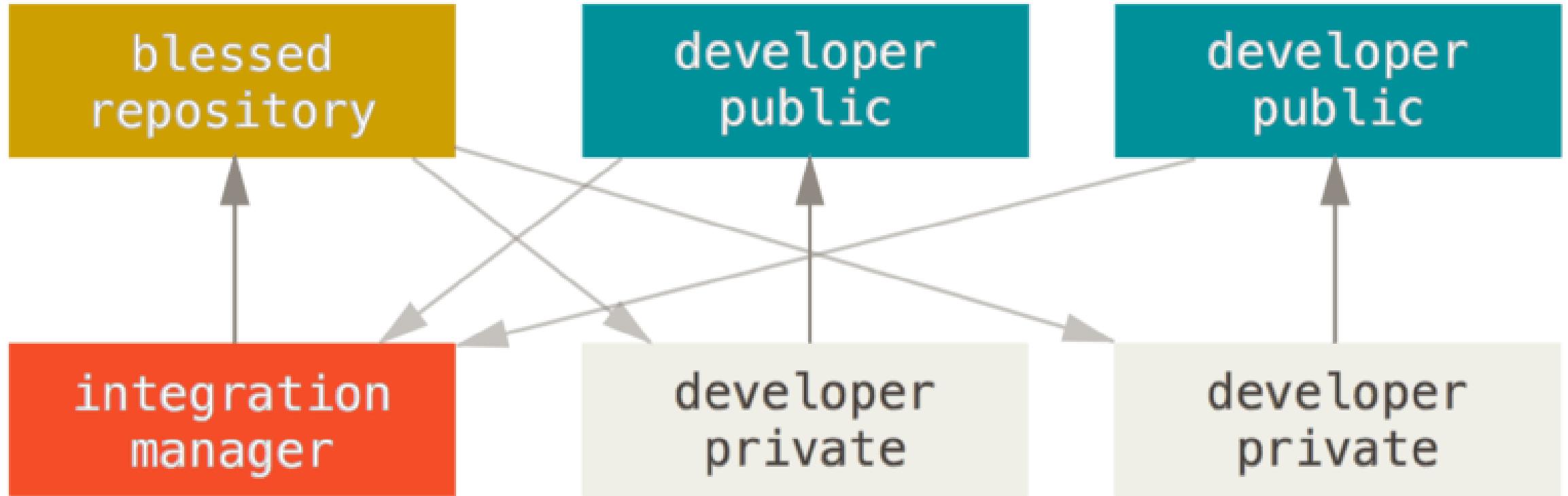
fix: fix checkbox event edge case in Firefox

test: fix tests in IE/Edge

refactor: simplify build script

F O R K

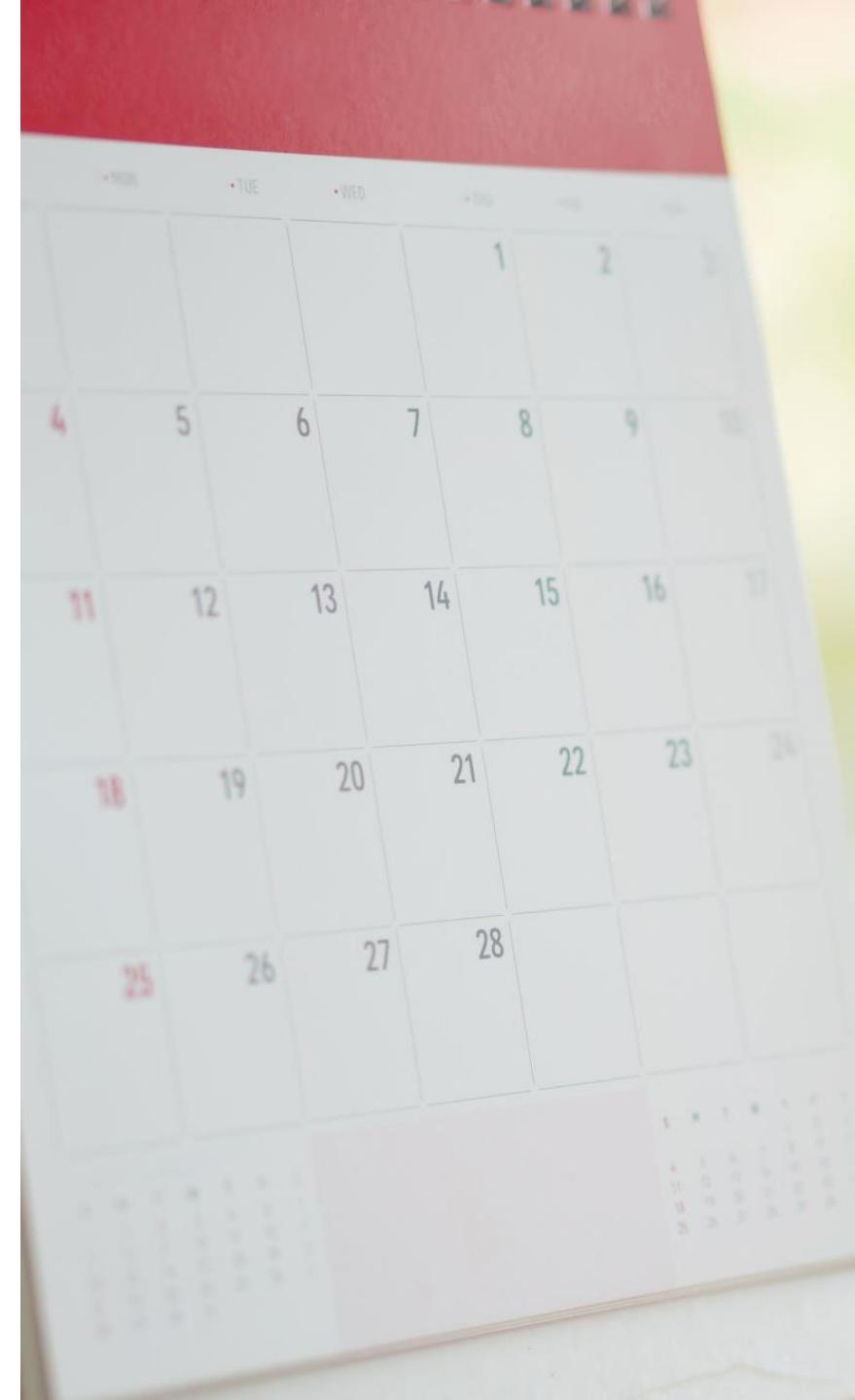




FLUJO DE TRABAJO

# FLUJO DE TRABAJO

1. Se crea una rama a partir de master.
2. Se realizan algunos commits hacia esa rama.
3. Se envía esa rama hacia tu copia (fork) del proyecto.
4. Abres un Pull Request.
5. Se participa en la discusión asociada y, opcionalmente, se realizan nuevos commits.
6. El propietario del proyecto original cierra el Pull Request, bien fusionando la rama con tus cambios o bien rechazándolos.



# PULL REQUEST

Bitbucket Teams - Repositories - Create

foo-project mary Share

Clone Branch Pull request ...

Overview Source Commits Branches Pull requests 1 Downloads

Create a pull request

mary / foo-project  
Created 2013-08-20, updated 23 hours ago

some-feature

john / foo-project

main

Title: Mary's Awesome Feature

Description

Mary's awesome feature adds all sorts of great functionality to the project.

Reviewers: Start typing to search for a user

Close branch  Close main after the pull request is merged

Create pull request

The screenshot shows the Bitbucket interface for creating a pull request. At the top, there's a navigation bar with 'Bitbucket', 'Teams', 'Repositories', 'Create', and a search bar 'owner/repository'. Below the header, the repository 'foo-project' is shown, owned by 'mary'. There are buttons for 'Clone', 'Branch', 'Pull request', and more. A navigation bar below the repository includes 'Overview', 'Source', 'Commits', 'Branches', 'Pull requests 1', 'Downloads', and a gear icon. The main area is titled 'Create a pull request' and shows a diagram of two branches: 'some-feature' (from 'mary') pointing to 'main' (on 'john'). The pull request details include a title 'Mary's Awesome Feature', a description about adding functionality, and a review section. A checkbox 'Close main after the pull request is merged' is present, and a large blue 'Create pull request' button is at the bottom.

 feature/BLUES-273-add-error-handling → master **OPEN**

2 open tasks  Merge ...

## BLUES-273 - Handle errors when fetching dashboard details

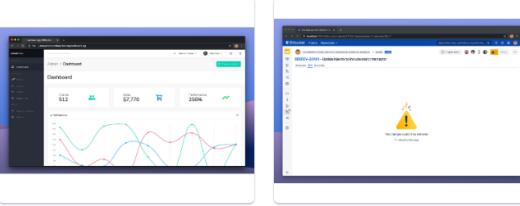
[Overview](#) [Diff](#) [Commits](#)

 **Matthieu Di Berardino** created a pull request Yesterday

**Changes**

- Added new `ServerError` widget to show common errors with an illustration,
- Added handling of the error case when dashboard details can't be retrieved.

**Screenshots**



**Activity**

 What do you want to say?

PULL REQUEST

# LABORATORIO 2

build: build 2.6.0-beta.2

origin/dynamic-directive-arguments

feat: dynamic args for custom components

perf: improve scoped slots change detection accuracy (#9371)

## RIO 2: test cases for y-only-bind dynamic arguments

refactor: y-bind dynamic arguments use bind helper

test: fix tests, resolve helper conflict

fix: fix middle modifier

feat: handle dynamic argument for v-bind.sync

origin/slot-optimization

perf: improve scoped slots change

feat: dynamic directive arguments for v-bind and v-on

fix: fix checkbox event edge case in Firefox

test: fix tests in IE/Edge

refactor: simplify

- ▶ packages
- ▶ scripts
- ▶ src
- ▶ test
- ▶ types

.babelrc.js

## editorconfig

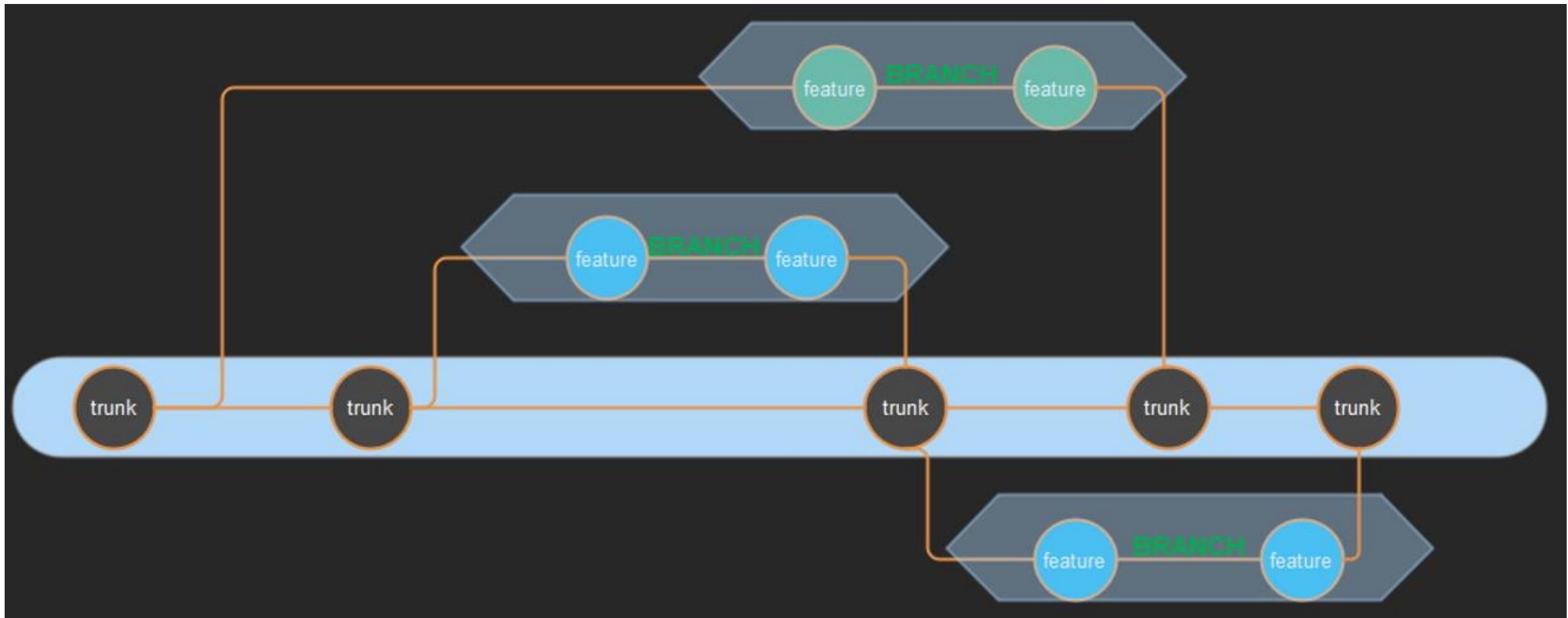
`eslintignore`

`osclintrc` is

flowconfig

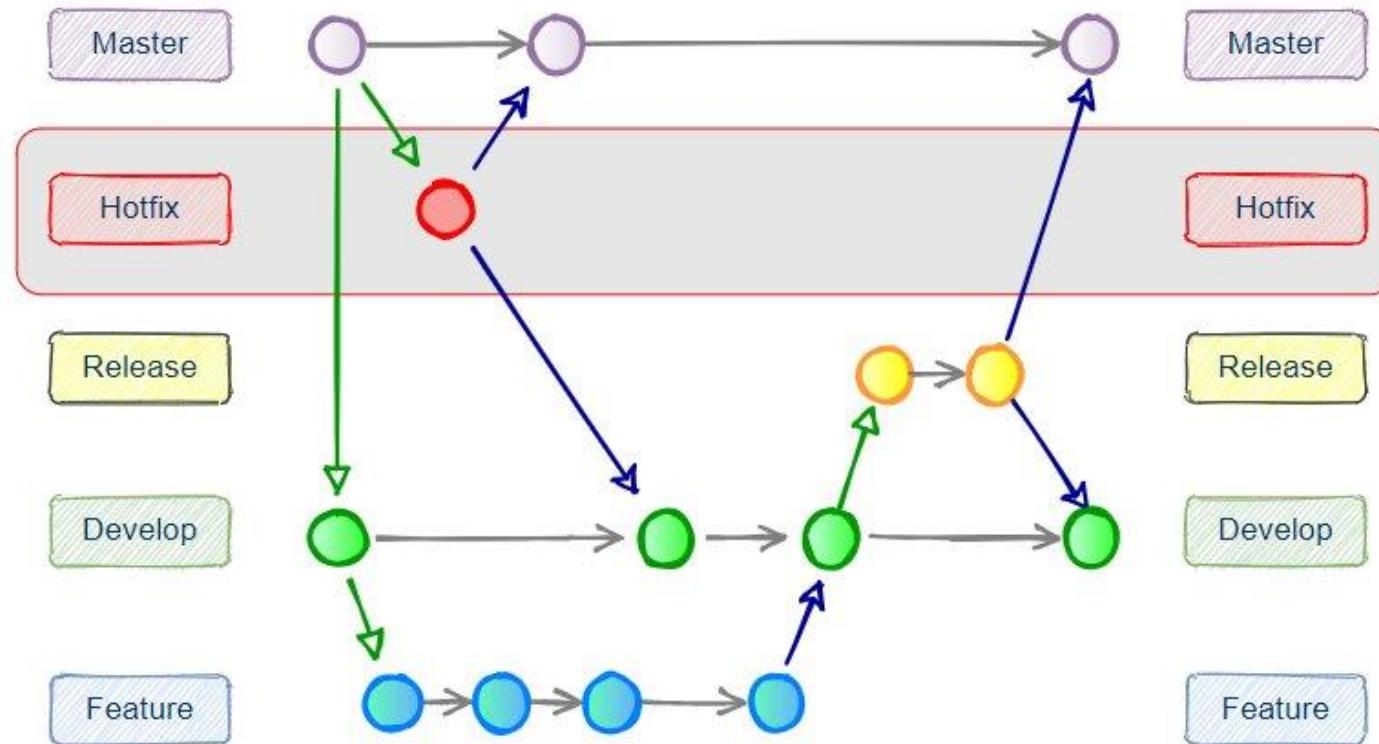
singapore

BACKERS.md



DESARROLLO BASADO EN  
TRONCOS

## Gitflow Workflow Diagram



GITFLOW

# RAMAS PRINCIPALES



FEATURE/\*

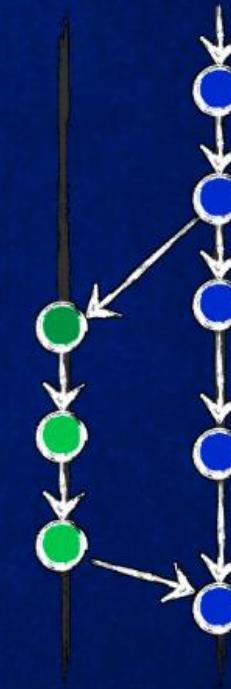
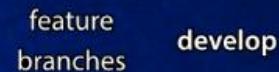
Git

```
# Creación
git checkout -b feature/lorem-ipsum develop

# Finalización
git checkout develop
git merge --no-ff feature/lorem-ipsum
git branch -d feature/lorem-ipsum
git push origin develop
```

## Git Flow

```
# Creación  
git flow feature start lorem-ipsum  
  
# Finalización  
git flow feature finish lorem-ipsum
```



# FEATURE

# RELEASE

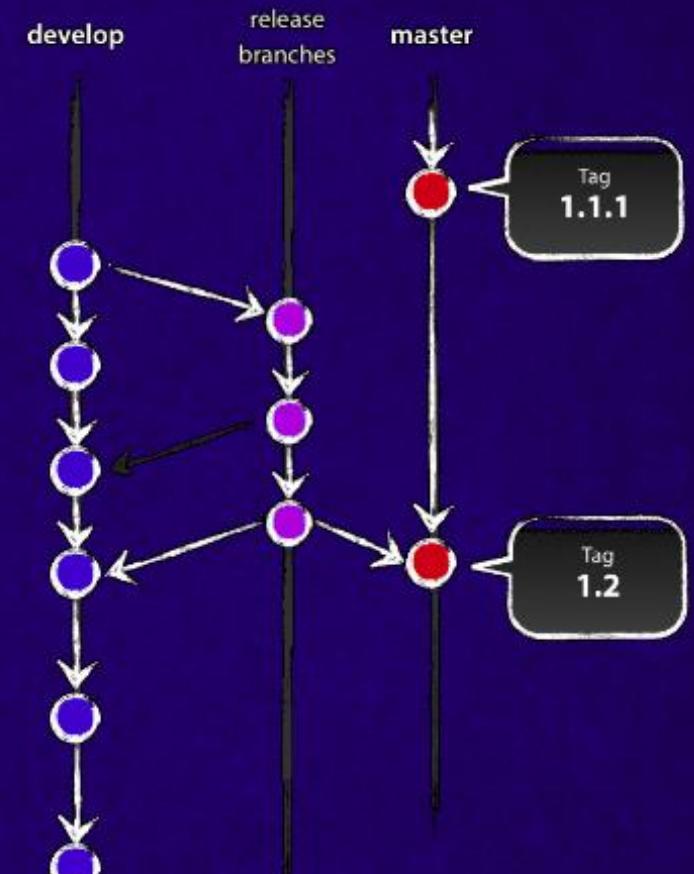
# RELEASE/VERSION

## Git

```
# Creación  
git checkout -b release/v2.3.0 develop  
  
# Finalización  
git checkout master  
git merge --no-ff release/v2.3.0  
git tag -a v2.3.0  
  
git checkout develop  
git merge --no-ff release/v2.3.0  
  
git branch -d release/v2.3.0
```

## Git Flow

```
# Creación  
git flow release start v2.3.0  
  
# Finalización  
git flow release finish v2.3.0
```



# DEMO

- ▶ packages
- ▶ scripts
- ▶ src
- ▶ test
- ▶ types

.babelrc.js

.editorconfig

.eslintignore

.eslintrc.js

.flowconfig

.gitignore

BACKERS.md

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perf: improve scoped slots change detection

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refactor: extend dom-props update skip to more attributes (#9372)

fix: fix checkbox event edge case in Firefox

test: fix tests in IE/Edge

refactor: simplify build script

# HOTFIX

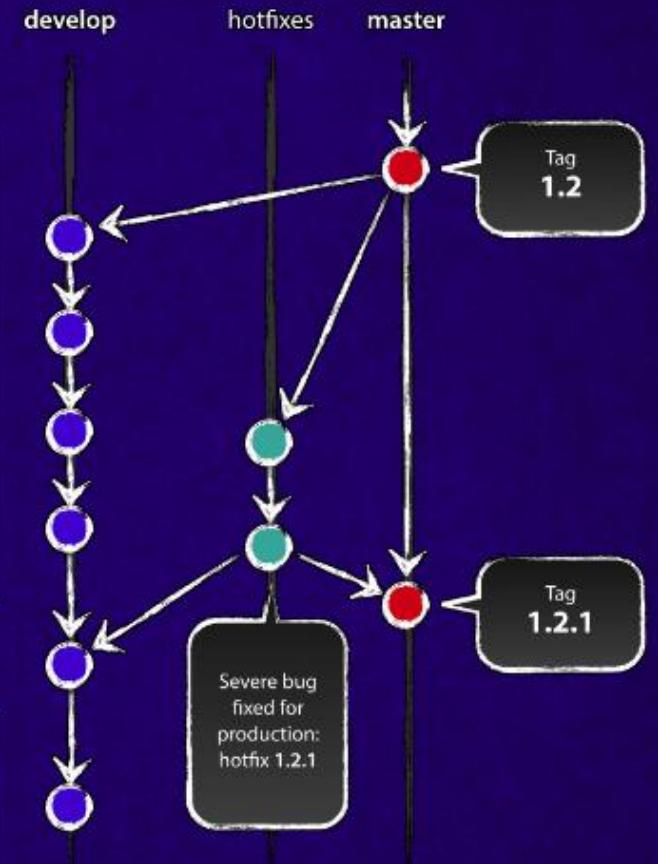
## HOTFIX/VERSION

### Git

```
# Creación  
git checkout -b hotfix/v2.3.7 master  
  
# Finalización  
git checkout master  
git merge --no-ff hotfix/v2.3.7  
git tag -a v2.3.7  
  
git checkout develop  
git merge --no-ff hotfix/v2.3.7  
  
git branch -d hotfix/v2.3.7
```

### Git Flow

```
# Creación  
git flow hotfix start v2.3.7  
  
# Finalización  
git flow hotfix finish v2.3.7
```



# DEMO

```
▶ packages  
  ▶ scripts  
  ▶ src  
  ▶ test  
  ▶ types
```

.babelrc.js

.editorconfig

.eslintignore

.eslintrc.js

.flowconfig

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BACKERS.md

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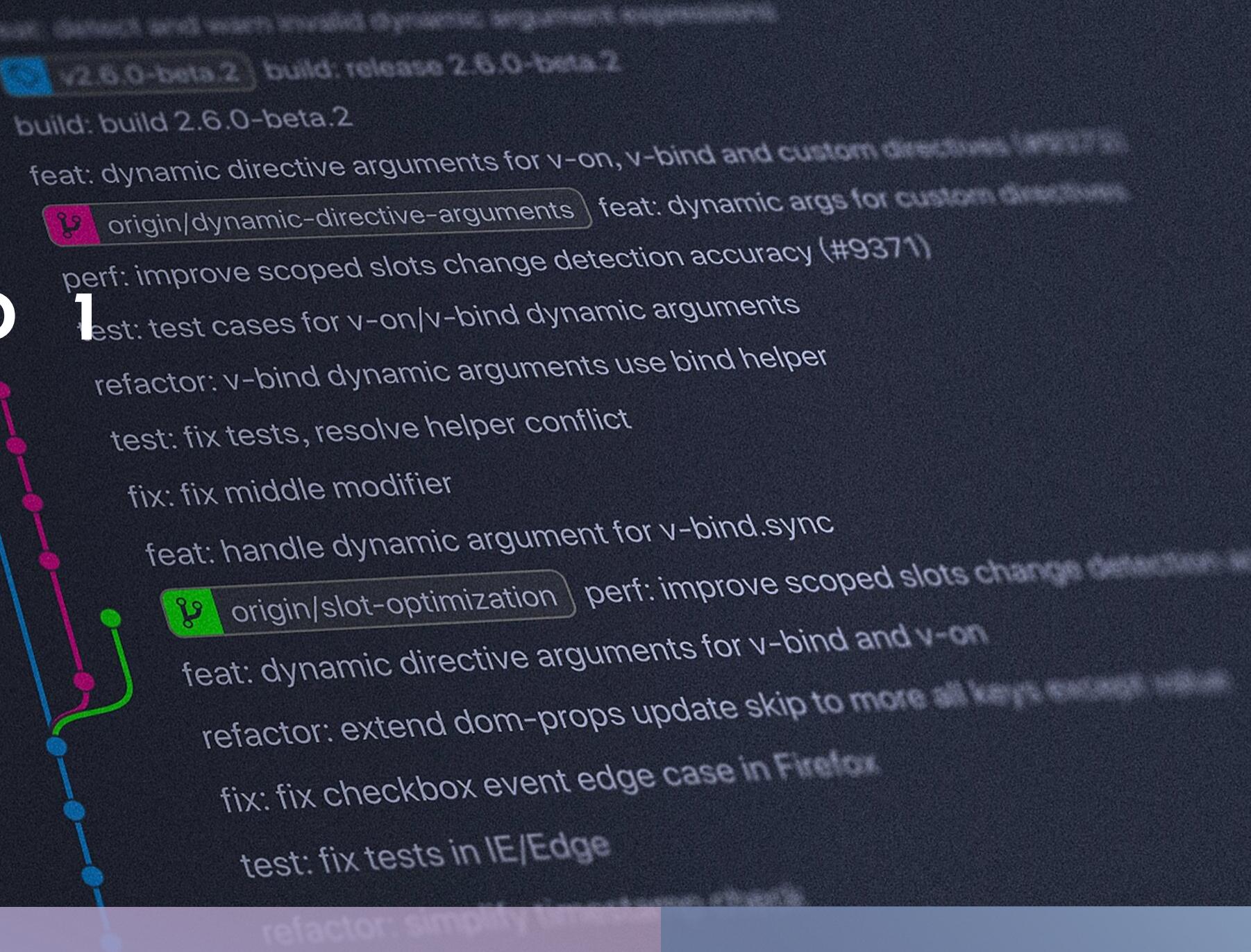
fix: fix checkbox event edge case in Firefox

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# EJERCICIO 1

```
▶ packages
  ▶ scripts
  ▶ src
  ▶ test
  ▶ types
  .babelrc.js
  .editorconfig
  .eslintignore
  .eslintrc.js
  .flowconfig
  .gitignore
  BACKERS.md
```



# Modulo 2: Pruebas automatizadas

- Pruebas de unidad: Junit
- Pruebas de integración: Mockito
- Pruebas de aceptación Frontend: Selenium
- Pruebas de rendimiento: Jmeter





# INTRODUCCIÓN A PRUEBAS



vs.



**Pruebas  
dinámicas**

**Pruebas  
estáticas**

# TIPOS DE SOFTWARE TESTING

## Pruebas funcionales

- Pruebas unitarias
- Pruebas de integración
- Pruebas de sistema
- Pruebas de sanidad
- Pruebas de humo
- Pruebas de interfaz
- Pruebas de regresión
- Pruebas de aceptación

## Pruebas no funcionales

- Pruebas de rendimiento
- Prueba de carga
- Pruebas de estrés
- Pruebas de volumen
- Pruebas de seguridad
- Pruebas de compatibilidad
- Pruebas de instalación
- Pruebas de recuperación
- Pruebas de confiabilidad
- Pruebas de usabilidad
- Pruebas de conformidad
- Pruebas de localización



Entrada

Software

Salida

Test de Caja Negra



Entrada

Software

Salida

Test de Caja Blanca

# ESTRATEGIA DE PRUEBAS

- Planificación: Definición de estrategias, alcance, recursos y calendario de pruebas.
- Diseño de Casos de Prueba: Creación de escenarios y casos de prueba basados en requisitos.
- Ejecución de Pruebas: Ejecución de casos de prueba y registro de resultados.
- Análisis de Resultados: Evaluación de los resultados de las pruebas y seguimiento de los defectos encontrados.
- Informe y Retest: Creación de informes de pruebas y reevaluación tras la corrección de defectos.



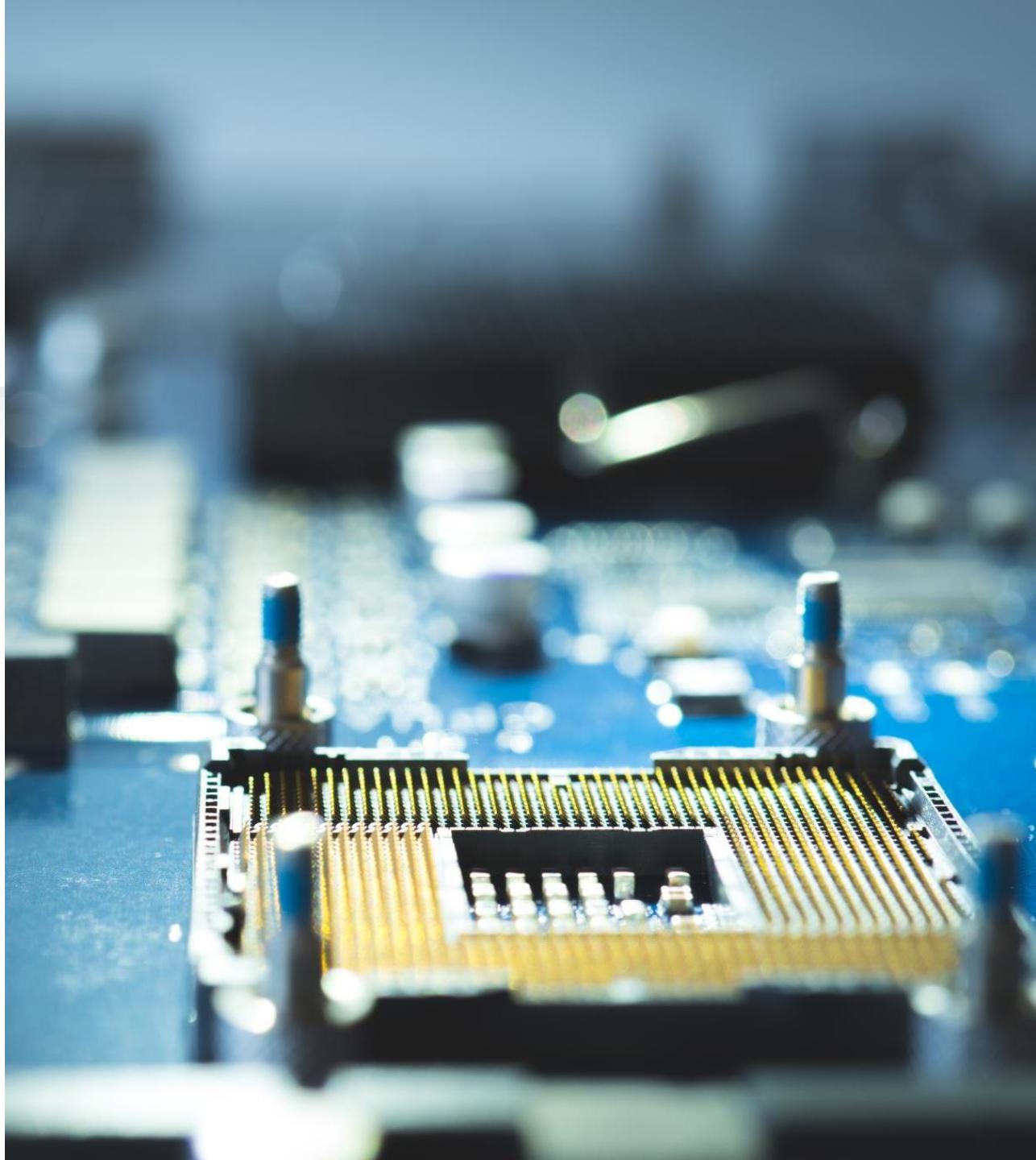
# DISEÑO DE PRUEBAS

- Conocimiento de los Requisitos
- Reducción de la funcionalidad a probar
- Definición de Casos de Prueba
- Relacionar con los Casos de Usuario (historias)
- Pensar bien los costes de las pruebas
- Enfocarse en las funcionalidades más críticas
- Cada prueba requiere su herramienta



# HERRAMIENTAS

- Pruebas Unitarias: Junit
- Pruebas de Integración: Mockito
- Pruebas de Aceptación/Funcionalidad Web: Selenium
- Bases de Datos/Web Rendimiento: Jmeter/Blazemeter/Gatling
- Servidor de Integración Contínua: Jenkins/TravisCI/CircleCI
- Herramienta de Seguimiento de Proyectos e Incidencias: Jira/Mantis
- Automatizador de la Compilación, Despliegue y Ejecución de proyectos: Maven/Gradle/NPM
- Despliegue de aplicaciones: Docker/Kubernetes



# AUTOMATIZACIÓN DE LAS PRUEBAS





# EJEMPLO

```
import org.junit.Test;  
import static org.junit.Assert.assertEquals;  
public class MiClaseTest {  
  
    @Test  
    public void pruebaSuma() {  
        int resultado = MiClase.suma(3, 5);  
        assertEquals(8, resultado);  
    }  
}
```



# MENSAJES PERSONALIZADOS

```
assertEquals(2, calculadora.suma(1, 1), "La suma debería ser  
2");
```

```
assertEquals(2, calculadora.suma(1, 1), () -> "La suma  
debería ser 2")
```

# LA ANATOMIA DE JUNIT

```
package examples.nbank;

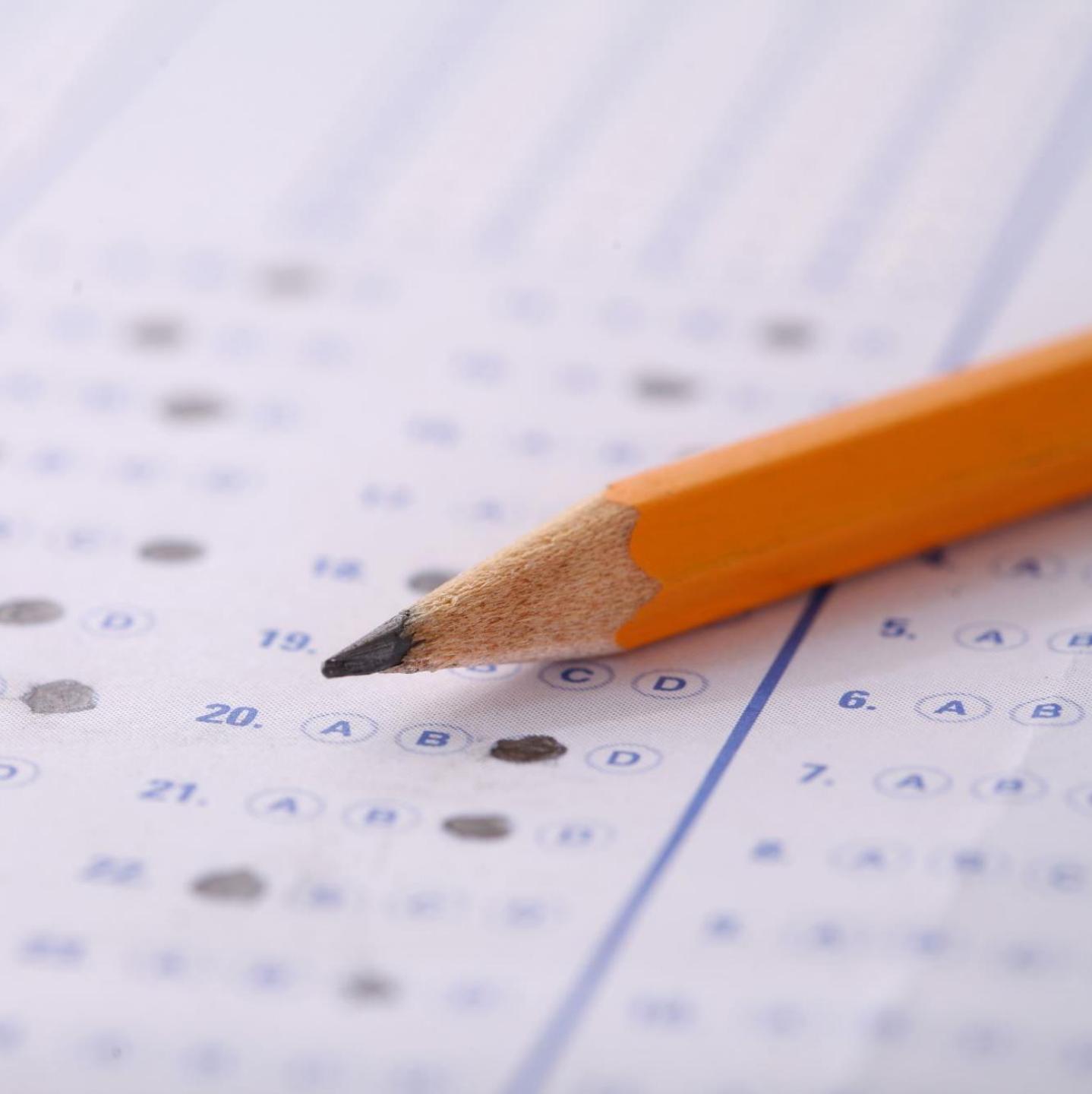
public class Conversion {

    public double tempConversion (double temperature, String unit) {
        if (unit.equals("F"))
            return (temperature - 32) * (5.0/9.0);
        else
            return (temperature * (9.0/5.0)) + 32;
    }
}
```

```
1import static org.junit.Assert.assertEquals;
2import org.junit.*;
3public class ConversionTest {
    4@Test
    5public void testTempCoversion() throws Throwable {
        // Given
        6Conversion underTest = new Conversion();

        // When
        7double temperature = 80.0d;
        String unit = "";
        8double result = underTest.tempConversion(temperature, unit);

        // Then - assertions for result of method tempConversion(double, String)
        9assertEquals(176.0d, result, 0.0);
    }
}
```



TRABAJANDO  
CON TEST



# EXCEPCIONES CONTROLADAS

- JUnit nos permite comprobar que un método lanza una excepción controlada.
  - Deben extender de Throwable. Por ejemplo RuntimeException.
  - `assertThrows(Exception.class, () -> {});`
  - `assertThrows(Exception.class, () -> {}, message);`

# ASSERT ALL

- Difícil seguimiento de asserts cuando hay muchos en un test.
- Si un assert falla, no se ejecutan los siguientes y no sabemos su evaluación.
- `assertAll` ejecuta todos los assert independientemente del posible fallo de uno de ellos.
- Reporta todos los fallos. Dónde se han producido y por qué.



# EJEMPLO DE USO

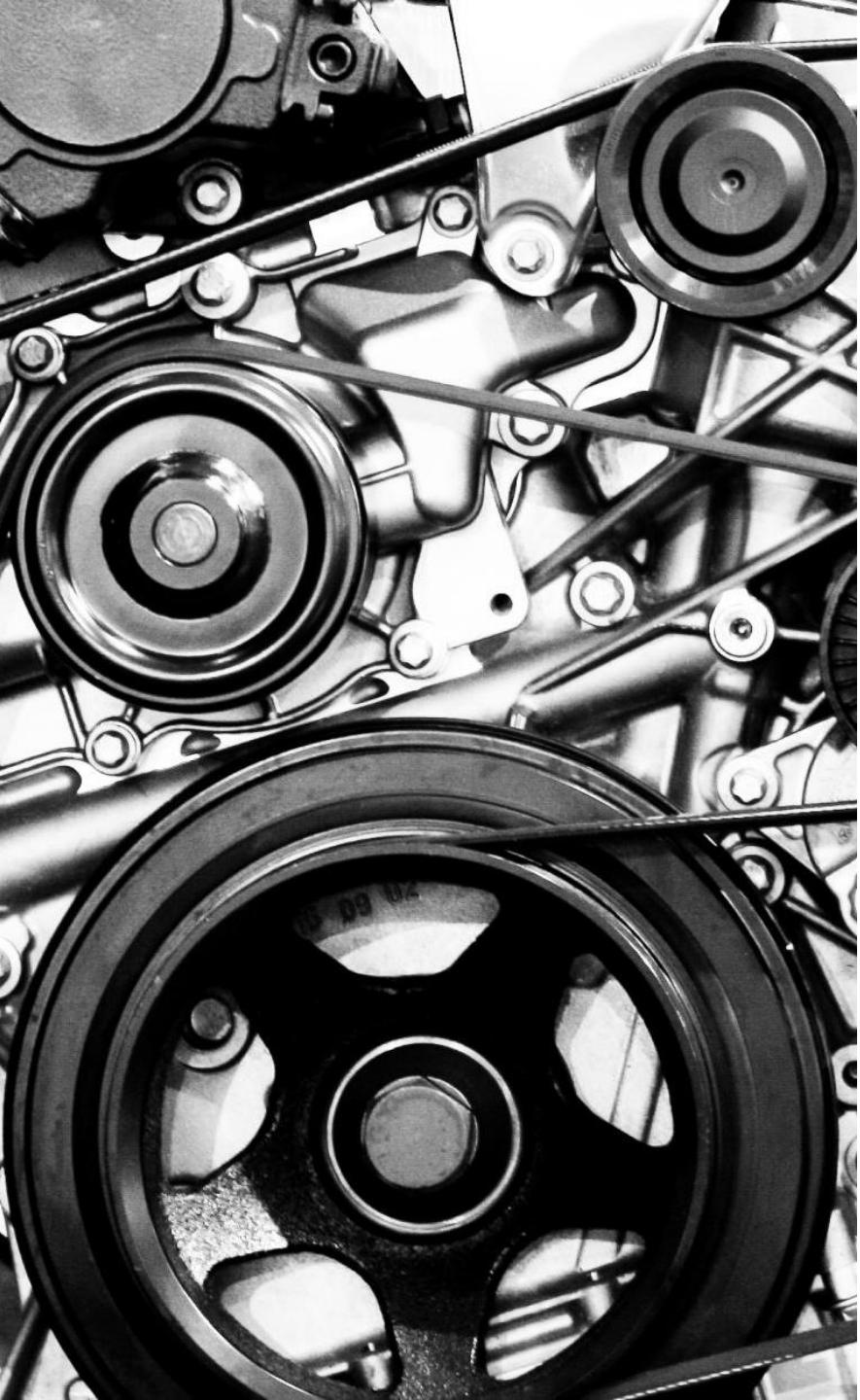
- `assertAll(String message, () -> {});`
- Pueden incluir varias expresiones lambda.
- `assertAll("probando compras", () ->  
assertNotNull(store.getProducts()), () ->  
assertEquals(2,  
store.getProducts().size()), () ->  
assertTrue(new  
BigDecimal("300.00").compareTo(actual  
Amount) == 0));`





# DAR NOMBRE A LOS TESTS

- JUnit 5 nombra a los tests con el nombre del método.
- Permite especificar un nombre personalizado anotando el método con `@DisplayName("Nombre del test")`;
  - `@Test`
  - `@DisplayName("Comprobación suma calculadora")`
  - `void sumaCalculadora() { ... }`



# CICLO DE VIDA

- Proceso por el cual se crea, se ejecuta y se destruye una instancia encargada de la realización de las pruebas
- Se encarga el motor de JUnit 5.
- Se crea una nueva instancia con cada test que se ejecuta.
- JUnit 5 permite ejecutar hooks en diferentes momentos del ciclo de vida.
- Hooks de JUnit 5: `@BeforeAll / @AfterAll`  
`@BeforeEach/ @AfterEach`

# @BEFOREEACH /

# @AFTEREACH

- Se ejecuta una vez que se crea una nueva instancia, es decir, cada vez que se ejecuta un test.
- **@BeforeEach** - Se ejecuta antes de la ejecución del test.
- **@AfterEach** - Se ejecuta después de la ejecución del test.

```
public class TiendaTest {  
    private List<String> products;  
@BeforeEach  
    void setup() {  
        products = Arrays.asList("product1",  
"product2");  
    }  
  
@AfterEach  
    void teardown() {  
        products.clear();  
    }  
}
```



# @BEFOREALL/@AFTERALL

- Se ejecuta antes de crear/después de destruir la instancia, por lo que se implementa en un método estático.
- Si se anota en un método no estático, éste fallará, ya que la instancia no existe.
- Se puede forzar que la instancia sólo se cree una vez, aunque es mala práctica, pues compartes el estado de la clase entre tests.
- @Creando una instancia por clase, nos permite quitar el static a @BeforeAll/@AfterAll



# DESHABILITANDO TESTS UNITARIOS

- Los tests pueden deshabilitarse para evitar su ejecución.
- Anotamos el test con `@Disabled` ○ JUnit 5 recomienda especificar un motivo:
- `@Disabled("Se deshabilita este test hasta que el bug @B54 se resuelva")`

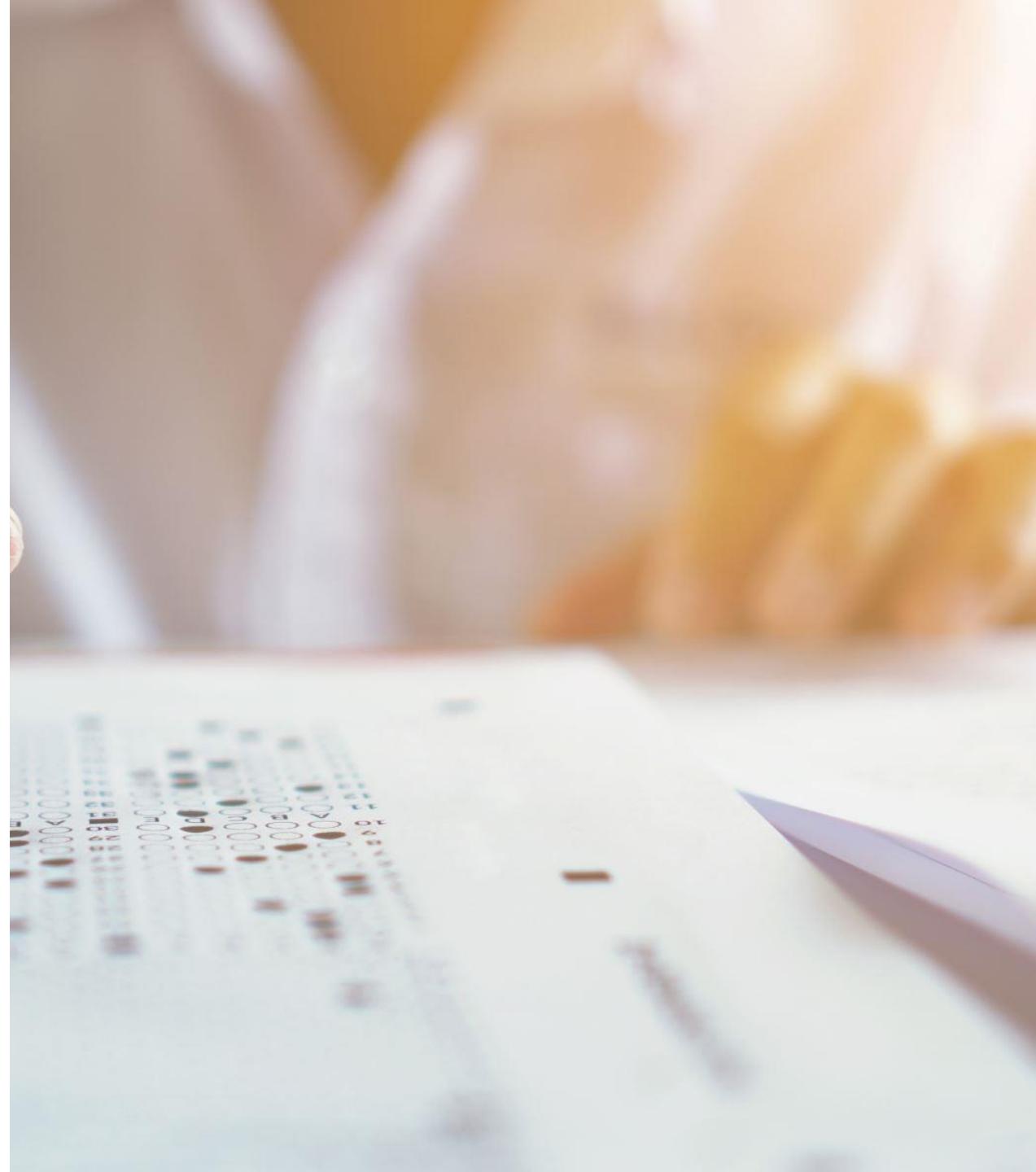
# TESTS CONDICIONALES - ANOTACIONES

- Las pruebas unitarias se pueden ejecutar conforme a diferentes condiciones.
- JUnit ofrece anotaciones para habilitar o no dichos tests:  
@EnabledOnOS @EnabledOnJre @EnabledIfSystemProperty  
@EnabledIfEnvironmentVariable

```
@EnabledIf("hasStock")
```

```
@Test
```

```
void it_should_decrease_stock() {  
}  
  
boolean hasStock(){  
}
```



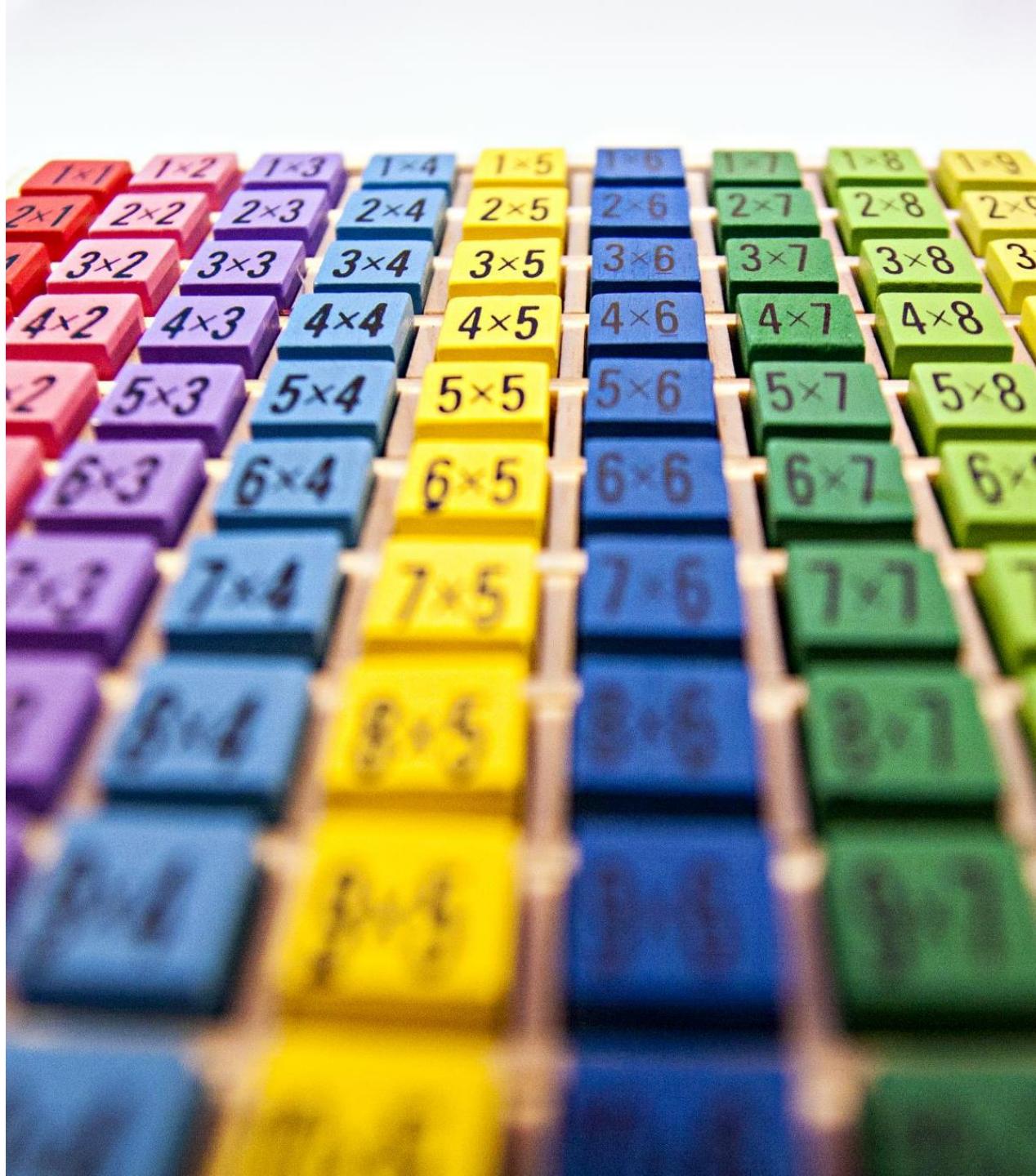
# TESTS CONDICIONALES

- Permiten habilitar parte de un test en función de si se cumple una condición. `assumeTrue(boolean condition); assumeFalse(boolean condition);`
- Si la assumption no se cumple, el código a partir de ahí se deshabilita, evitando el fallo
- JUnit 5 permite ejecutar o no parte del método encapsulándolo en una expresión lambda. ○ `assumingThat(boolean, () -> {});`
- La expresión lambda sólo se va a ejecutar si la expresión evalúa a true.
- El código fuera de la expresión lambda, sí se ejecutará.



# CLASES ANIDADAS

- Las clases anidadas permiten organizar los tests por diferentes criterios: funcionalidad, condicionalidad... Se anotan las clases con `@Nested`.
- Se puede incluir una descripción en dichas clases y los métodos que contiene con `@DisplayName`. Los tests aparecerán en el reporting agrupados por clases. Si falla un test de una clase `@Nested`, aparecerá como fallo el test y las clases contenedoras del mismo (hasta la clase raíz).



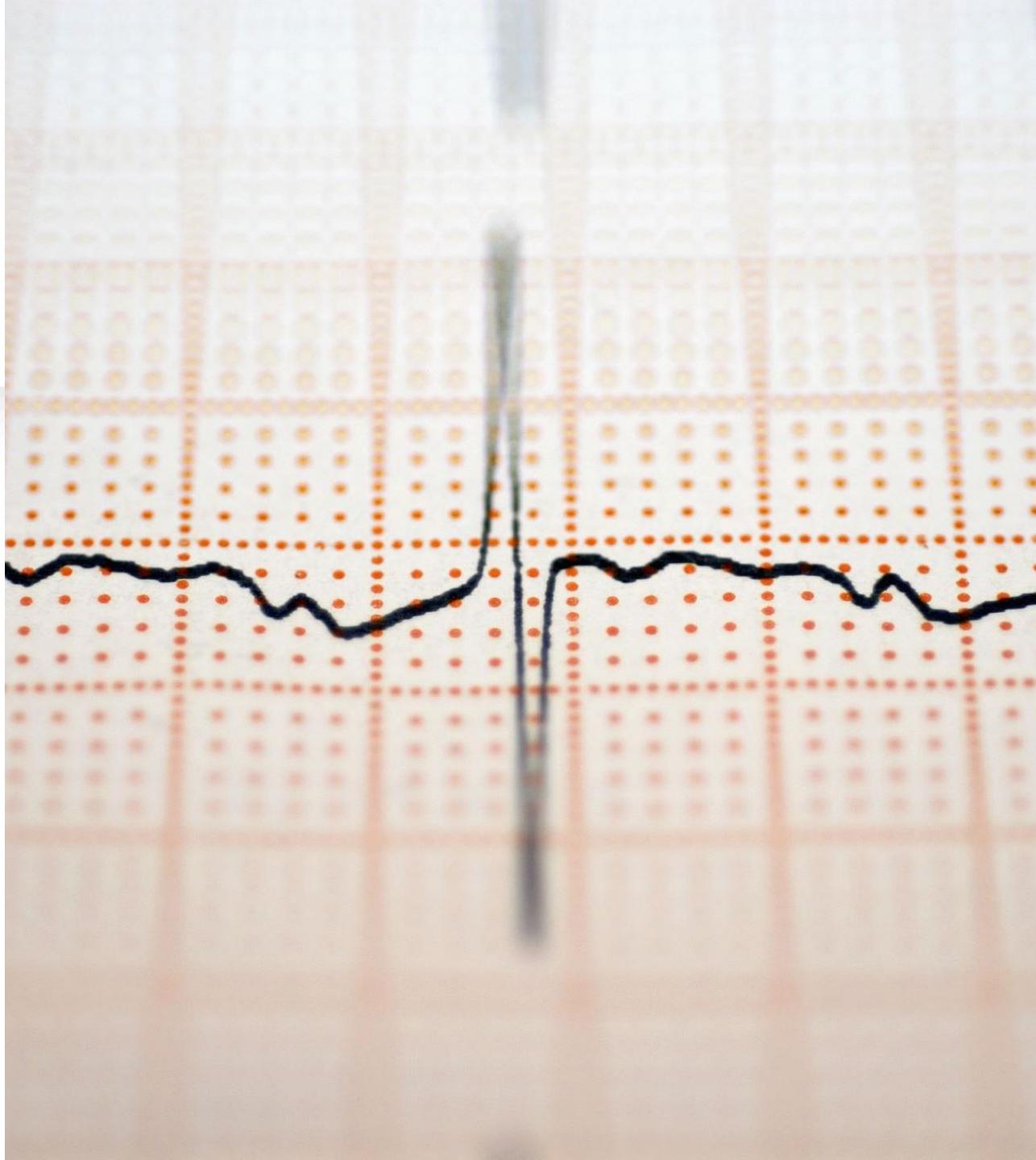
# REPETIR TESTS

- JUnit 5 permite ejecutar varias veces el test. Útil en métodos que presentan cierta aleatoriedad.
  - Por ejemplo, crean valores random. Se anotan con `@RepeatedTest(int repetitions)`
- En el reporting, aparece la ejecución de las repeticiones. Es personalizable el nombre en cada ejecución del test.  
`@RepeatedTest(int, message)`
- Podemos usar variables para la creación de ese mensaje:  
`{currentRepetition} {totalRepetitions}`
- Podemos combinar el nombre con `@DisplayName`.  
`@DisplayName`: Será el título principal. `@RepeatedTest`: Nombre en cada repetición. `@DisplayName` puede ser inyectado en el mensaje de `@RepeatedTest`:
  - `{displayName}`



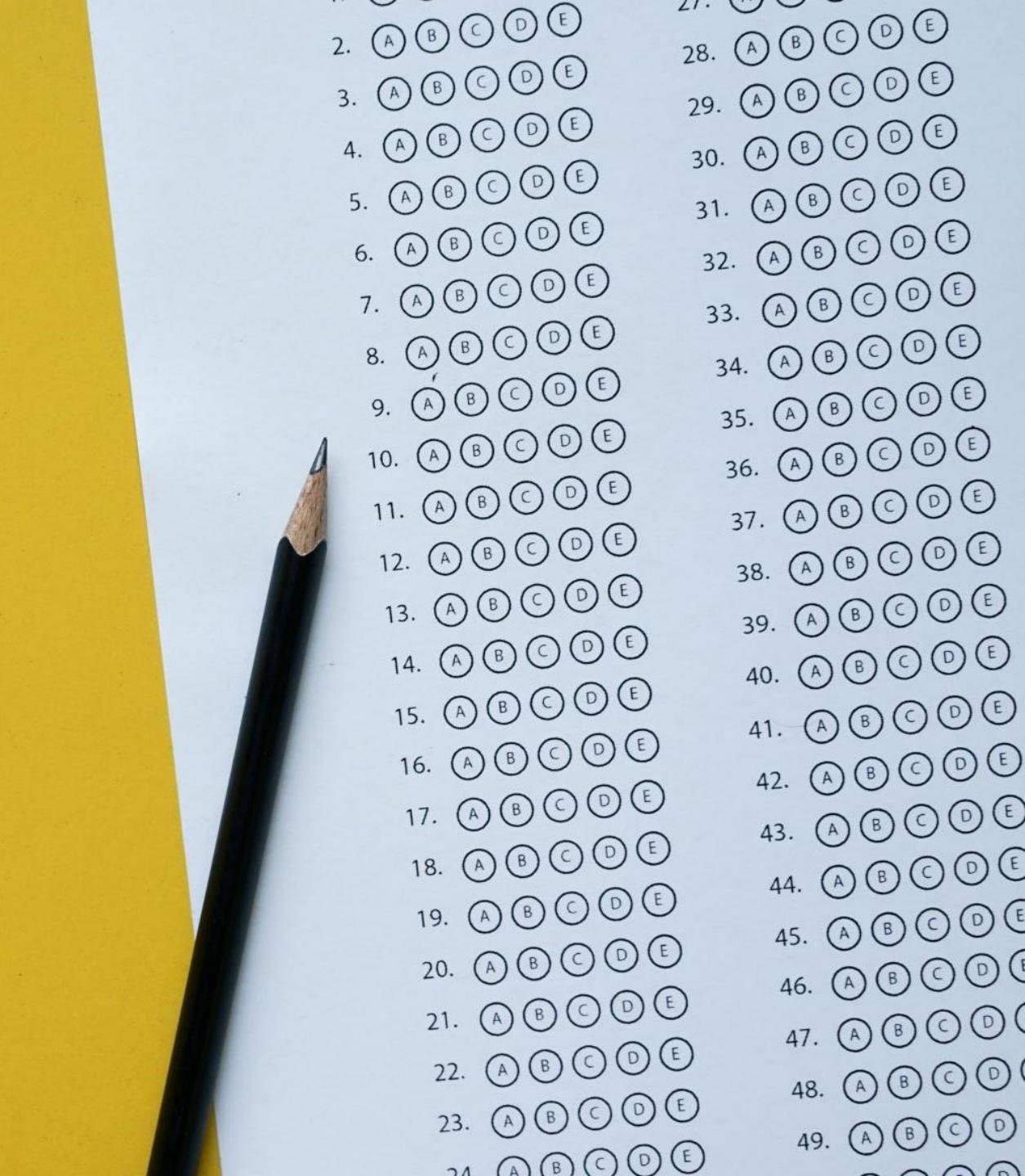
# TESTS PARAMETRIZADOS

- Otra forma de repetir tests en JUnit 5.
- Permite que en cada repetición se ejecute con datos diferentes. Se inyectan mediante variables en los métodos.
- JUnit 5 permite proporcionar dichos datos mediante: `@ValueSource(strings={})` Otros tipos: ints, doubles, booleans.  
`@CsvSource({índice, valor})`  
`@CsvFileSource(resources, delimiter, numLinesToSkip)` `@MethodSource(static methodName)`



# FILTRAR TESTS

- Permite ejecutar los tests de forma selectiva.
- Útil para identificar un test con el id de una tarea. Posibilidad de ejecutar grupos de tests.
- Se anota el test o la clase con @Tag. Se puede anotar con varios @Tag.
- Se especifican en el RunConfiguration / Maven.



# EJERCICIO

2

- ▶ packages
- ▶ scripts
- ▶ src
- ▶ test
- ▶ types

.babelrc.js

.editorconfig

.eslintignore

.eslintrc.js

.flowconfig

.gitignore

BACKERS.md

v2.6.0-beta.2 build: release 2.6.0-beta.2

build: build 2.6.0-beta.2

feat: dynamic directive arguments for v-on, v-bind and custom directives (#9370)

origin/dynamic-directive-arguments

feat: dynamic args for custom directives

perf: improve scoped slots change detection accuracy (#9371)

test: test cases for v-on/v-bind dynamic arguments

refactor: v-bind dynamic arguments use bind helper

test: fix tests, resolve helper conflict

fix: fix middle modifier

feat: handle dynamic argument for v-bind.sync

origin/slot-optimization

perf: improve scoped slots change detection

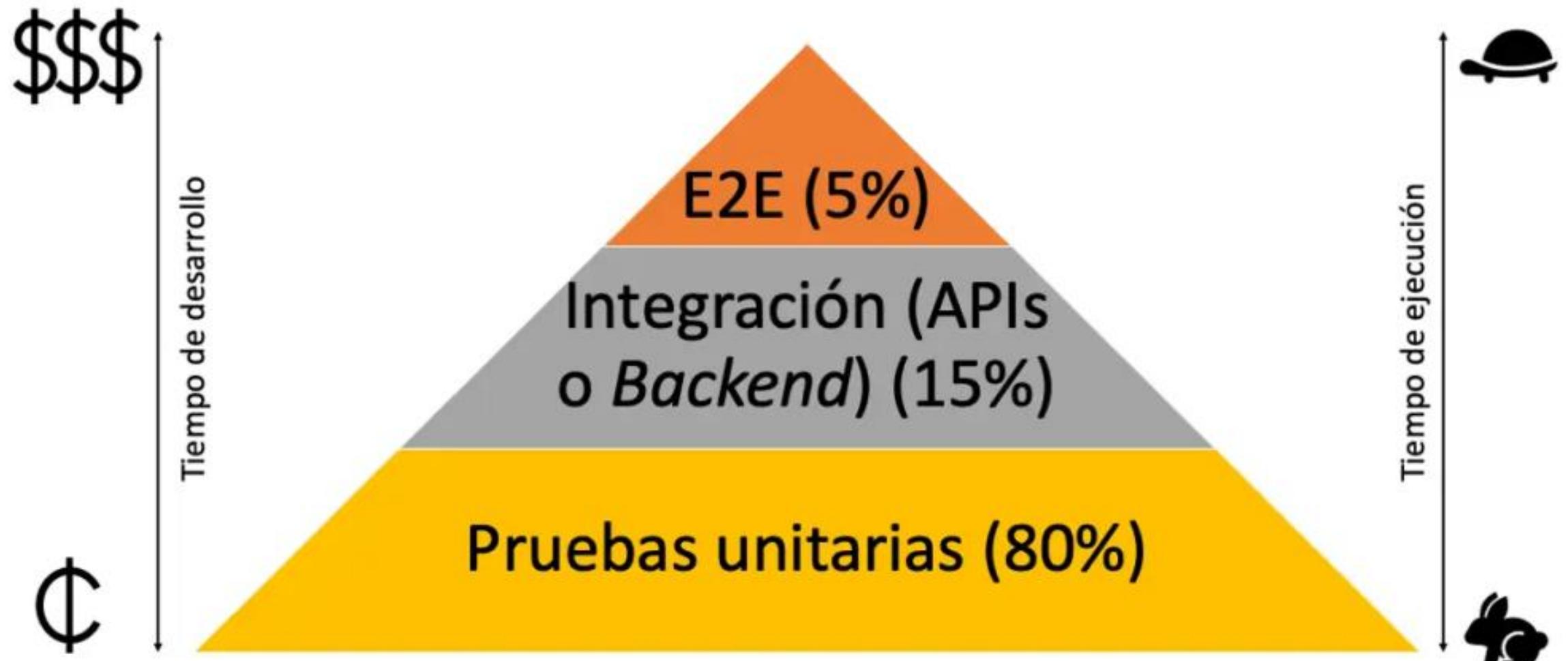
feat: dynamic directive arguments for v-bind and v-on

refactor: extend dom-props update skip to more attributes

fix: fix checkbox event edge case in Firefox

test: fix tests in IE/Edge

refactor: simplify some logic





Unit testing



Integration testing



Functionality testing

# mockito



# ¿POR QUÉ UTILIZARLO?

- Permite escribir y ejecutar tests unitarios de código integrado por varios componentes.
- Simula el comportamiento de componentes (mock, spy).
- Proporciona rapidez en las pruebas.
- Útil para seguir el paradigma TDD/BDD.
- Ejemplos de uso: Conexiones con BD. Servicios web. Clases de lenta ejecución. Clases con side-effects. Clases con un comportamiento indefinido.



# MOCKITO BDD



Mockito permite basarnos en el comportamiento de otros componentes:



Dado que (Given): Preparación estado inicial.



Cuando (When): Se invoca al método.



Entonces (Then): Validamos el comportamiento esperado

# PRIMEROS TESTS

```
@Test  
Run Test | Debug Test | ✓  
void our_first_test_with_mockito() {  
    // Creamos el objeto ficticio.  
    List<String> first_mock = mock(ArrayList.class);  
  
    // Simulamos el comportamiento  
    when(first_mock.get(0)).thenReturn("first_element");  
  
    String first_element = first_mock.get(0);  
  
    // Verificamos  
    assertEquals("first_element", first_element);  
    verify(first_mock).get(0);  
}
```

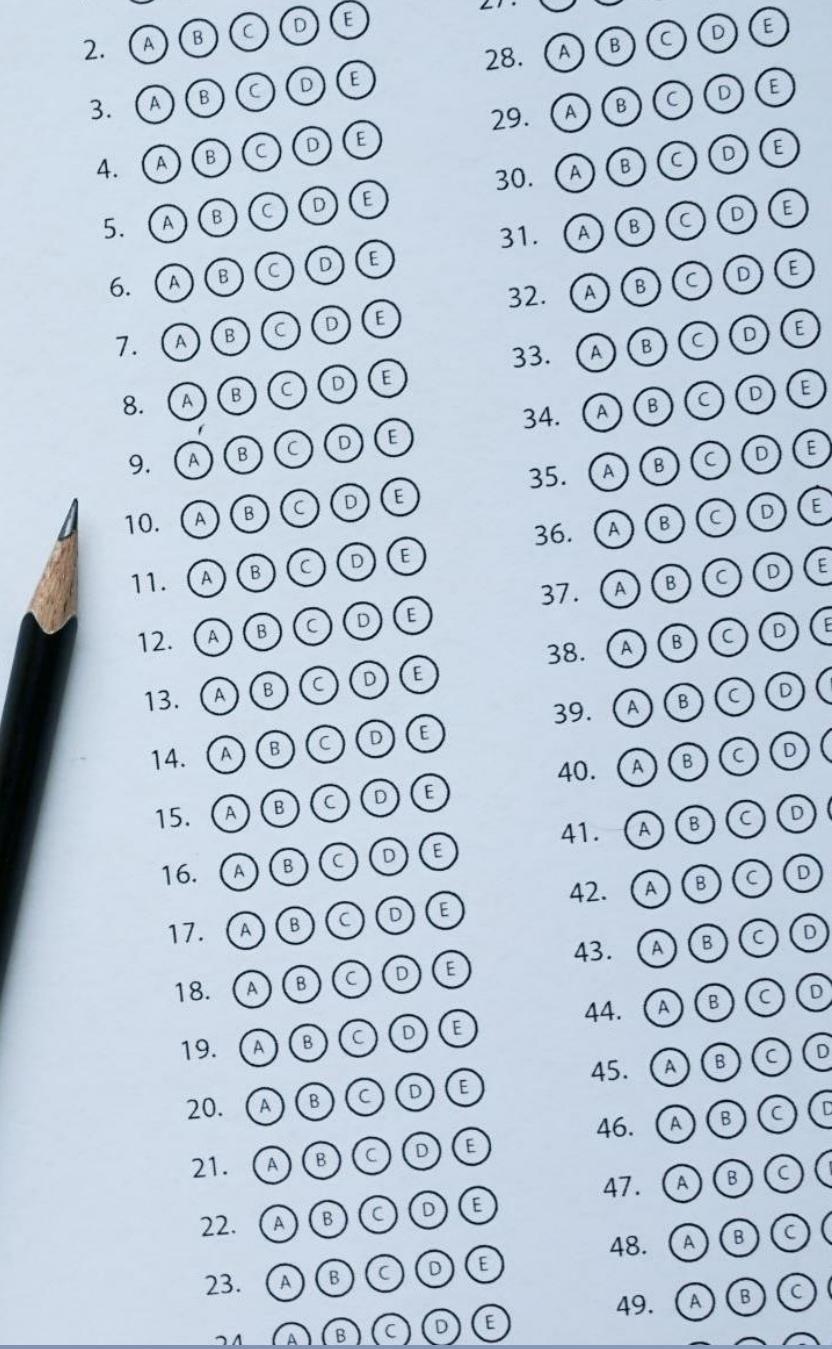
# ARGUMENT MATCHERS

- Los ArgumentMatchers de Mockito permiten:
- Verificar argumentos con los que son llamados métodos de los mocks.
- Simular el comportamiento de un componente.
- eq() any(), anyInt(), anyString()... isNull(), isNotNull(), isA(Class c)

A blackboard filled with mathematical calculations and formulas. At the top, there is a complex expression involving summation, multiplication, and division. Below it, a circle with radius 'c' is shown, along with a right triangle with legs 'x' and 'y'. Various equations are written, including  $x^2 + y^2 = c^2$ ,  $c(x, y) \left\{ \begin{array}{l} xy = c \\ cx - cy = 0 \\ 2\pi = c \end{array} \right.$ , and a large bracketed equation involving  $\frac{4x}{y} + \frac{y^2 + 3^2}{c}$ . Further down, there is a calculation involving  $384 + n^{av}$  and  $x^2 + 34$ . On the left, there is a summation formula  $\sum N^{30} \cdot x - \frac{1}{2} [g_{64} + x]$  with  $y=14!$  above it. At the bottom, there is a diagram of a triangle with vertices labeled A, B, and C, and a formula  $B = 9 + x^2 +$ .

# VERIFY

- Método estático.
- Permite testear la ejecución de un mock.
- `verify(mock, [times(int number)]).método()`
- `verify(mock, never()).método()`
- `verifyNoInteractions()`
- `verify(mock, {atLeast(int), atMost(int), atLeastOnce(), atMostOnce()})`



# MOCK VS SPY



# PRUEBAS DE RENDIMIENTO





Test Plan

- User Defined Variables
- HTTP Request Defaults
- HTTP Cookie Manager

Thread Group

- View Results Tree

HTTP(S) Test Script Recorder

Name: HTTP(S) Test Script Recorder

Comments:

State

Start Stop Restart

Global Settings

Port: 8888 HTTPS Domains:

Test Plan Creation Requests Filtering

Test plan content

Target Controller: Use Recording Controller

Grouping: Put each group in a new transaction controller  Capture HTTP Headers  Add Assertions  Regex matching

HTTP Sampler settings

Transaction name

Create new transaction after request (ms):

Retrieve All Embedded Resources  Follow Redirects

Redirect Automatically

Use KeepAlive

Type:

# DEMO

```
▶ packages  
▶ scripts  
▶ src  
▶ test  
▶ types
```

.babelrc.js

.editorconfig

.eslintignore

.eslintrc.js

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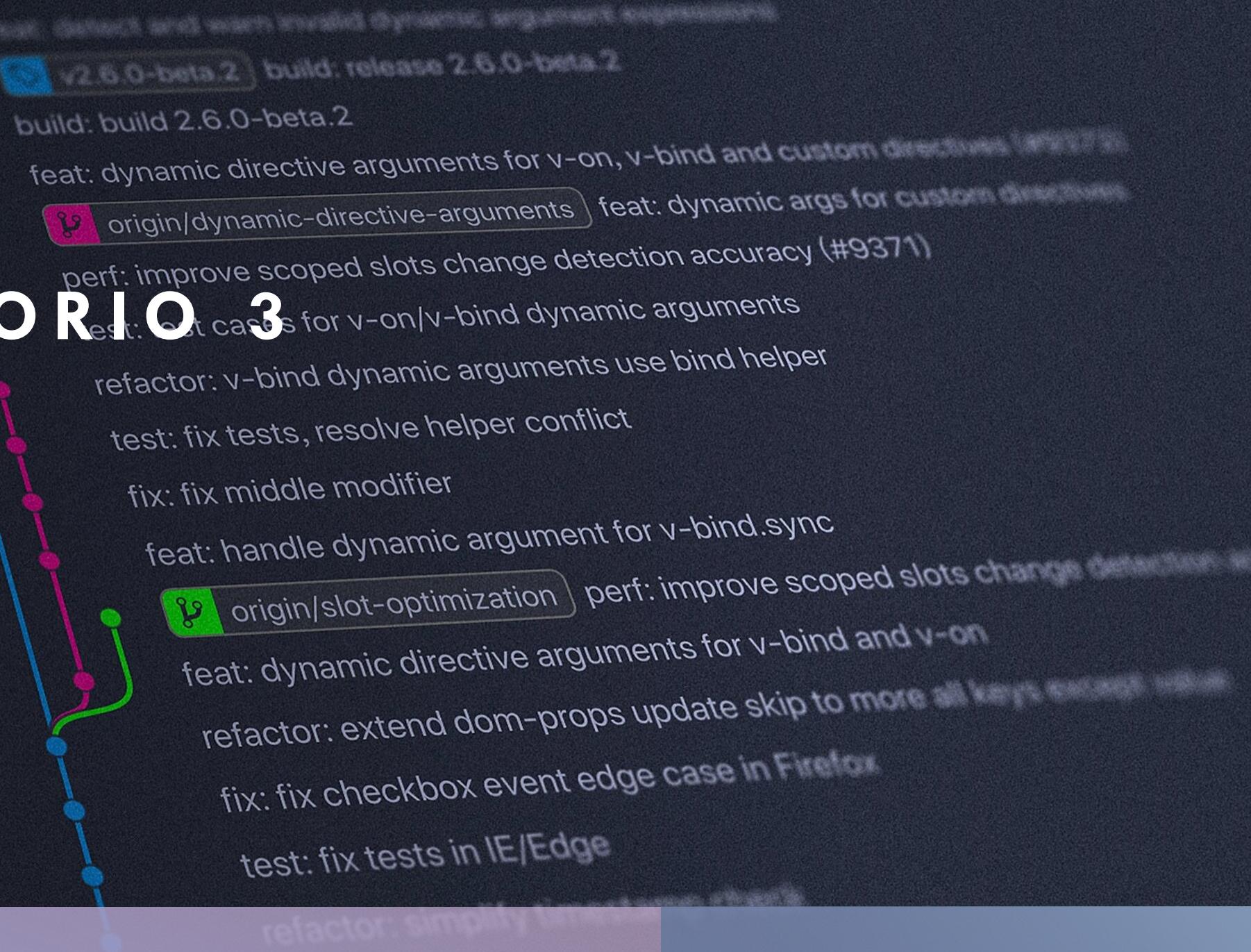
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test: fix tests in IE/Edge

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# LABORATORIO 3

```
▶ README.md  
▶ .gitignore  
▶ .eslintrc.js  
▶ .flowconfig  
▶ .gitignore  
▶ .babelrc.js  
▶ .editorconfig  
▶ .eslintignore  
▶ BACKERS.md  
▶ packages  
▶ scripts  
▶ src  
▶ test  
▶ types
```



[Tests & Reports](#)[+ Add Test](#)[? Help](#)

These reports are a result of running a test named: <http://demo.blazemeter.com/drupal6/> on Mon, 06/17/2013 - 13:39.

[Print](#)[Tweet](#)[LOAD RESULTS](#)[ERRORS \(1139\)](#)[MONITORING](#)[REAL BROWSER](#)[PAGE SPEED](#)[LOGS](#)

This report is a result of spawning numerous servers in the cloud, executing a **JMeter** test-script using distributed **JMeter** architecture. All graphs represent KPIs (Key Performance Indicators) measured during the load.

[ALL](#)[1360236271\\_88e](#)[\\_user\\_login](#)[1360236270\\_88e](#)[1360236745\\_title](#)[Active Users](#)[Max Users](#)[ALL\\_Errors](#)[ALL\\_Latency](#)[Max Users](#)

600

28,000

[Response Time](#)[Active Users](#)[Max Users](#)[Response Time](#)[Latency](#)

450

21,000

[Latency](#)[Hits/s](#)[seconds / errors](#)

300

14,000

[Hits](#)[KB/s](#)[Support](#)

# DEMO

```
▶ packages  
▶ scripts  
▶ src  
▶ test  
▶ types
```

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.editorconfig

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**Definir** las pruebas de  
aceptación



Pruebas de  
aceptación



**Aplicar** las pruebas de  
aceptación



**Corregir**, definir  
nuevas historias



Selenium



Selenium IDE



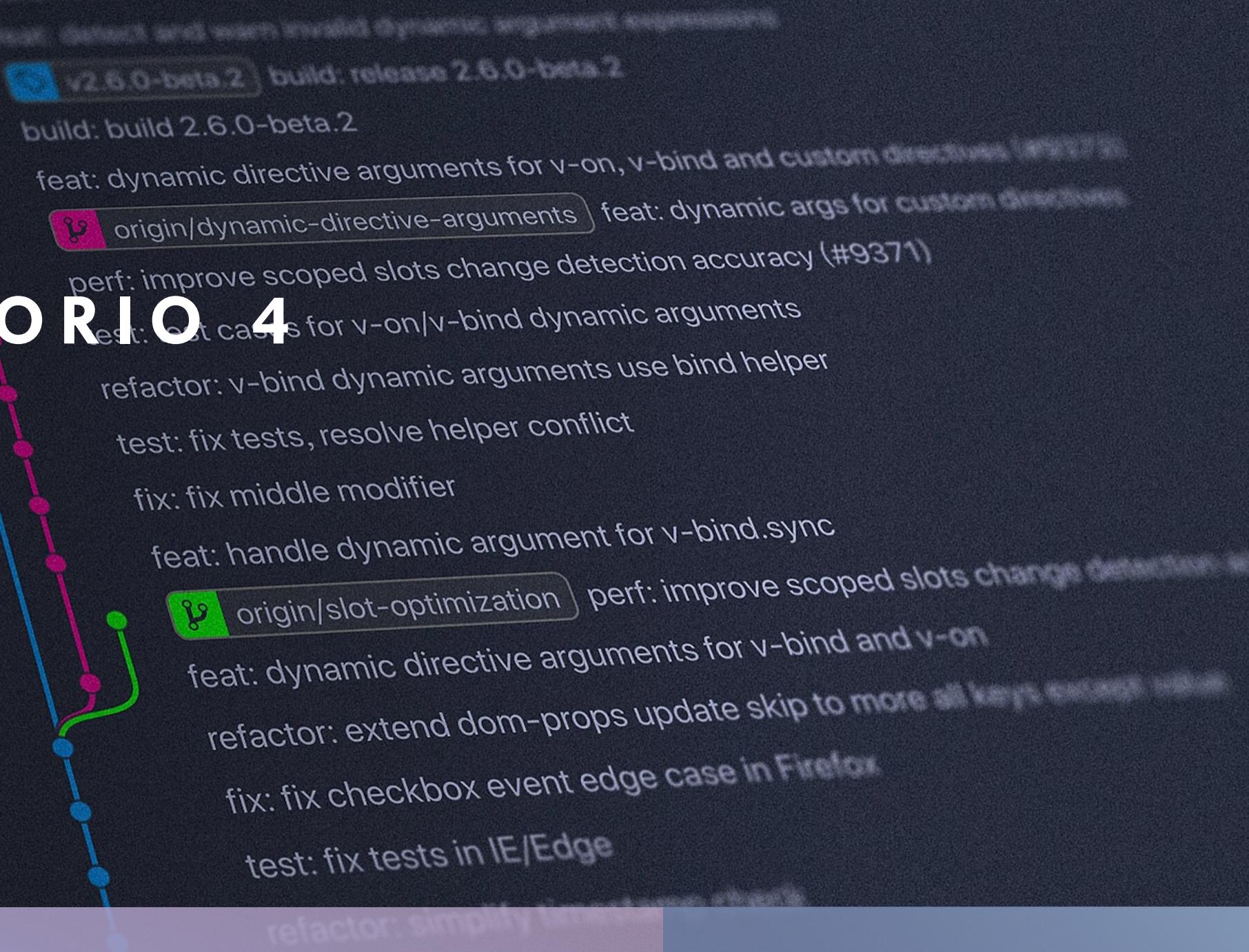
Selenium  
WebDriver



Selenium Grid

# LABORATORIO 4

```
▶ README.md  
▶ .gitignore  
▶ .eslintrc.js  
▶ .flowconfig  
▶ .gitignore  
▶ .babelrc.js  
▶ .editorconfig  
▶ .eslintignore  
▶ .eslintrc.js  
▶ BACKERS.md  
▶ packages  
▶ scripts  
▶ src  
▶ test  
▶ types
```



SeleniumConf Chicago 2023 is a wrap! [Watch the Videos](#)

## Downloads

Below is where you can find the latest releases of all the Selenium components.  
You can also find a list of previous releases, source code, and additional information for Maven users.

### Selenium Clients and WebDriver Language Bindings [🔗](#)

In order to create scripts that interact with the Selenium Server (Remote WebDriver) or create local Selenium WebDriver scripts, you need to make use of language-specific client drivers.

While language bindings for [other languages exist](#), these are the core ones that are supported by the main project hosted on GitHub.

**C#**  
Stable: [4.13.1 \(September 25, 2023\)](#)  
[Changelog](#)  
[API Docs](#)

**Ruby**  
Stable: [4.13.1 \(September 25, 2023\)](#)  
[Changelog](#)  
[API Docs](#)

**Java**  
Stable: [4.13.0 \(September 25, 2023\)](#)  
[Changelog](#)  
[API Docs](#)

**Python**

**JavaScript**

# INSTALACION

Selenium Test Cases - Demo\_Test/Test/First.java - Eclipse IDE

File Edit Source Refactor Search Project Run Window Help

Package Explorer Task List Quick Access

Demo\_Test

src

(default package)

First.java

JRE System Library [JavaSE-1.8]

Referenced Libraries

client-combined-3.13.0.jar - D:\backup\Selenium

client-combined-3.13.0-sources.jar - D:\backup\Selenium

byte-buddy-1.8.3.jar - D:\backup\Selenium Java

commons-codec-1.14.jar - D:\backup\Selenium

commons-exec-1.3.jar - D:\backup\Selenium Java

commons-logging-1.2.jar - D:\backup\Selenium

guava-23.0-jre.jar - D:\backup\Selenium Java\libs

guava-23.0.jar - D:\backup\Selenium Java\libs

httpclient-4.5.5.jar - D:\backup\Selenium Java\libs

httpcore-4.4.9.jar - D:\backup\Selenium Java\libs

okhttp-3.10.0.jar - D:\backup\Selenium Java\libs

okio-1.14.1.jar - D:\backup\Selenium Java\libs

First.java (1)

```
1 public class First {  
2     public static void main(String[] args) {  
3         // TODO Auto-generated method stub  
4     }  
5 }  
6  
7  
8  
9  
10 }  
11
```

Task List

Find All Activate

Outline

First

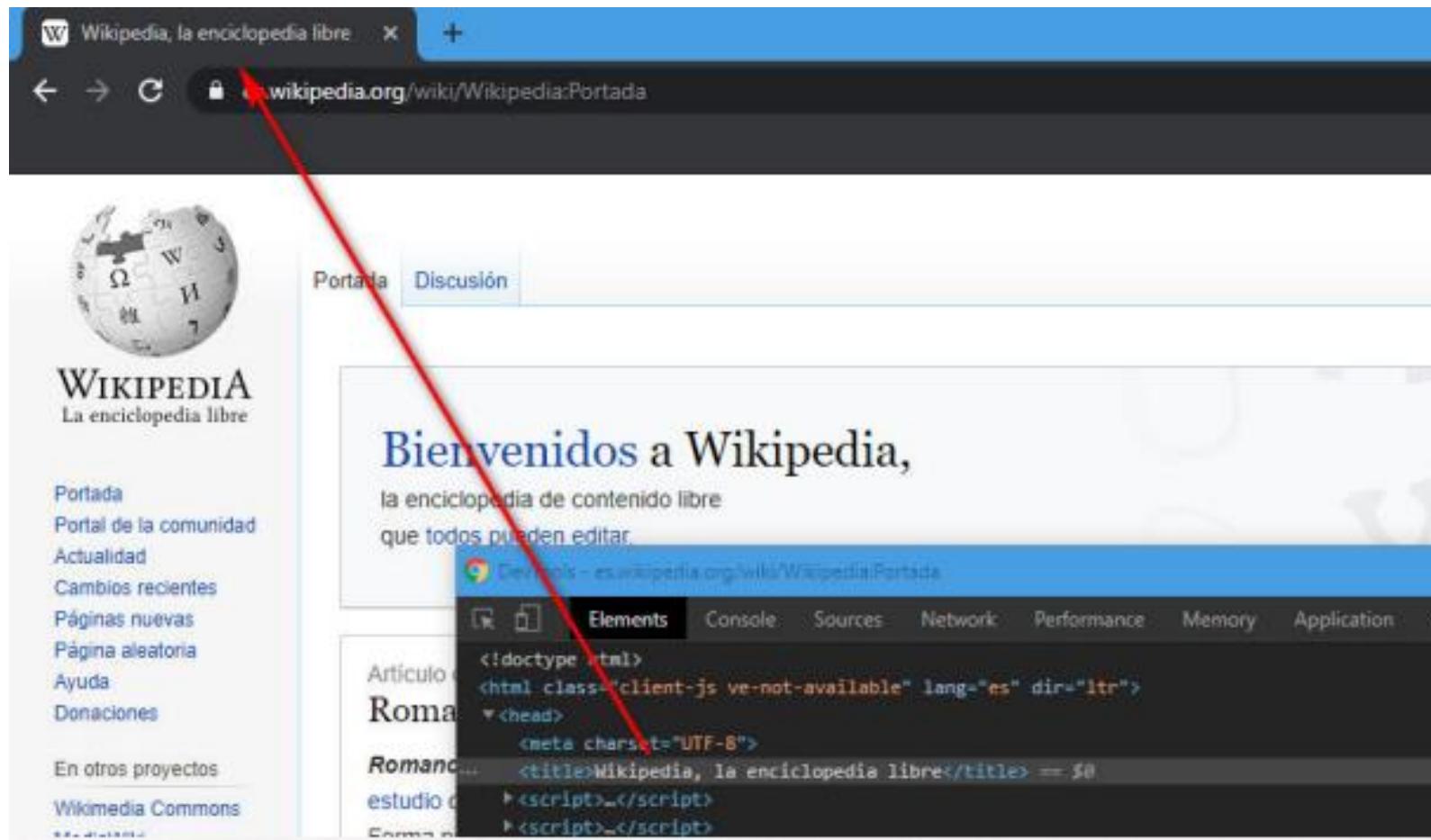
mainString(): void

Problems Javadoc Declaration

Items

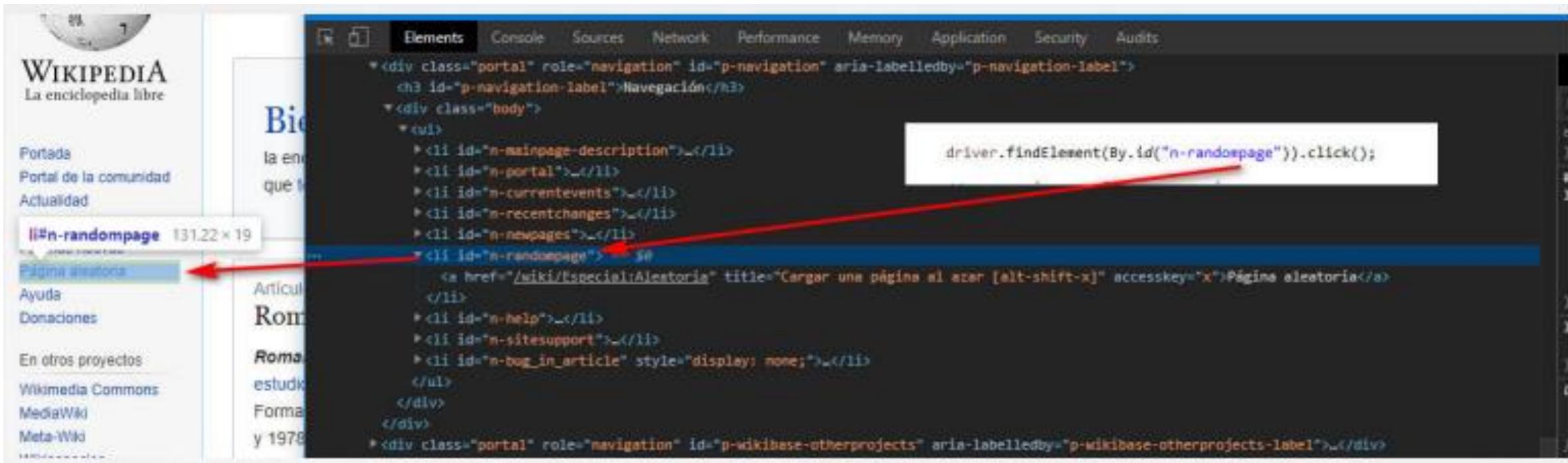
Description	Resource	Path	Location	Type

# PRIMEROS PASOS



# ELEMENTOS DE UNA PAGINA WEB

Variación	Descripción	Muestra
By.className	Encuentra elementos basados en el valor del atributo «class»	findElement(By.className(«algúnnombrecrase»))
By.cssSelector	Encuentra elementos basados en el motor selector CSS subyacente del controlador	findElement(By.cssSelector(«input#email»))
By.id	localiza los elementos por el valor de su atributo «ID»	findElement(By.id(«algunID»))
By.linkText	Encuentra un elemento link con el texto exacto que muestra	findElement(By.linkText(«AlgunTexto»))
By.name	Localiza los elementos por el valor del atributo «Name»	findElement(By.name(«AlgunName»))
By.partialLinkText	Localiza elementos que contienen el texto de enlace dado	findElement(By.partialLinkText(«REG»))
By.tagName	Localiza elementos por su nombre de etiqueta	findElement(By.tagName(«etiqueta»))
By.xpath	Localiza elementos mediante XPath	findElement(By.xpath(«rutacpath»))



B Y. I D



WIKIPEDIA  
La enciclopedia libre

Portada  
Portal de la comunidad  
Actualidad

86.73 × 14

Página aleatoria

Ayuda

Donaciones

En otros proyectos

Wikimedia Commons

MediaWiki

Meta-Wiki

Wikispecies

Bien

la enciclo  
que todo

Artículo d

Roman

Romance

estudio de

Forma pa

y 1978. S

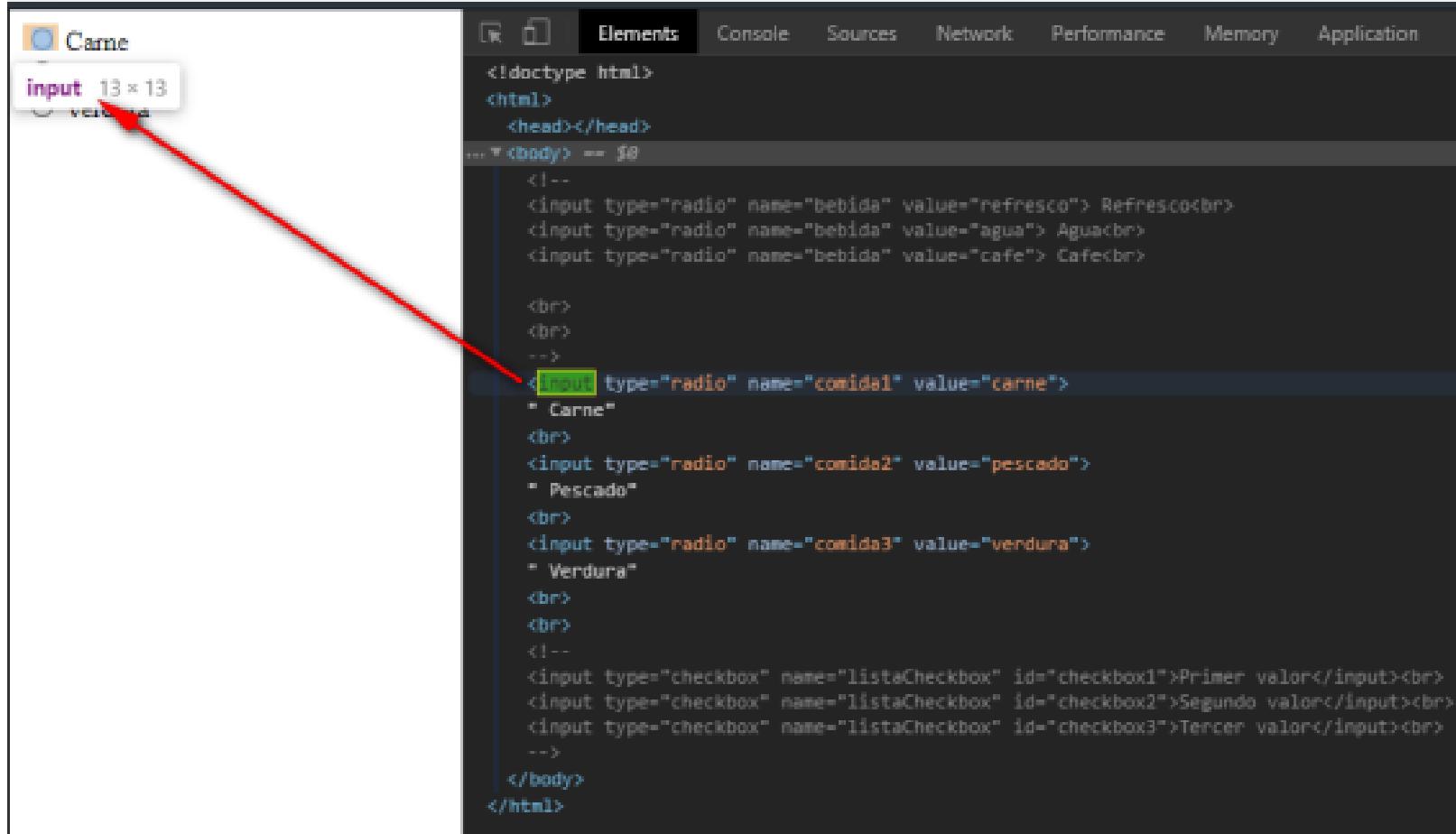
lta-----

```
> <div id="mw-head">.</div>
* <div id="mw-panel">
  > <div id="p-logo" role="banner">.</div>
  * <div class="portal" role="navigation">
    <h3 id="p-navigation-label">Navegación</h3>
    <ul>
      > <li id="n-mainpage-description">.</li>
      > <li id="n-portal">.</li>
      > <li id="n-currentevents">.</li>
      > <li id="n-recentchanges">.</li>
      > <li id="n-newpages">.</li>
      > <li id="n-randompage">
          > <a href="/wiki/Especial:Aleatoria" title="Cargar una página al azar [alt-shift-x]" accesskey="x">Página aleatoria</a> == $0
        </li>
      > <li id="n-help">.</li>
      > <li id="n-sitesupport">.</li>
      > <li id="n-bug_in_article" style="display: none;">.</li>
    </ul>
  </div>
</div>
```

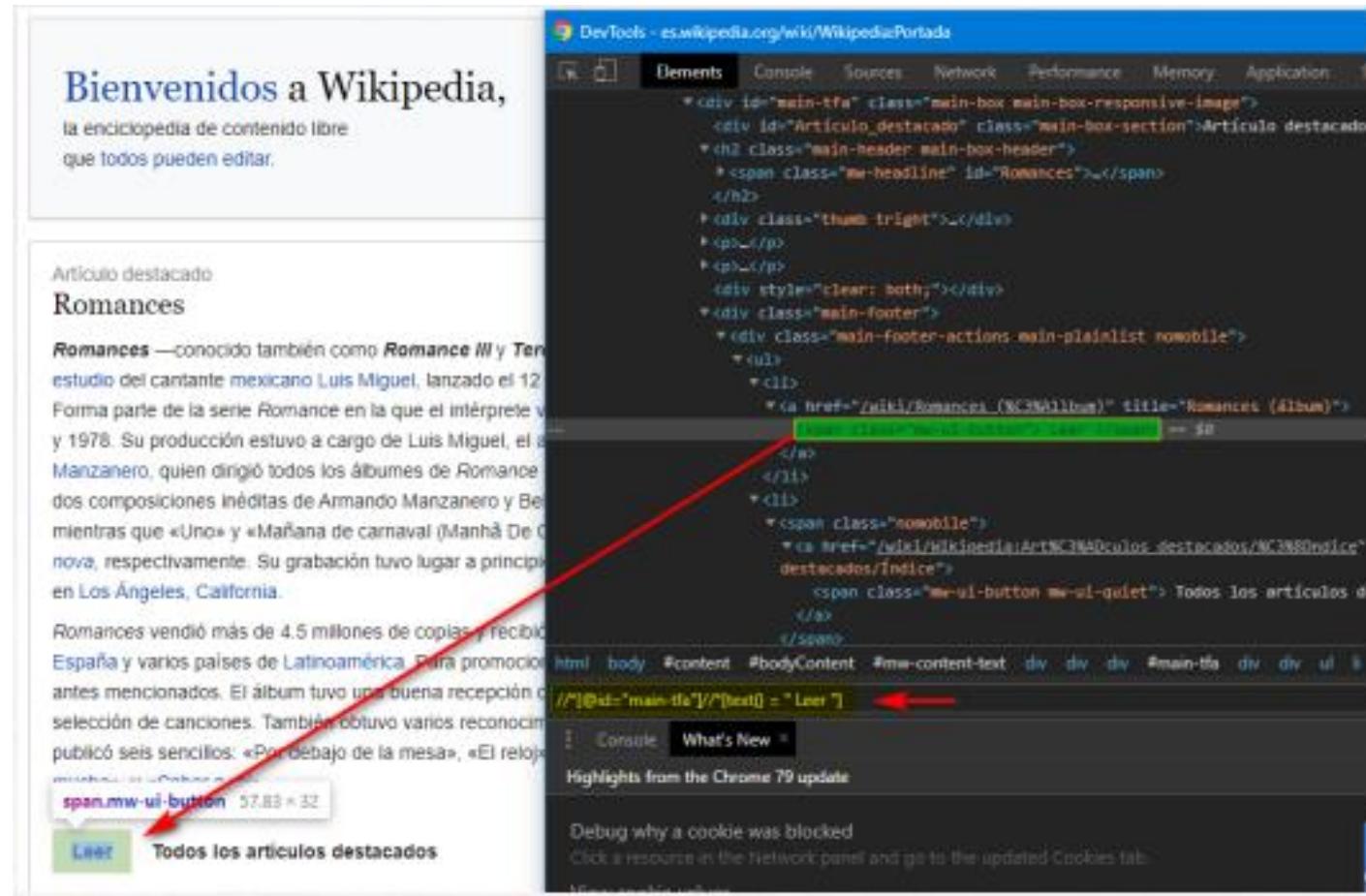
By arg0  
driver.findElement(By.linkText("Página aleatoria"))

//EXTRACCIÓN DEL TÍTULO linkText(String linkText) : By - By

BY.LINKTEXT



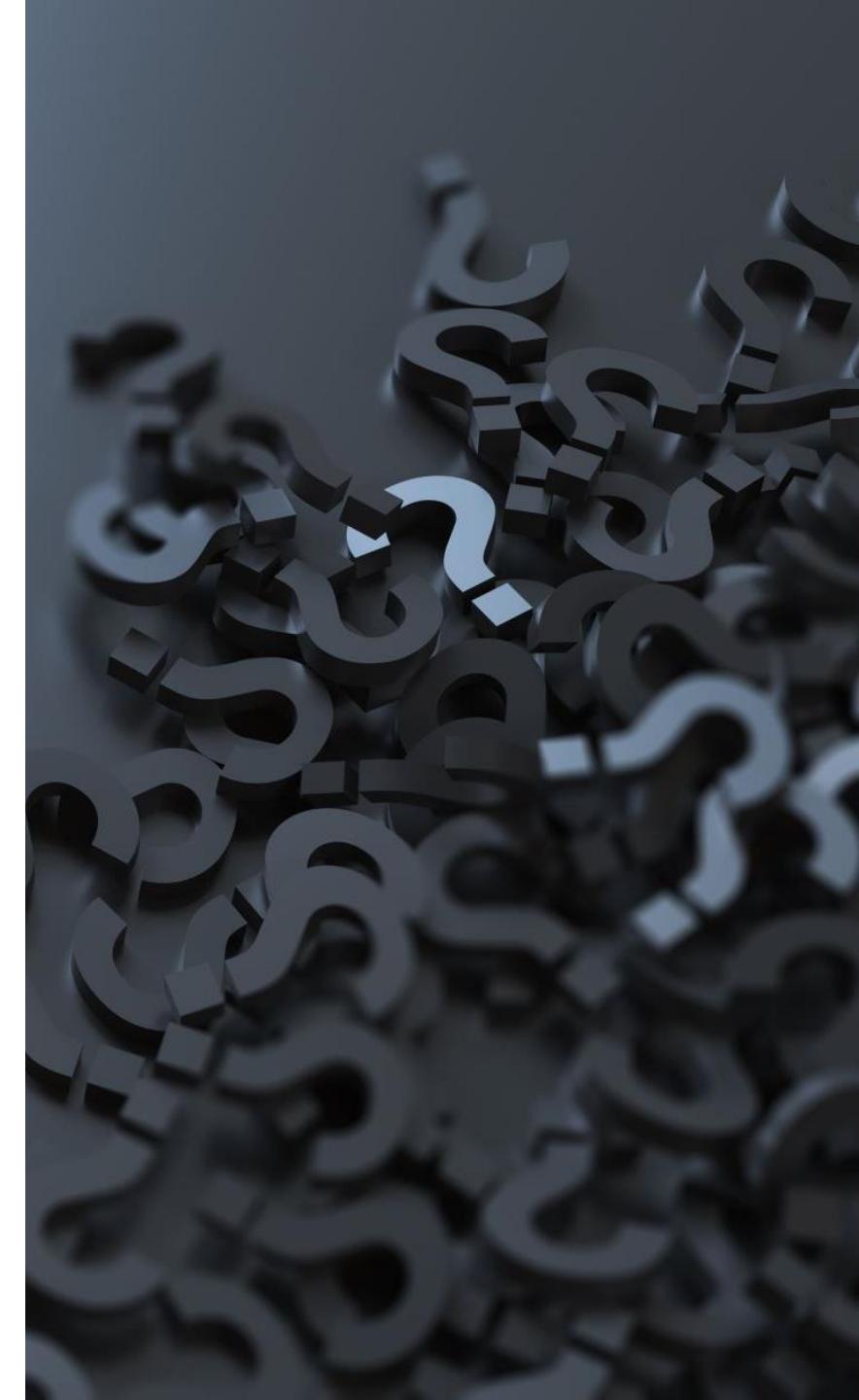
BY.TAGNAME

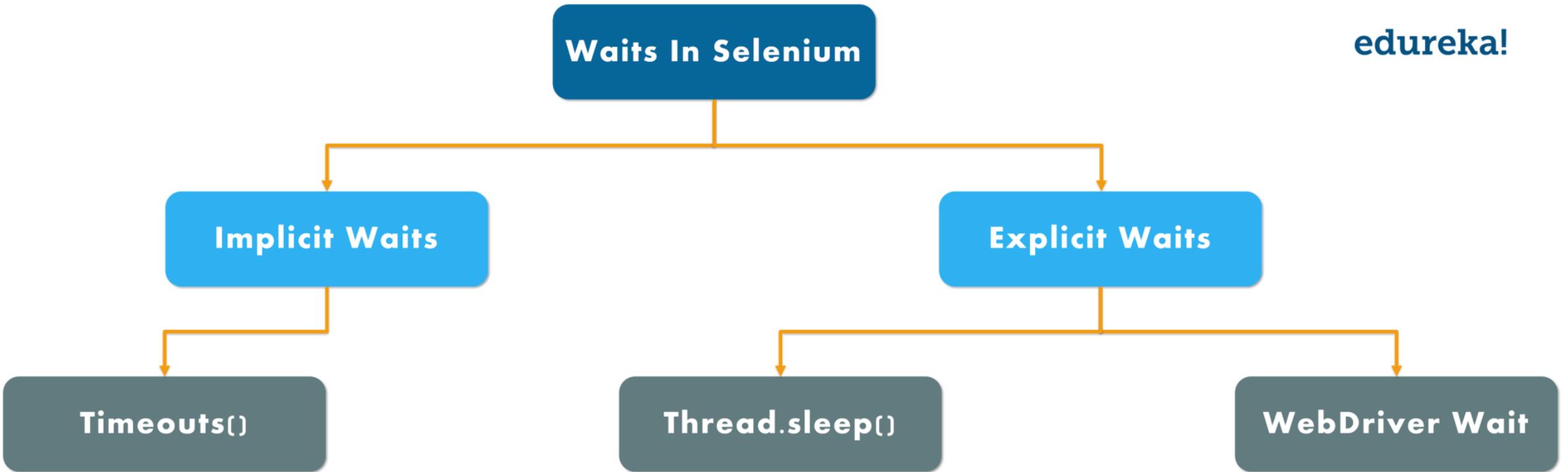


# BY.XPATH

# ¿POR QUÉ UTILIZAR MECANISMOS DE ESPERA SOBRE LOS ELEMENTOS WEB?

- Las páginas webs cargan sus recursos de manera asíncrona.
- Esto implica que los elementos no cargan en el mismo orden ni al mismo tiempo siempre.
- Debido a ello, nosotros necesitamos implementar mecanismos de espera que aguarden a que el elemento que busquemos termine de cargar correctamente.
- En caso de no implementar dichos mecanismos, si Selenium no encuentra el elemento, devolverá un error “NoSuchElementException”.
- Aunque el primer impulso sea detener la ejecución del hilo durante un tiempo determinado “Thread.sleep(1000)”, esta manera de hacerlo es incorrecta.





TIPOS DE ESPERAS

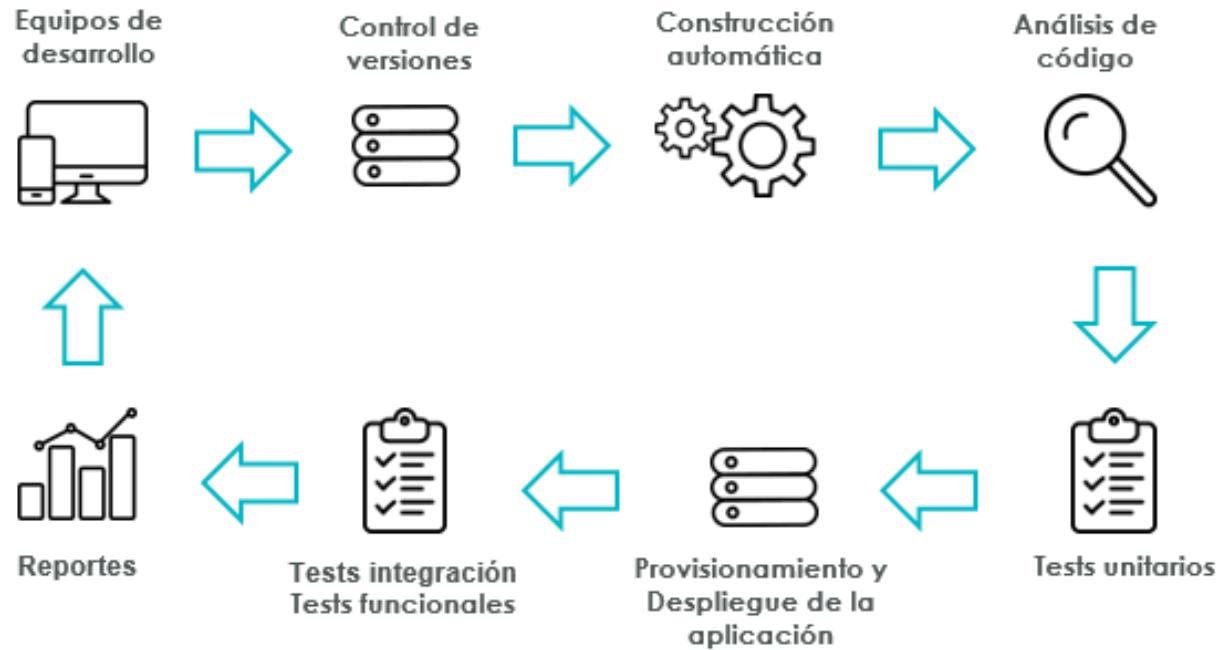


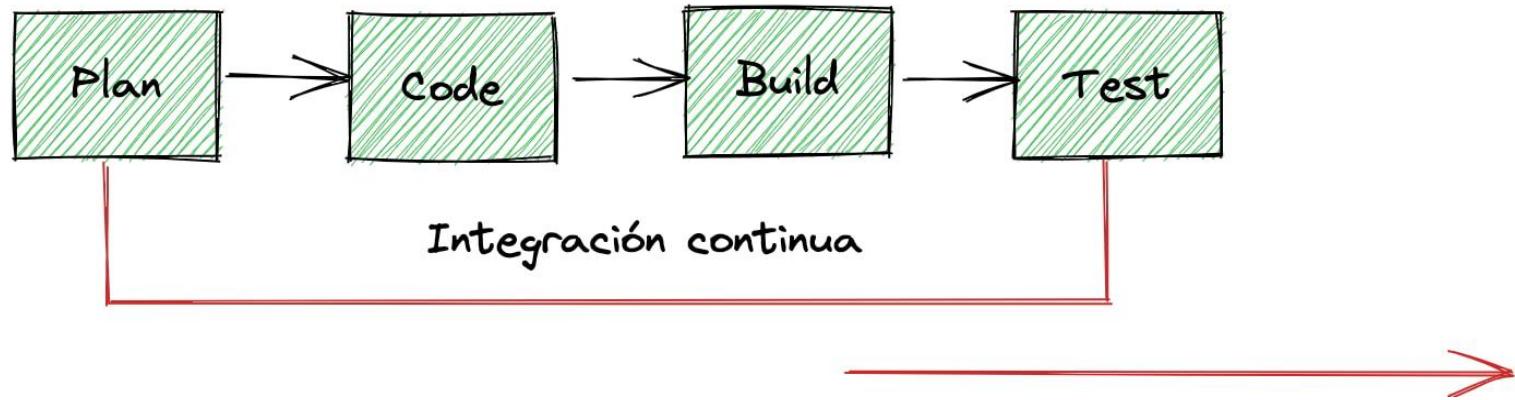
JUnit

TESTING

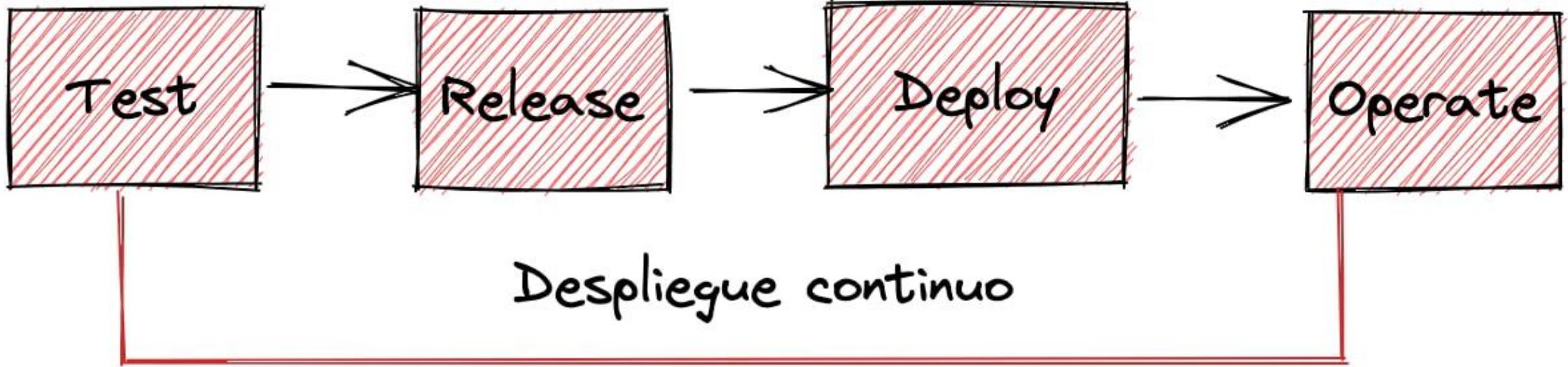
# Modulo 3: Jenkins

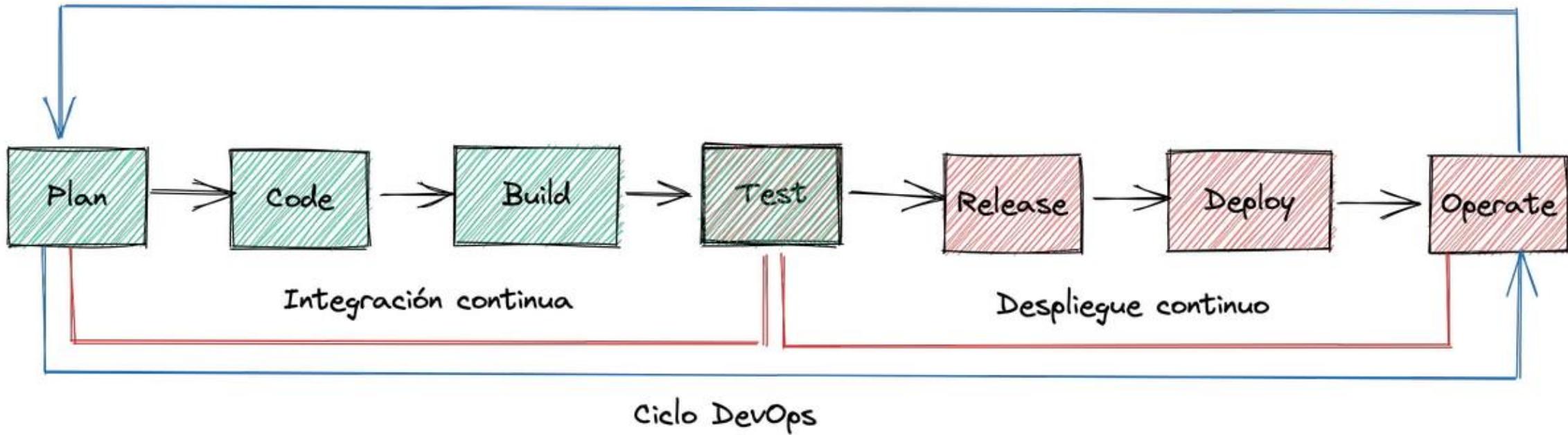
- Introducción
- Instalación y configuración
- Configuración de trabajos de ejecución
- Interfaz Git e integración con BitBucket
- Invocación de comandos y scripts externos
- Integración con Maven
- Notificaciones





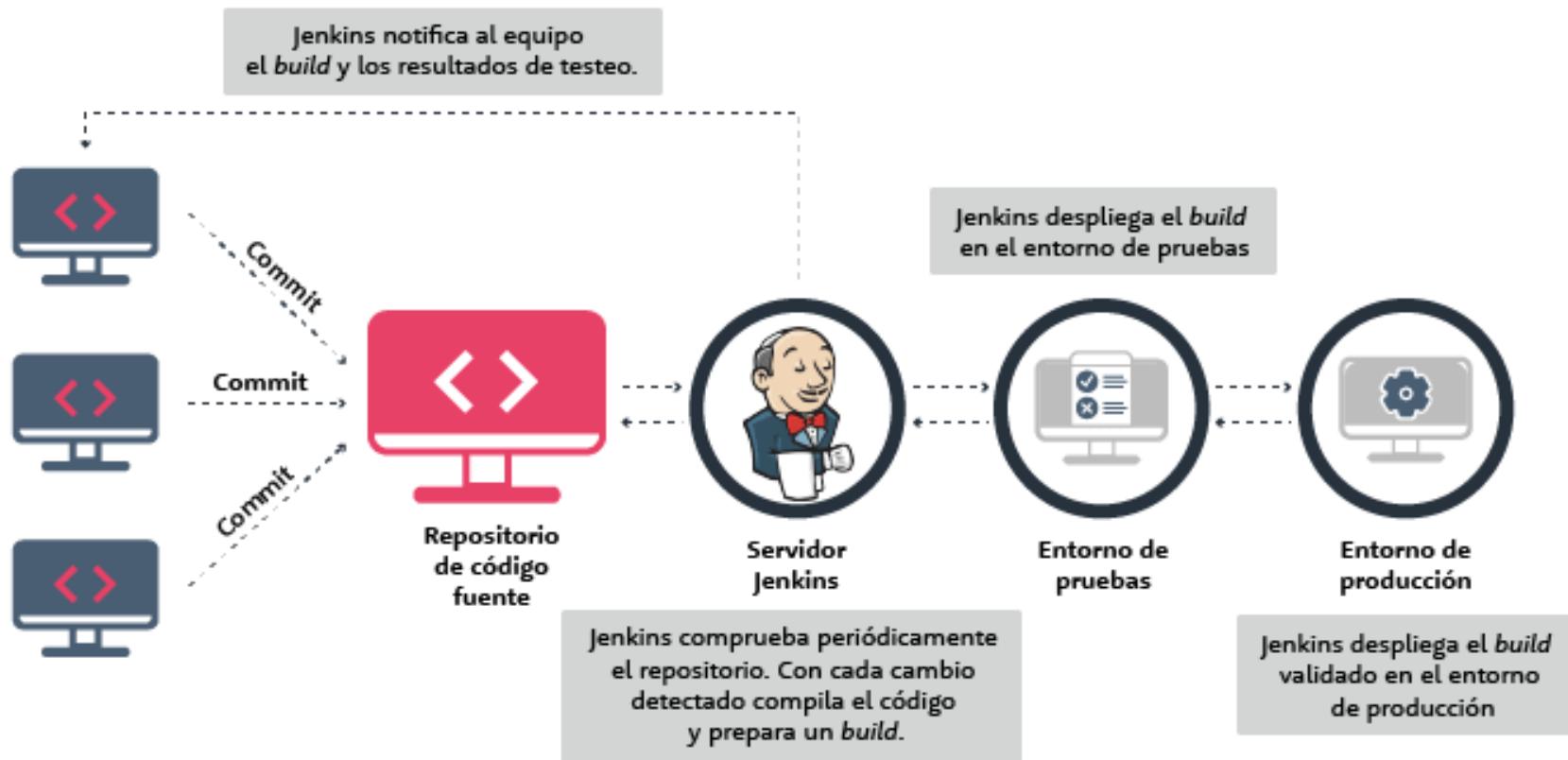
# ETAPAS



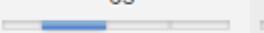




# Jenkins



# Instalación y configuración

Compilar	Test	Construcción	Despliegue
3s	6s	6s	5s
			
3s	5s failed		
3s	6s	5s	5s



Jenkins

Pipelines Administration Logout

dropspace / whimsy / master

Cancel Save

```
graph LR; Start((Start)) --> Build((Build)); Build --> BrowserTests((Browser Tests)); BrowserTests --> StaticAnalysis((Static Analysis)); StaticAnalysis --> Deploy((Deploy)); Deploy --> End(( ));
```

Choose step type

Find steps by name

- Shell Script
- Print Message
- Enforce time limit
- Retry the body up to N times
- Sleep
- Windows Batch Script
- Archive the artifacts
- Allocate node
- Allocate workspace
- Bind credentials to variables
- Catch error and set build result
- Change current directory