



# Git Rebase

For the brave and ~~fool~~ true!



# INTRODUCING MYSELF

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- **Filipe Mondaini**
  - From Rio de Janeiro, Brazil
- **Concrete - Acquired by Accenture on 2017**
- **Programmer for about 10 years**
  - Generalist: Python, JavaScript, Ruby, C#, Arduino
- **Used to be scared of Git Rebase, but not anymore.**

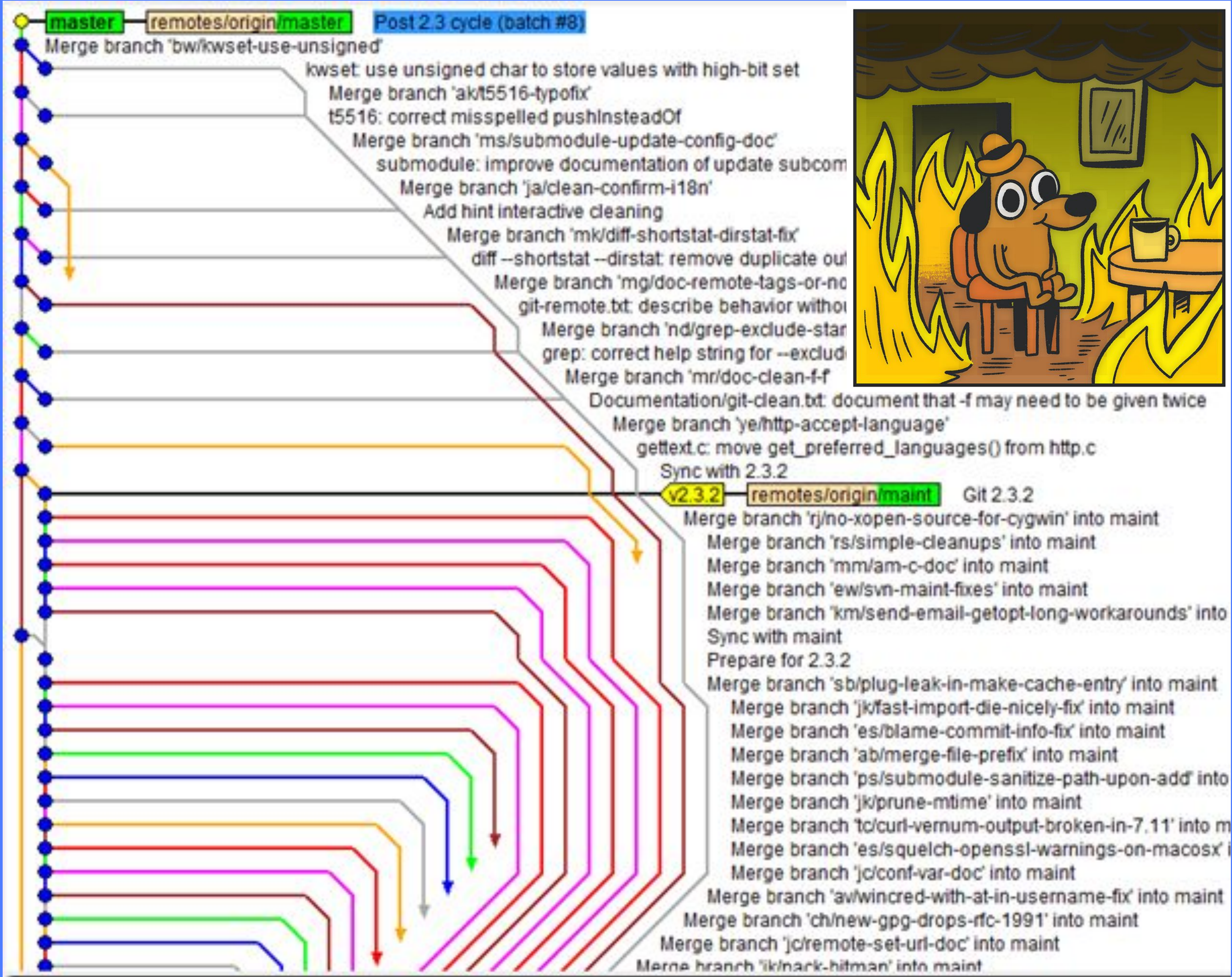
# REASON?

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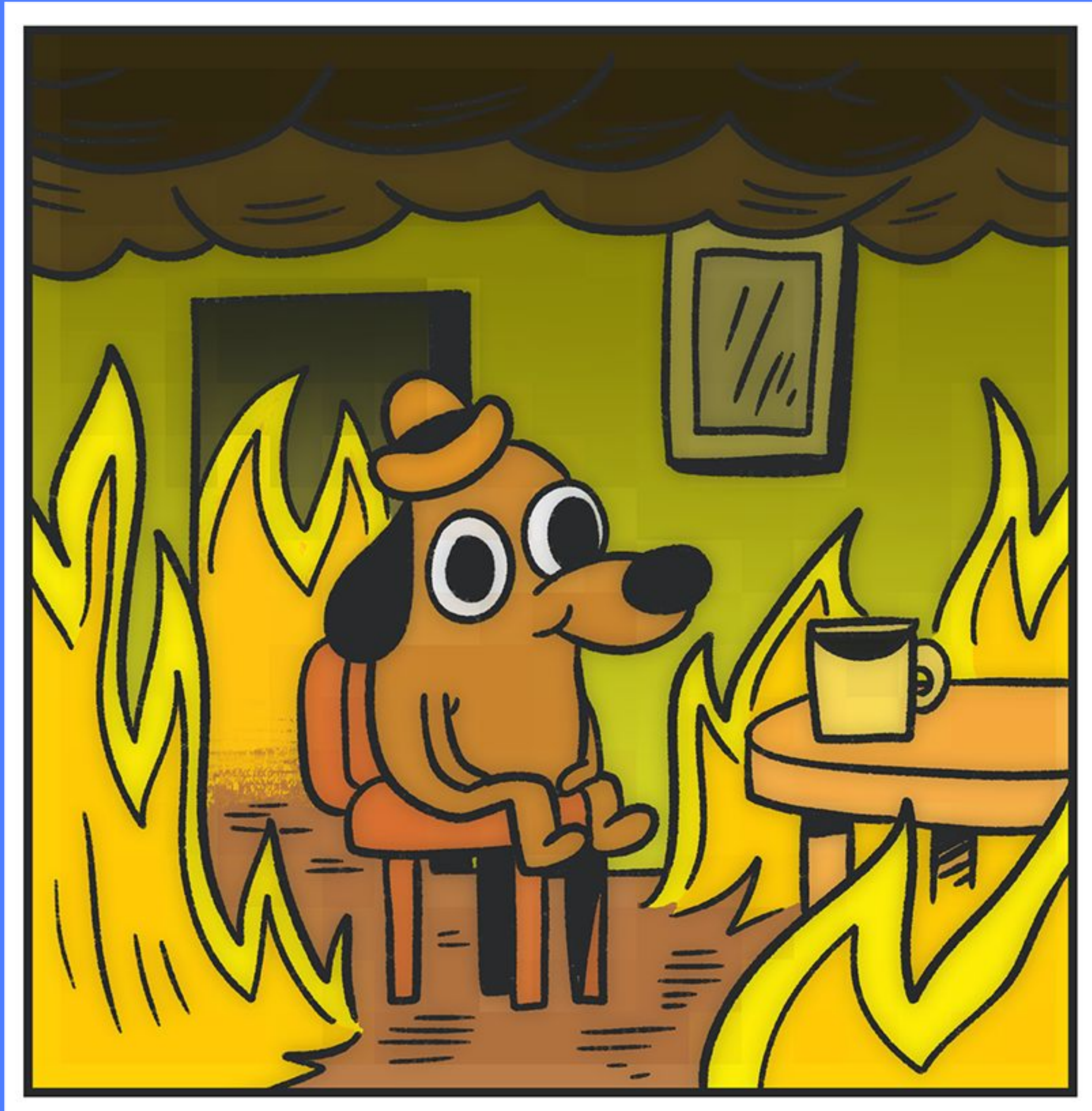
You are a new developer arriving to an existing project

- git clone
- read git log (or using any GUI)











## MERGE

### Fast Forward

True Merge

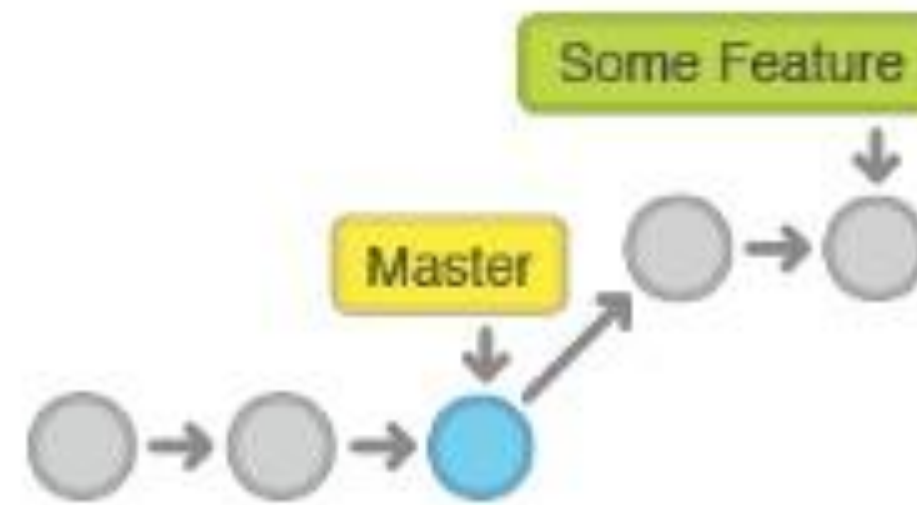
Merge Conflicts

Rebasing

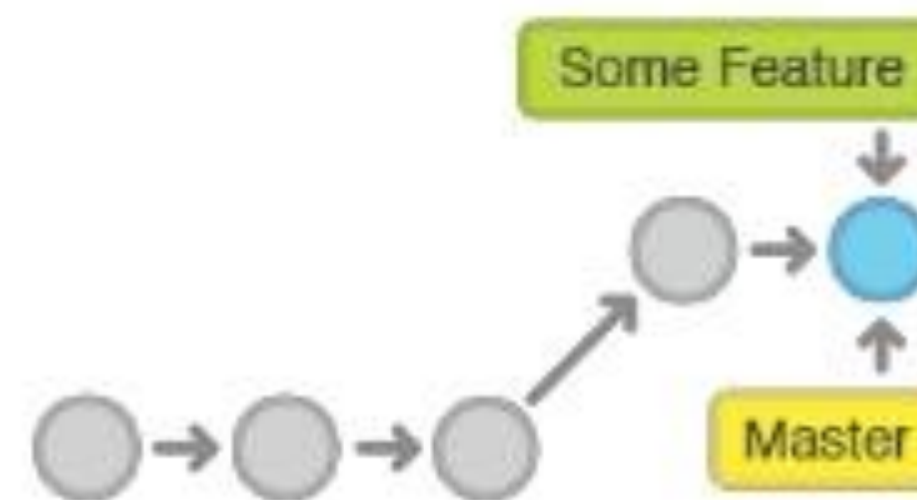
# Fast-Forward Merge Illustrated

## fast-forward merge

Before Merging

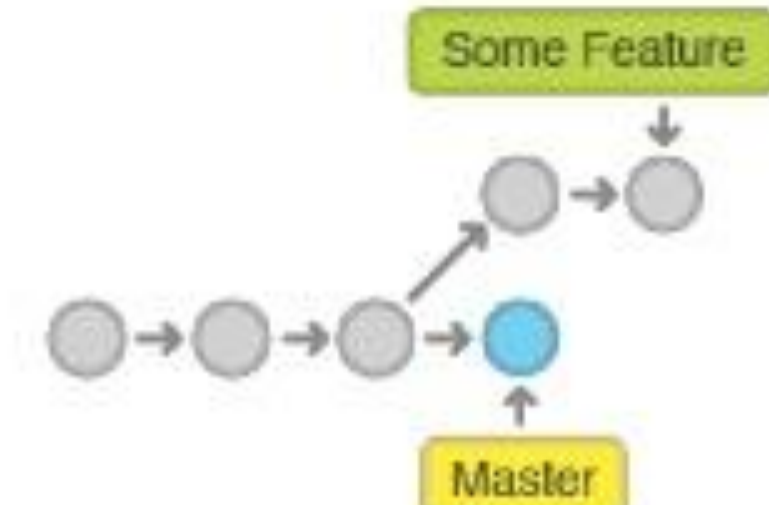


After a Fast-Forward Merge



## no-ff merge

Before Merging



After a 3-way Merge

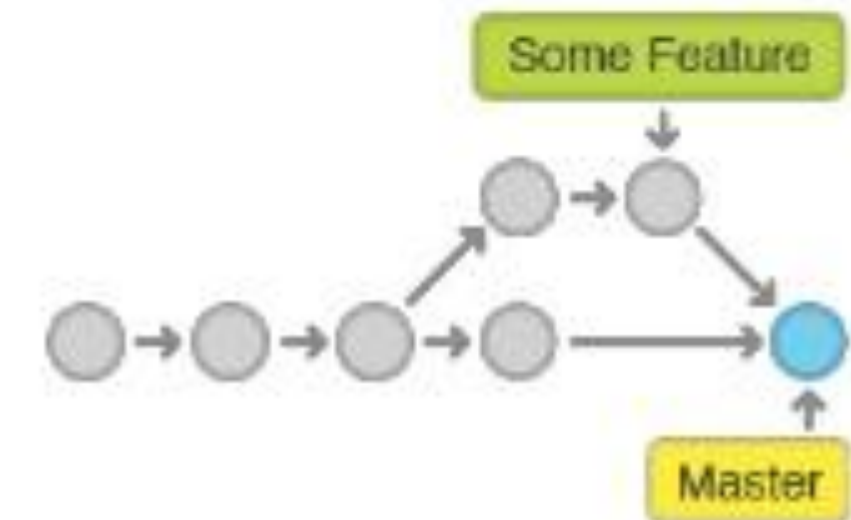


Image: <https://www.atlassian.com/git/tutorial/git-branches#!merge>

## MERGE

Fast Forward

True Merge

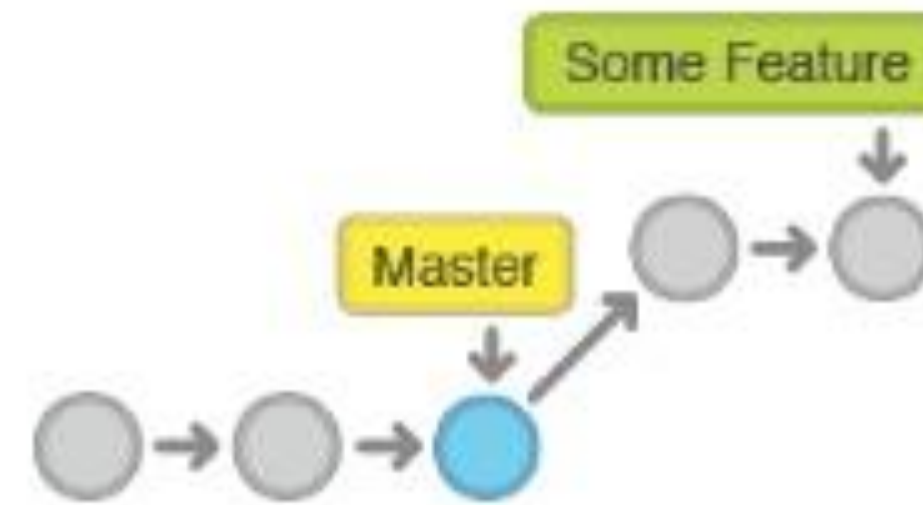
Merge Conflicts

Rebasing

# Fast-Forward Merge Illustrated

## fast-forward merge

Before Merging

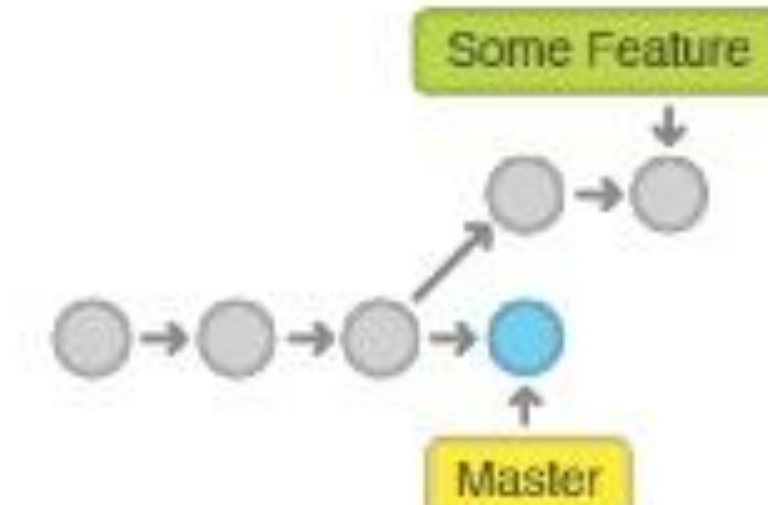


After a Fast-Forward Merge



## no-ff merge

Before Merging



After a 3-way Merge

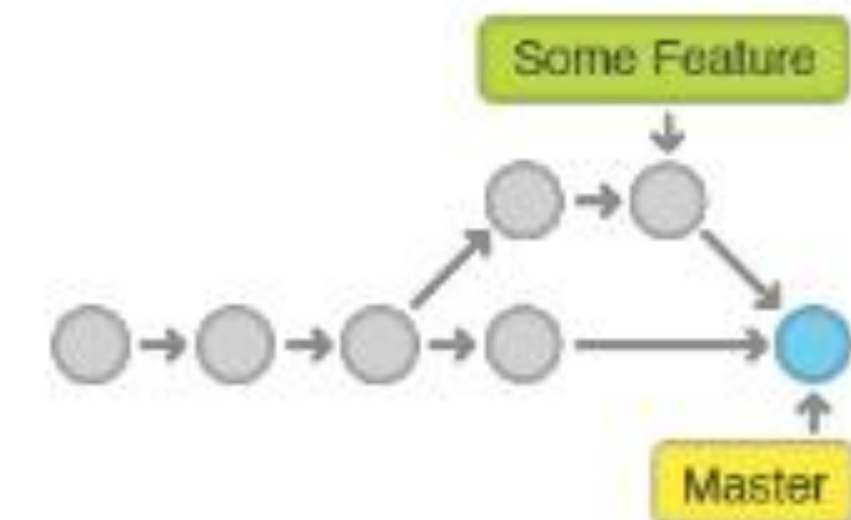


Image: <https://www.atlassian.com/git/tutorial/git-branches#!merge>



## MERGE

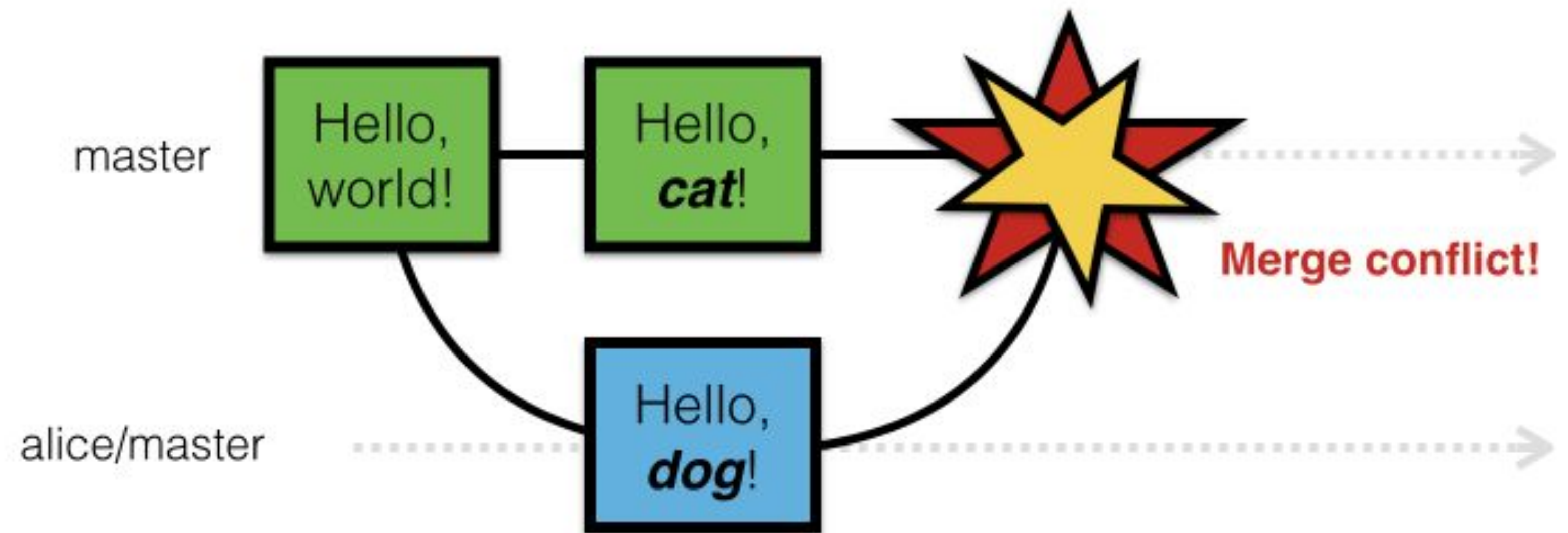
---

Fast Forward

True Merge

**Merge Conflicts**

Rebasing



Source: <https://developer.atlassian.com/blog/2015/01/a-better-pull-request/merge-conflict.png>

## MERGE

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Fast Forward

True Merge

Merge Conflicts

Rebasing

```
87
88     'gh-pages': {
89 <<<<<<< HEAD
90         options: {
91             base: 'site/build',
92             repo: 'git@github.com:bocoup/moebio_framework.git'
93         },
94         src: '**/*'
95     }
96     =====
97         options: {
98             base: 'site/build',
99             repo: 'git@github.com:bocoup/moebio_framework.git'
100         },
101         src: '**/*'
102     },
103
```

Source: [https://static.bocoup.com/blog/git-workflow/merge\\_conflict.png](https://static.bocoup.com/blog/git-workflow/merge_conflict.png)



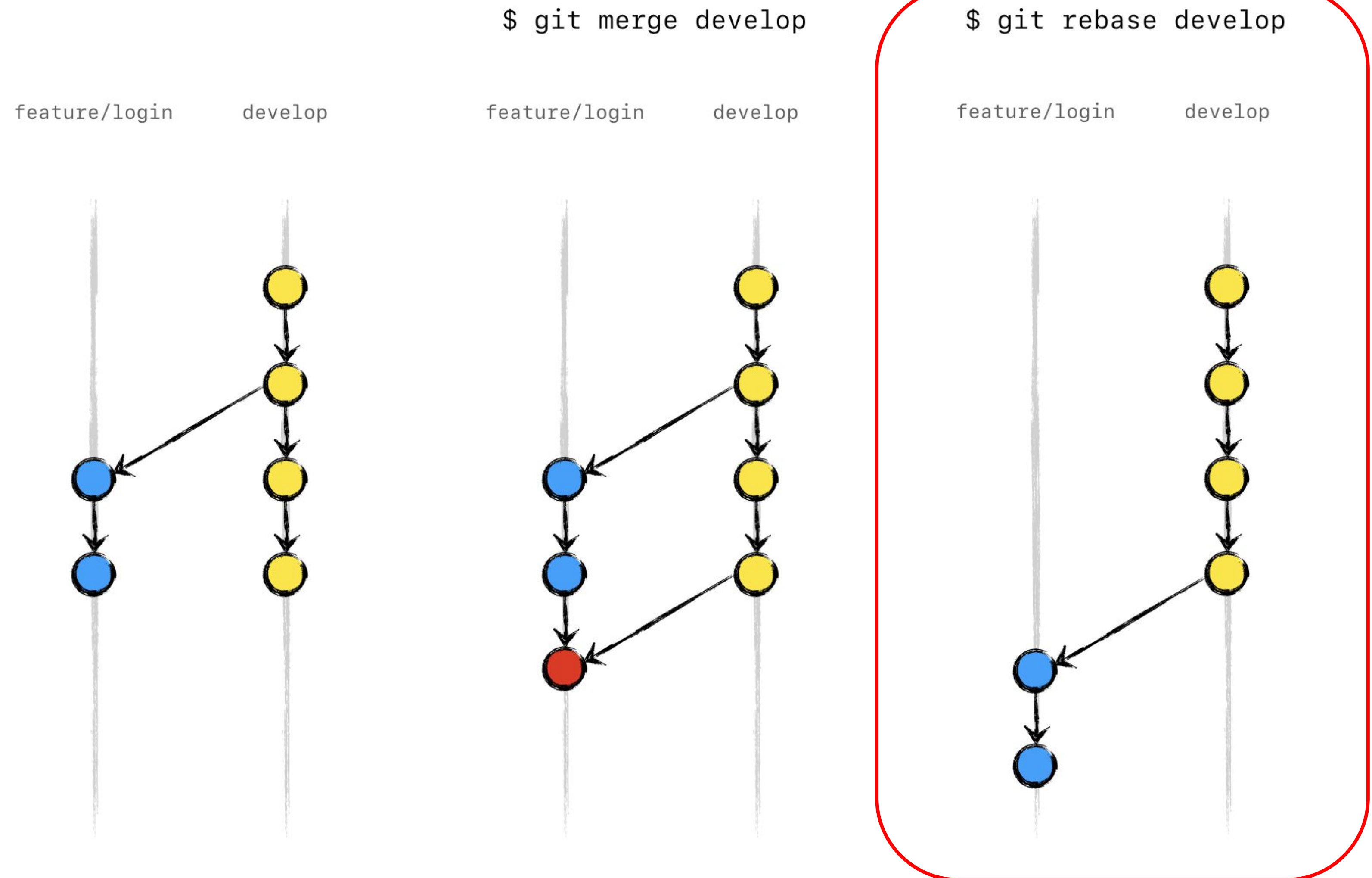
## MERGE

Fast Forward

True Merge

Merge Conflicts

Rebasing



Source: <https://jeffkreeftmeijer.com/git-rebase/git-rebase.png>

# REBASE

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Why?

- Better documentation
- Improves Team Speed
- Damage repairing
- ~~Fear!~~



## REBASE

### Pull + Rebase

Interactive Mode

Squash/Fixup

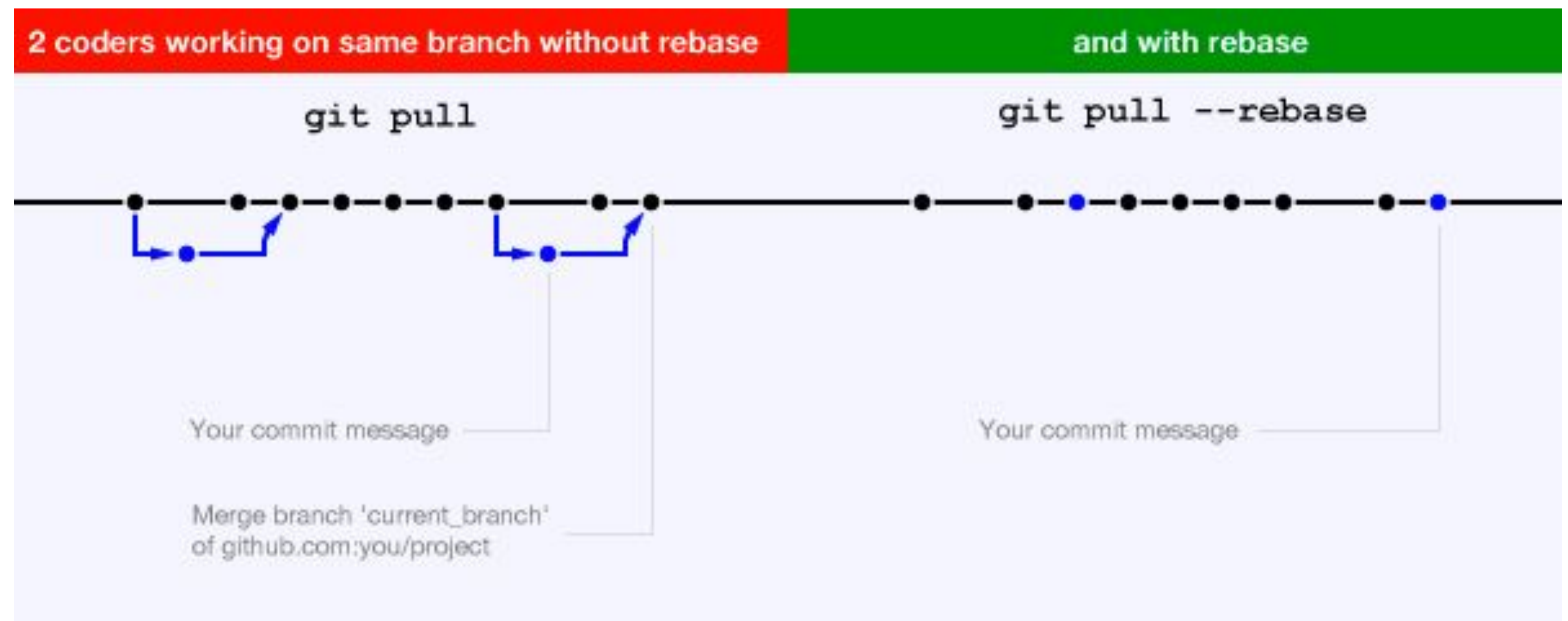
Reword

Drop

Exec

Golden Rule

```
$ git pull --rebase
```



Source: [http://kentnguyen.com/wp-content/uploads/2012/01/git\\_rebase.png](http://kentnguyen.com/wp-content/uploads/2012/01/git_rebase.png)

## REBASE

---

Pull + Rebase

**Interactive Mode**

Squash/Fixup

Reword

Drop

Exec

Golden Rule

```
$ git rebase -i [commit_hash]
```

or

```
$ git rebase -i HEAD~6
```

Where **6** is the number of commits we are about to rewind.



## REBASE

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Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

Exec

Golden Rule

```
pick b8b8bc8 Merged in merge/eip_qa_repo (pull request #593)
pick 0a806a4 iniciando a notificação
pick 9f42224 fechando codigo
pick ca97c6d criando um novo teste
pick 3d6db6d fixando mock de testes no antifraude
pick 20f058e DRY: Remove linha duplicada

# Rebase df9913b..20f058e onto df9913b (6 command(s))
#
# Commands:
# p, pick = use commit
# r, reword = use commit, but edit the commit message
# e, edit = use commit, but stop for amending
# s, squash = use commit, but meld into previous commit
# f, fixup = like "squash", but discard this commit's log message
# x, exec = run command (the rest of the line) using shell
# d, drop = remove commit
#
# These lines can be re-ordered; they are executed from top to bottom.
#
# If you remove a line here THAT COMMIT WILL BE LOST.
#
# However, if you remove everything, the rebase will be aborted.
#
# Note that empty commits are commented out
```

## REBASE

---

Pull + Rebase

Interactive Mode

**Squash/Fixup**

Reword

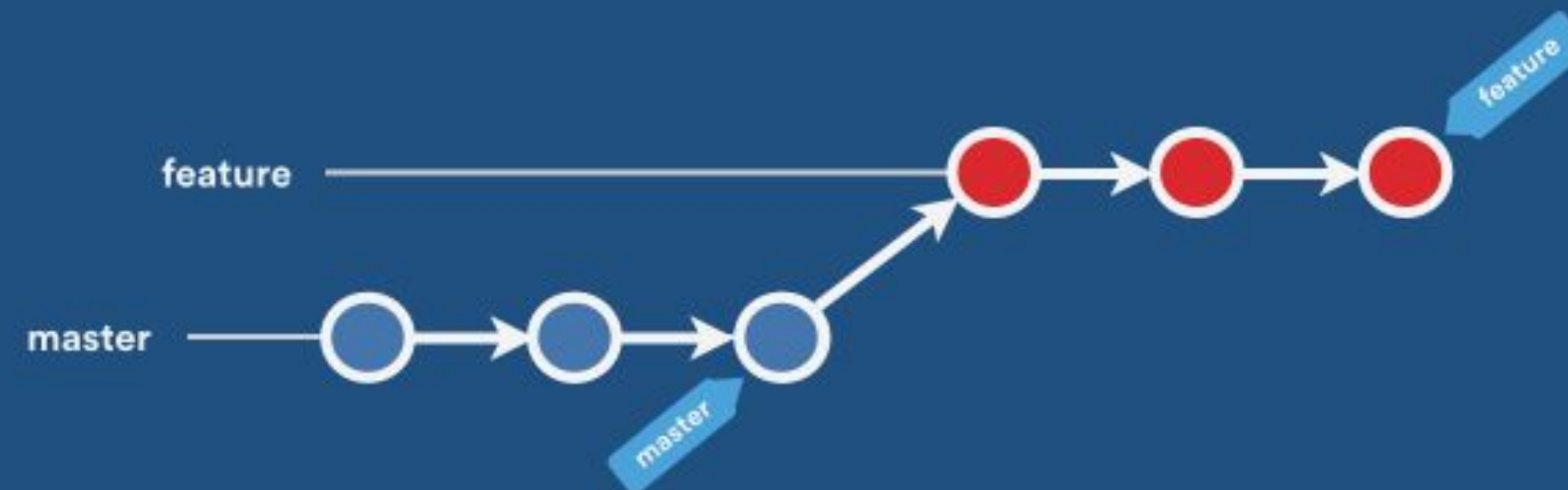
Drop

Exec

Golden Rule

## What is squash on merge?

It will compact feature commits into one before merging



Source: <https://legacy-developer.atlassian.com/blog/2014/12/pull-request-merge-strategies-the-great-debate/>



## REBASE

---

Pull + Rebase

Interactive Mode

**Squash/Fixup**

Reword

Drop

Exec

Golden Rule

```
pick b8b8bc8 Merged in merge/eip_qa_repo (pull request #593)
r 0a806a4 Exemplo de commit renomeado.
squash 9f42224 fechando codigo
squash ca97c6d criando um novo teste
s 3d6db6d fixando mock de testes no antifraude
pick 20f058e DRY: Remove linha duplicada
```

# REBASE

# Squash/Fixup

```
# This is a combination of 4 commits.
# The first commit's message is:
iniciando a notificação

# This is the 2nd commit message:

fechando código

# This is the 3rd commit message:

criando um novo teste

# This is the 4th commit message:

fixando mock de testes no antifraude

# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# Author:      l' [redacted] <[redacted]>
# Date:        Thu Dec 14 17:04:17 2017 -0200
#
# interactive rebase in progress; onto df9913b
# Last commands done (5 commands done):
#   squash ca97c6d criando um novo teste
#   s 3d6db6d fixando mock de testes no antifraude
# Next command to do (1 remaining command):
#   pick 20f058e DRY: Remove linha duplicada
# You are currently editing a commit while rebasing branch 'rebase-test' on 'df9913b'.
#
# Mudanças a serem submetidas:
```



## REBASE

---

Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

Exec

Golden Rule

```
pick b8b8bc8 Merged in merge/eip_qa_repo (pull request #593)
r 0a806a4 Exemplo de commit renomeado.
squash 9f42224 fechando codigo
squash ca97c6d criando um novo teste
s 3d6db6d fixando mock de testes no antifraude
pick 20f058e DRY: Remove linha duplicada
```



## REBASE

---

Pull + Rebase

Interactive Mode


Squash/Fixup

Reword

**Drop**

Exec

Golden Rule



```
pick c350570 Correção de valores  
d d7dbb4d Atualização do Makefile  
d 3eedcfe Instala dependencias p/ build no Ubuntu  
drop e5ff04c Update .travis.yml  
pick 5bc6a1a Update README.md
```

## REBASE

---

Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

**Exec**

Golden Rule

### Usability:

- Run tests for each commit
- Run linters
- Execute stuff and log it somewhere
- Et cetera

## REBASE

---

Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

**Exec**

Golden Rule

```
$ git rebase -i --exec [command] [commit_hash]
```



## REBASE

---

Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

**Exec**

Golden Rule

```
$ git rebase -i --exec "echo 'Gloria a deuX'"  
HEAD~3
```

## REBASE

---

Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

Exec

Golden Rule

```
$ git rebase -i --exec "echo 'Gloria a deuX'" HEAD~3
```

```
pick 39e351c Update README.md
exec echo 'gloria a deuX'
pick 4f683fb refactoring: quotes moved to another file
exec echo 'gloria a deuX'
pick 15f37c9 browsersync missing
exec echo 'gloria a deuX'
```

# REBASE

---

Rebase executed

```
└─ git rebase -i HEAD~6
[detached HEAD 8c11e55] iniciando a notificação
Author: Henrique <everaldo.lopes@concrete.com.br>
Date: Thu Dec 14 17:04:17 2017 -0200
4 files changed, 83 insertions(+), 6 deletions(-)
[detached HEAD 48229b8] iniciando a notificação
Author: Henrique <everaldo.lopes@concrete.com.br>
Date: Thu Dec 14 17:04:17 2017 -0200
6 files changed, 133 insertions(+), 9 deletions(-)
Successfully rebased and updated refs/heads/rebase-test.
```



# REBASE

---

## Before/After Rebase

```
20f058e DRY: Remove linha duplicada
3d6db6d fixando mock de testes no antifraude
ca97c6d criando um novo teste
9f42224 fechando codigo
0a806a4 iniciando a notificação
```

```
└─ git log --oneline
fbeda19 DRY: Remove linha duplicada
48229b8 iniciando a notificação
```

## REBASE

---

Pull + Rebase

Interactive Mode

Squash/Fixup

Reword

Drop

Exec

Golden Rule

***"Never rebase while you're on a public branch."***

*With Great Power Comes Great Responsibility*

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**UNCLE BEN**



# CONTACTS

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Filipe Mondaini

- **Github:** mondaini
- **Medium:** mondaini
- **Twitter:** filipecm

# REFERENCES

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- [Merging vs. Rebasing—Atlassian](#)
- [The Golden Rule Of Rebasing](#)
- [The Advanced Git Guide: Git Stash, Reset, Rebase, and More](#)
- [Git Rebase Interactive :: A Practical Example](#)
- [David Baumgold—Advanced Git—PyCon 2015](#)
- [Git Rebase and the Golden Rule Explained - Free Code Camp](#)

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