Git

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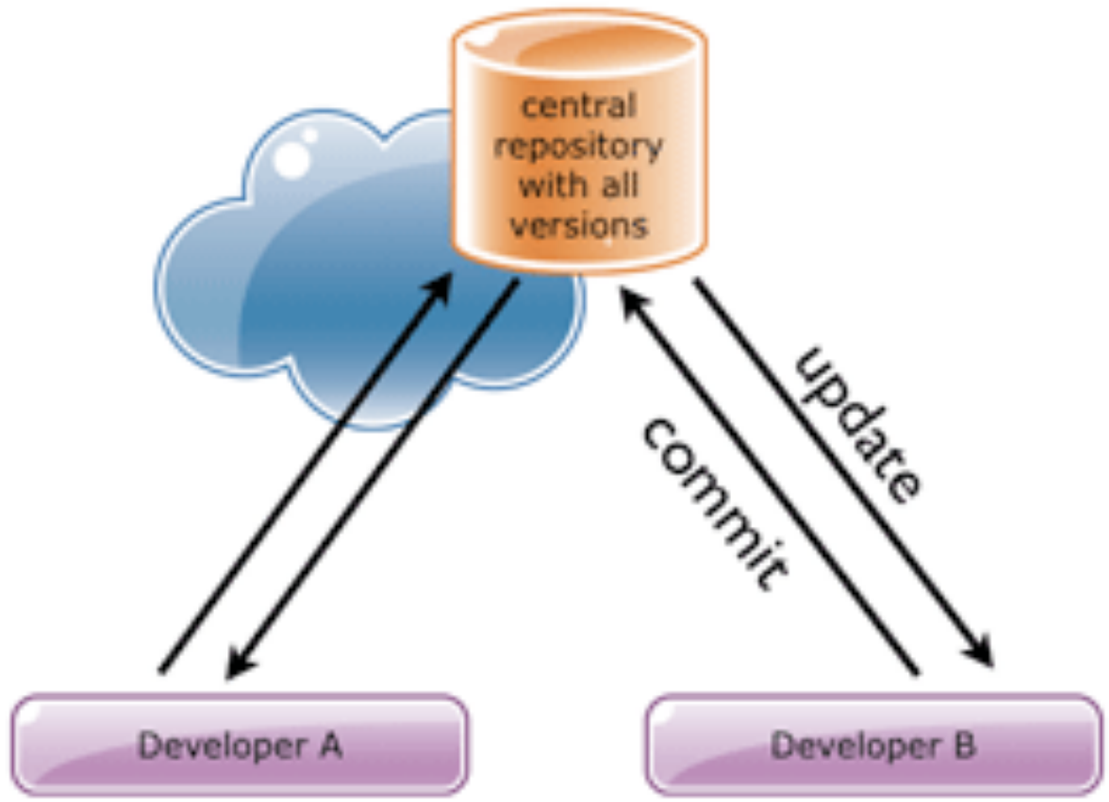
1. 分布式
2. 工作区、暂存区与版本库
3. 分支与合并
4. Git 核心
5. 常用指令
6. 基于 git-flow 的工作流

“Git is a free and open source **distributed** [分散的] version control system designed to handle everything from small to very large projects with speed and efficiency.”

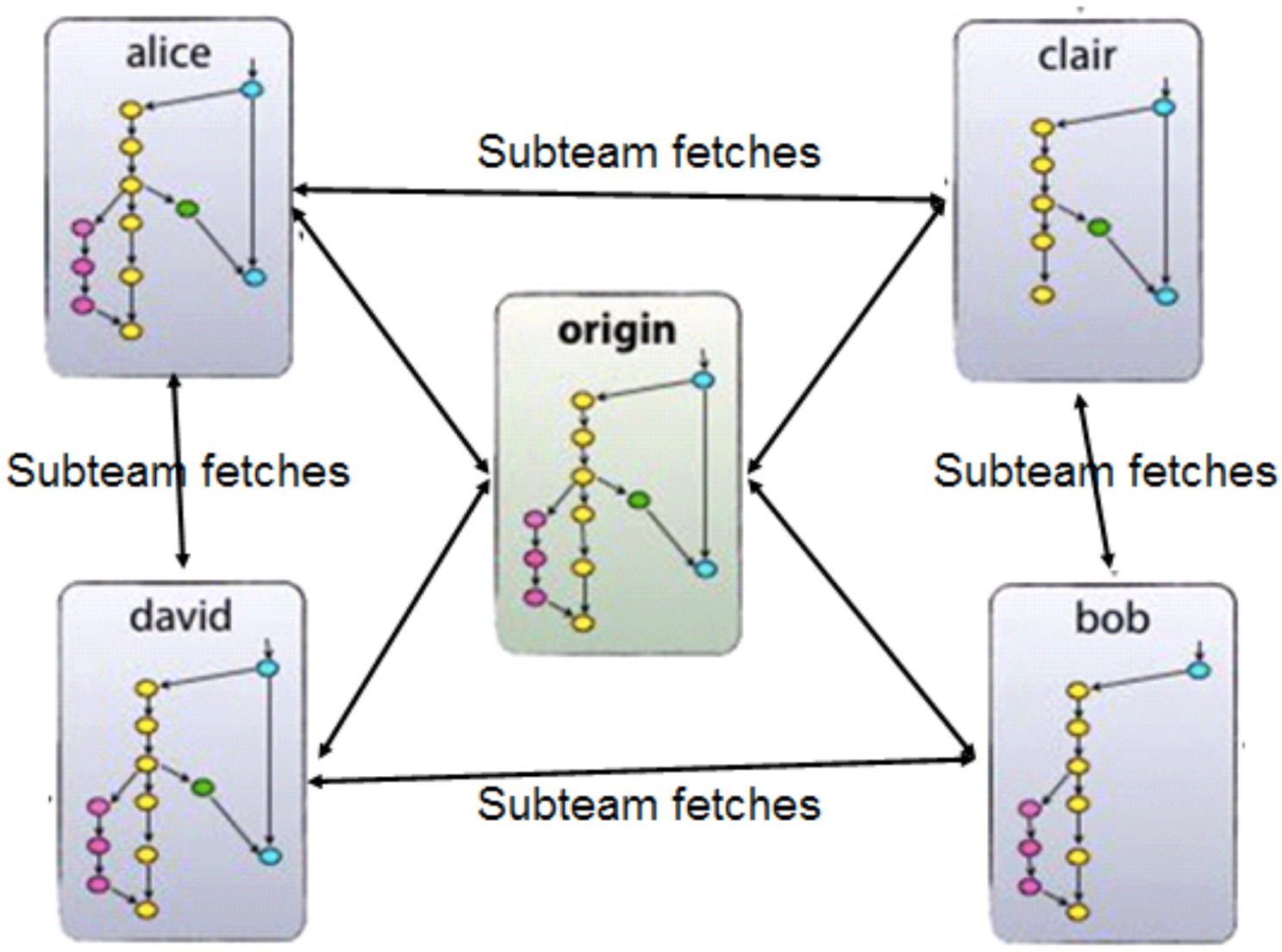
– https://git-scm.com/

1. 分布式

集中式


central
repository
with all
versions
commit
update
Developer A
Developer B

分布式


alice
clair
origin
Subteam fetches
Subteam fetches
Subteam fetches
david
bob
Subteam fetches

git clone

git clone git@github.com:island205/barn.js.git

- mkdir barn.js & cd barn.js
- git init
- git remote add origin git@github.com:isl……
- git fetch origin
- git checkout master

git pull

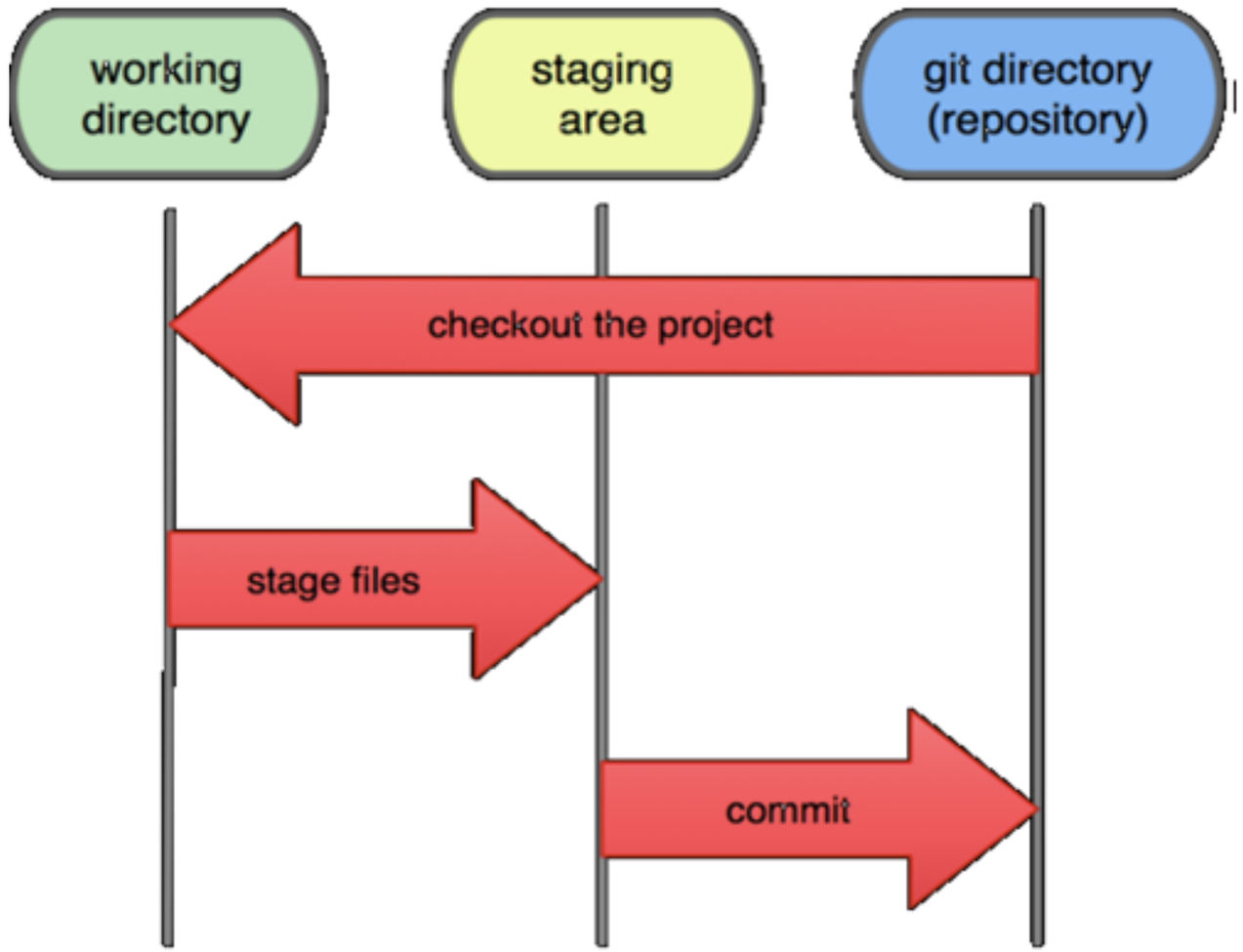
- git fetch origin
- git merge origin/master

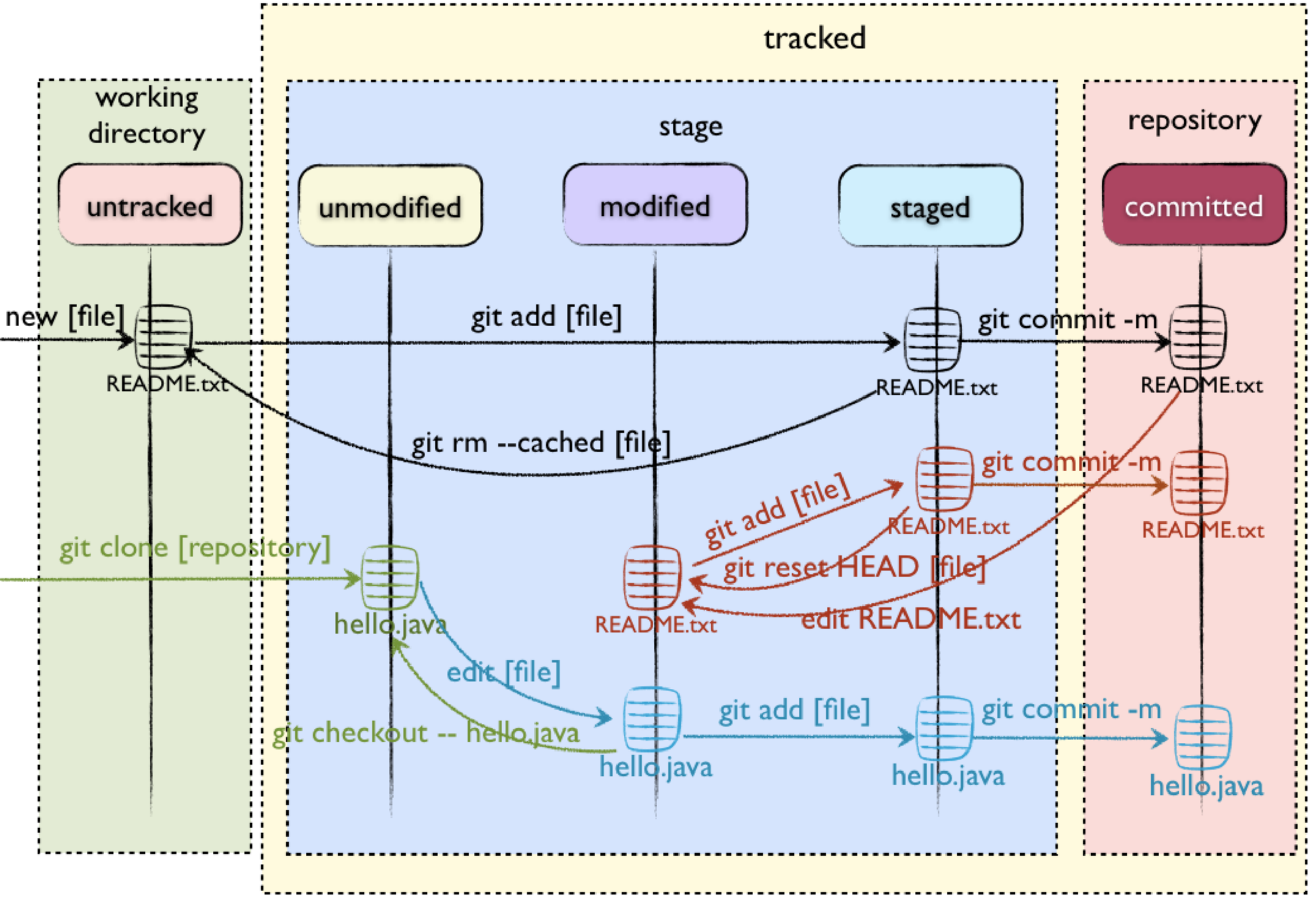
- git pull origin master

git push

- git push origin master
- git push origin :master

2. 工作区、暂存区和版本库


working directory
staging area
git directory (repository)
checkout the project
stage files
commit


tracked
working directory
stage
repository
untracked
unmodified
modified
staged
committed
new [file]
git add [file]
git commit -m
README.txt
README.txt
README.txt
git rm --cached [file]
git add [file]
git commit -m
README.txt
README.txt
git clone [repository]
git reset HEAD [file]
edit README.txt
hello.java
README.txt
edit [file]
git checkout -- hello.java
git add [file]
git commit -m
hello.java
hello.java
hello.java

git commit

- git add -A (慎用)
- git commit
- git commit -a
- git commit -a -m ‘what did you do’

git stash

- git stash
- git stash apply
- git stash drop
- git stash pop
- git stash apply stash@{0}

提交注释就是做了啥就写啥

add search controllers,add miss api,rm menu api

xiaojue authored 3 days ago

增加菜单数据

xiaojue authored 3 days ago

fix $pullAll for user

xiaojue authored 3 days ago

修复测试用例bug

xiaojue authored 3 days ago

Commits on Oct 16, 2014

fix geo

xiaojue authored 7 days ago

Commits on Oct 15, 2014

add uploads ignore

xiaojue authored 8 days ago

增加文件上传和editor功能

xiaojue authored 8 days ago

add query middleview

xiaojue authored 8 days ago

Commits on Oct 14, 2014

添加数据转换脚本，处理老的mysql值存mongodb

xiaojue authored 9 days ago

山重水复疑无路，只能自挂东南枝
kmxz authored on Apr 24, 2013

乘彼垝垣，以de bug。不灭bug，泣涕涟涟。
kmxz authored on Apr 24, 2013

JS無端五十行，一行一bug思华年
kmxz authored on Apr 24, 2013

烽火连三月，bugfix抵万行
kmxz authored on Apr 24, 2013

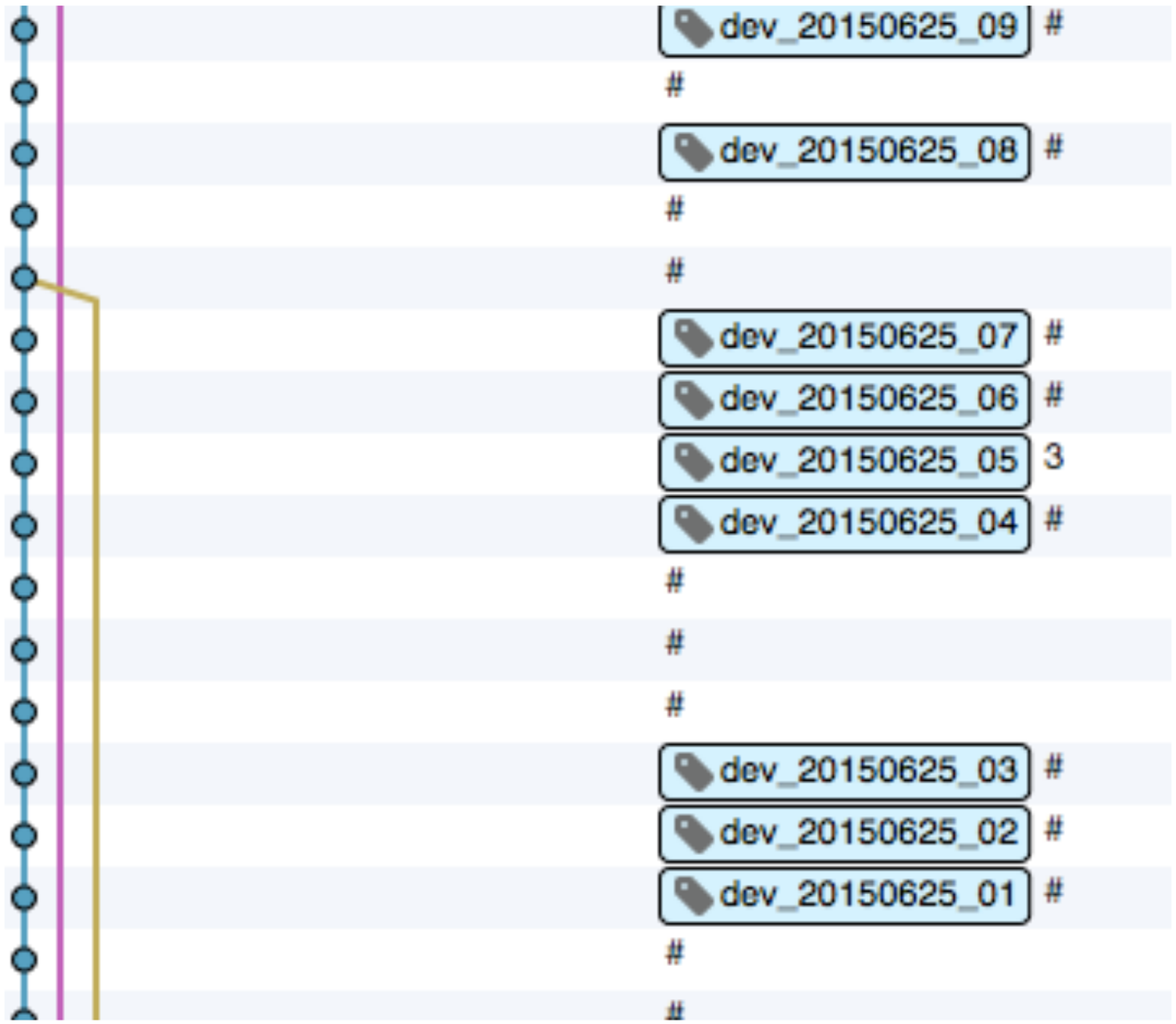
飞流直下三千尺，疑似 drag upload 解决了
FeiAline authored on Apr 24, 2013

乍暖还寒时候，最难debug。三段两行淡fix，怎敌他，code来bug多！
kmxz authored on Apr 24, 2013

Commits on Apr 23, 2013

红耦香残玉簟秋，轻解罗裳，自挂东南枝
kmxz authored on Apr 23, 2013

春风得意马蹄疾，一日de尽长安bug
guanlun authored on Apr 23, 2013


dev_20150625_09 #
#
dev_20150625_08 #
#
#
dev_20150625_07 #
dev_20150625_06 #
dev_20150625_05 3
dev_20150625_04 #
#
#
#
dev_20150625_03 #
dev_20150625_02 #
dev_20150625_01 #
#
#

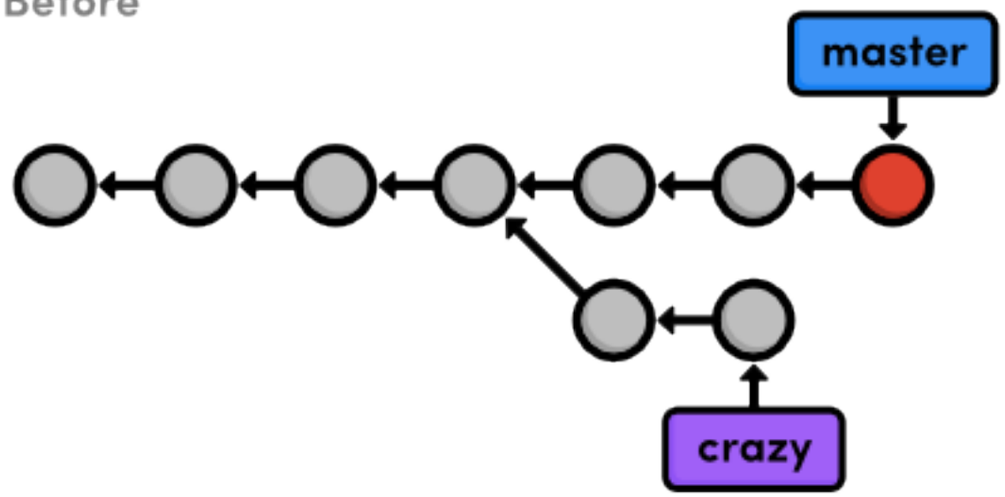
fix changelog typos

This is why we have a PR process for this, Forrest.

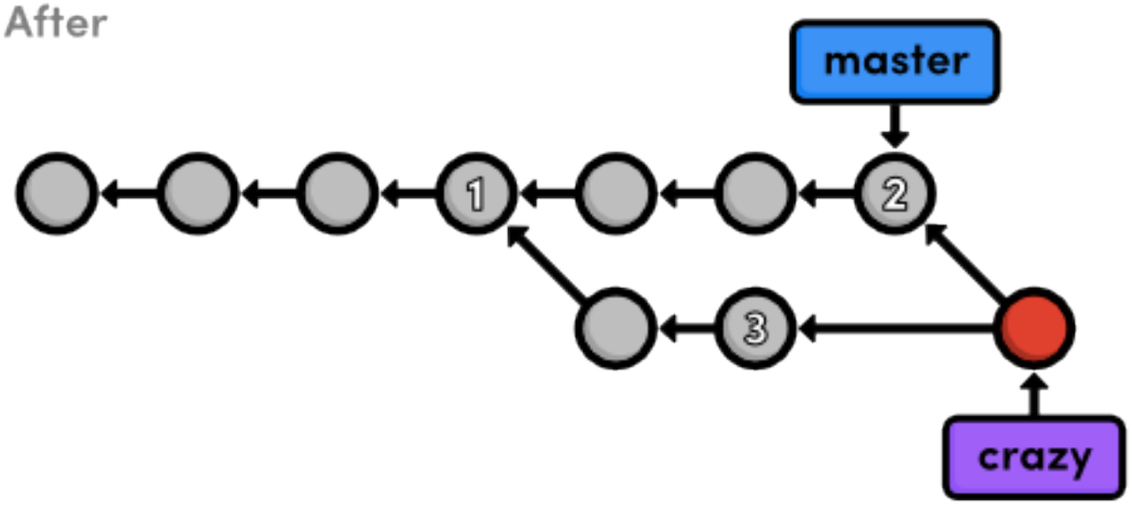
3. 分支与合并

git merge master

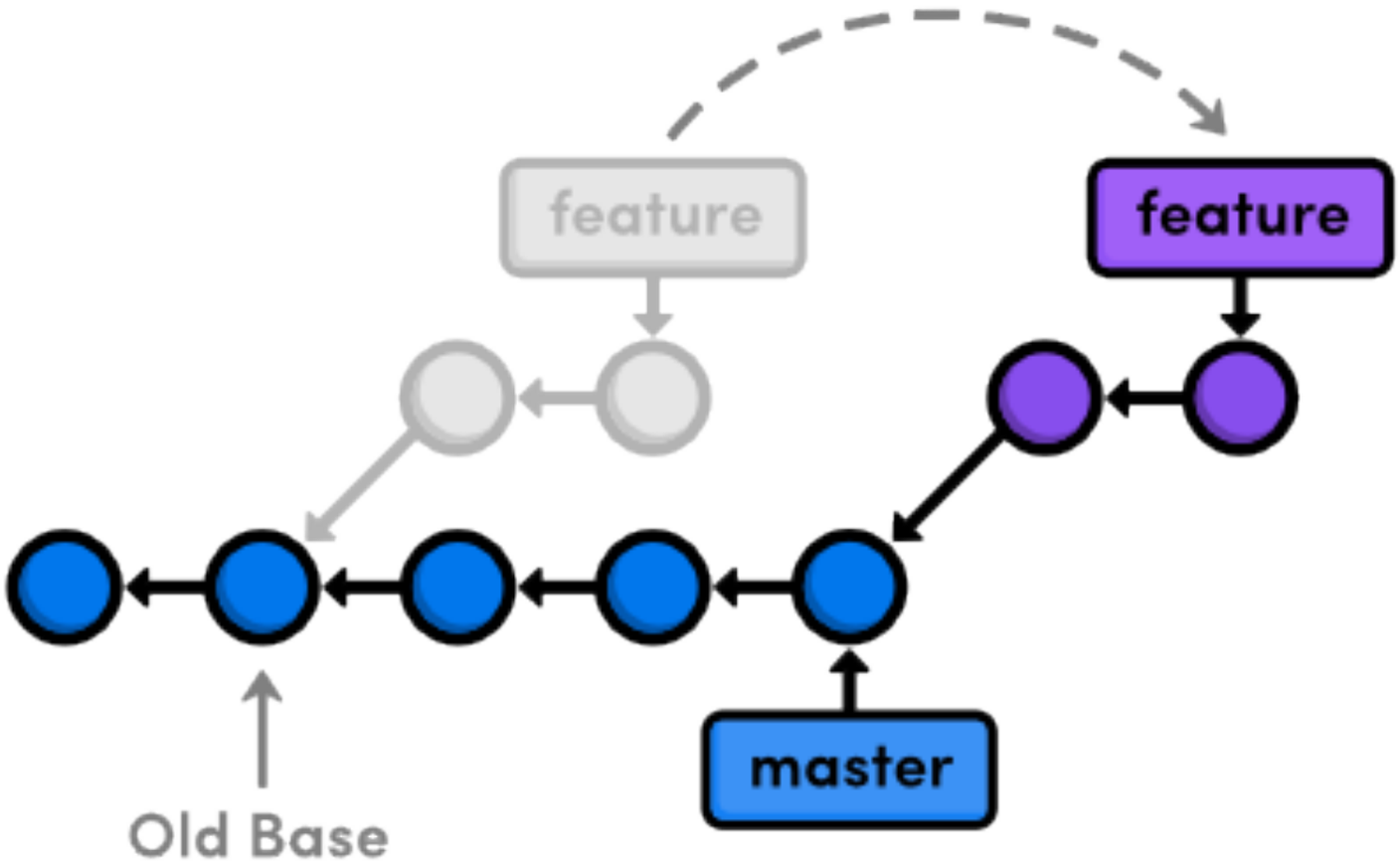
Before



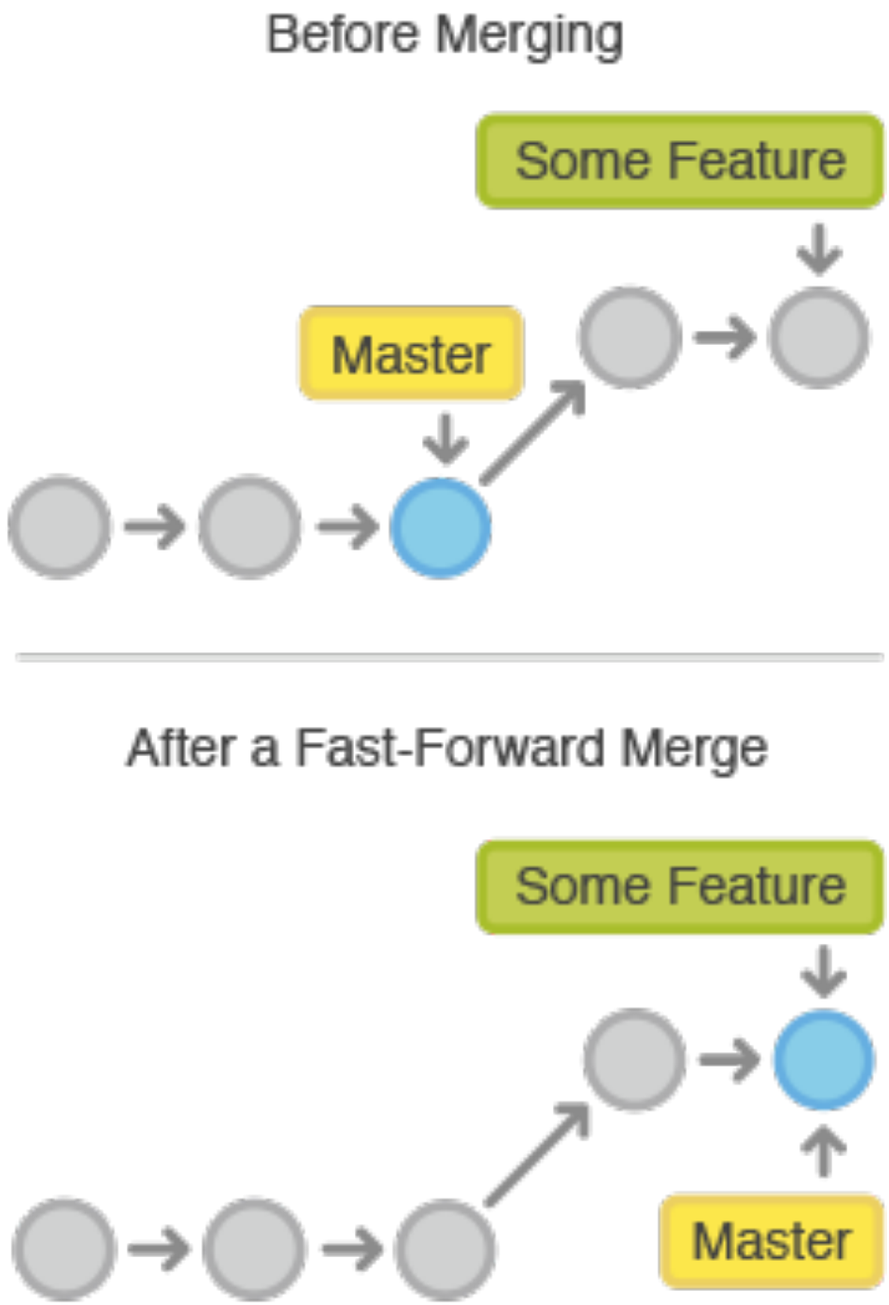
After



git rebase master



`git merge Some Feature[fast-foreword]`

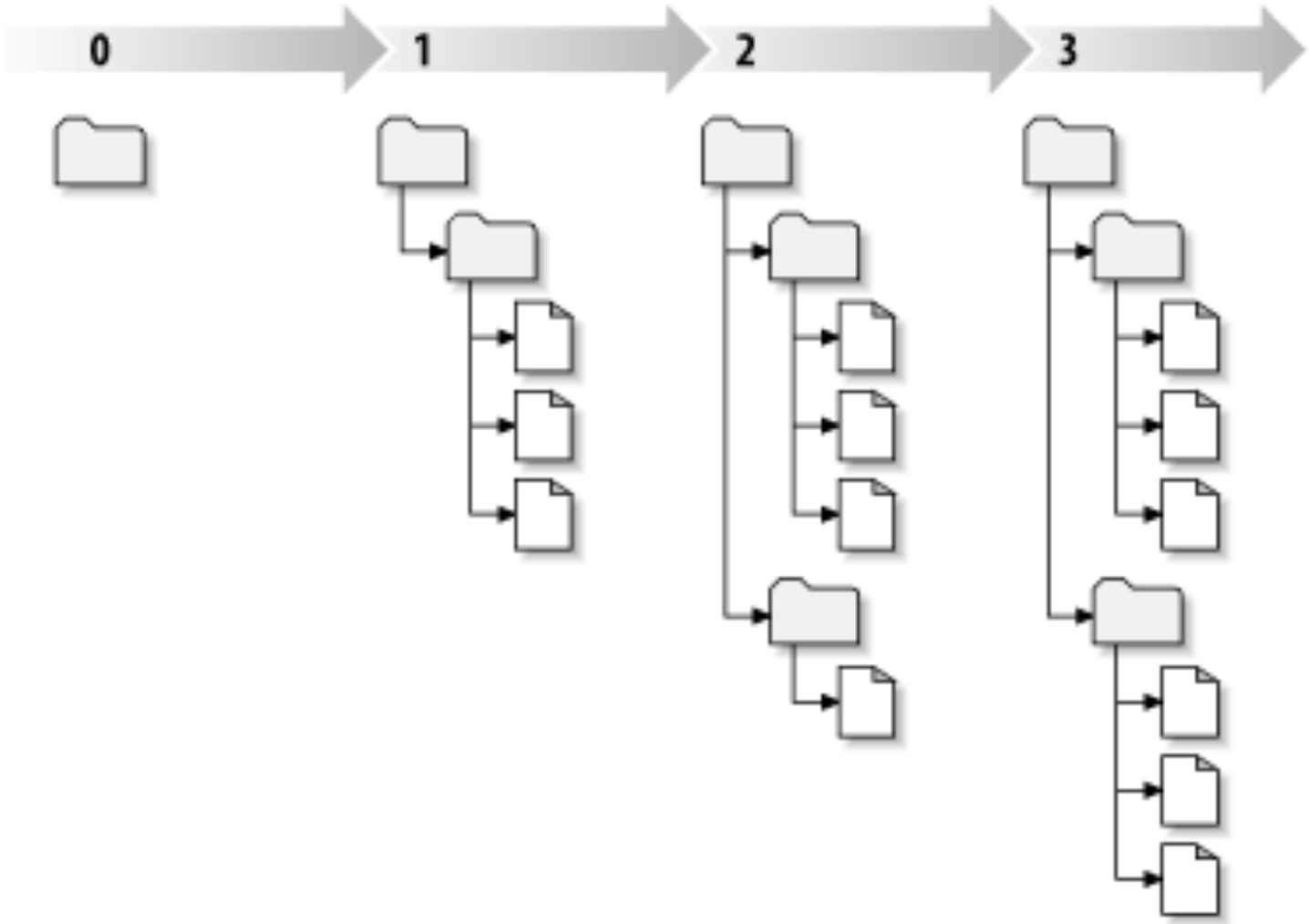


问题

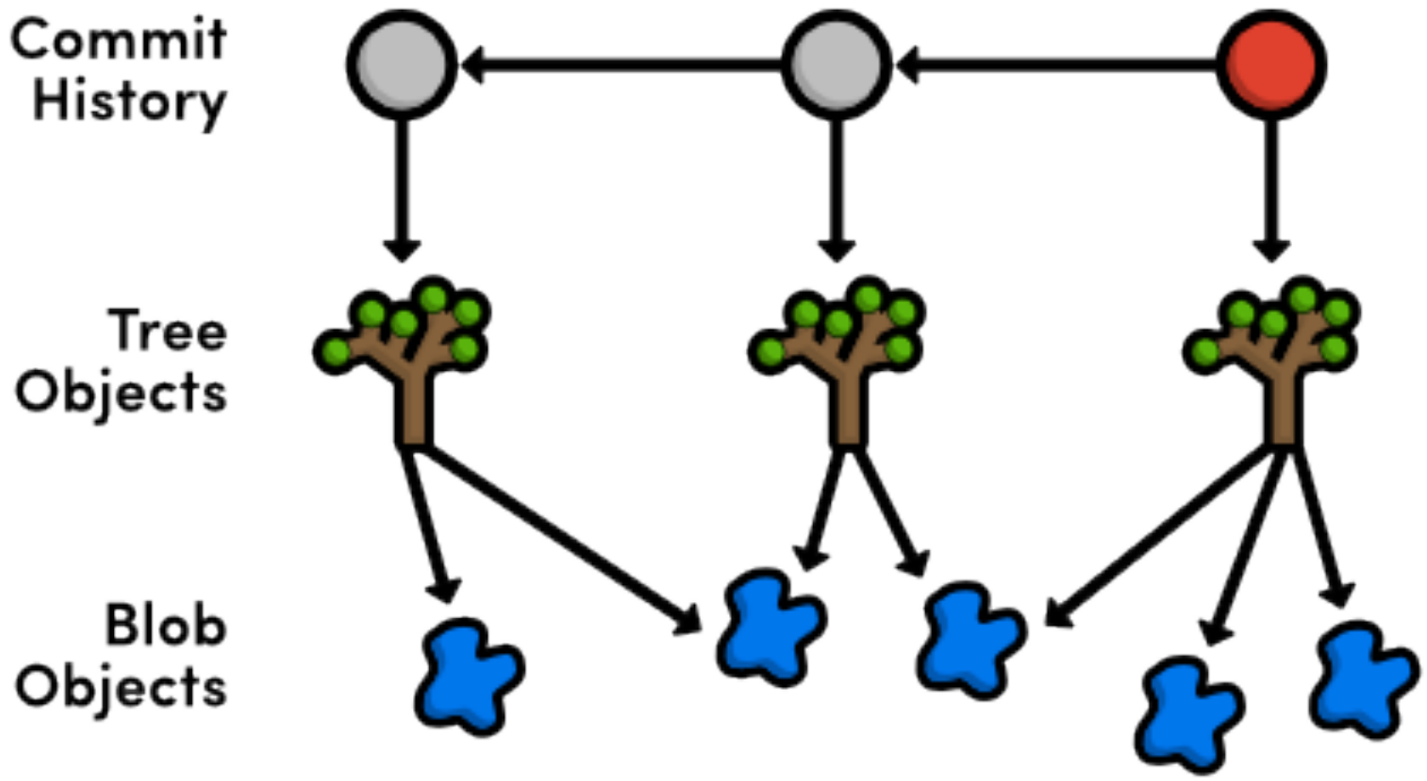
- 两个分支分别开发同一个需求的不同部分，怎么办?
- 比较两个分支，比较不同分支的同一个文件?
- 什么是一个正常的操作流程?
- 如何处理冲突?
- 后端在我的分支上提交了代码，我该如何更新到我自己这边?

4. Git 核心

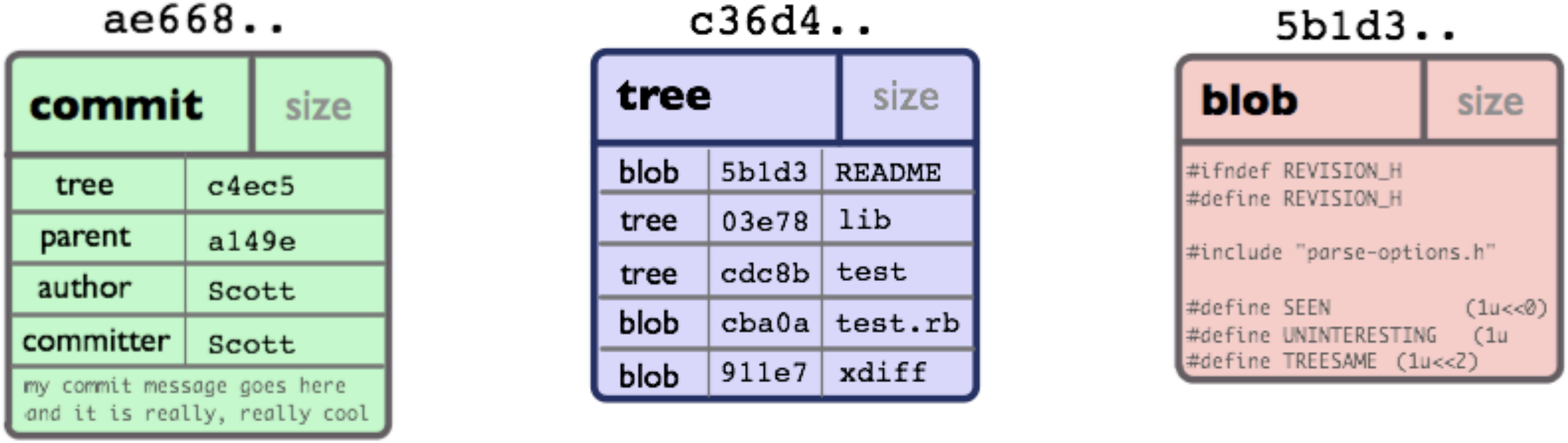
每个版本都快照



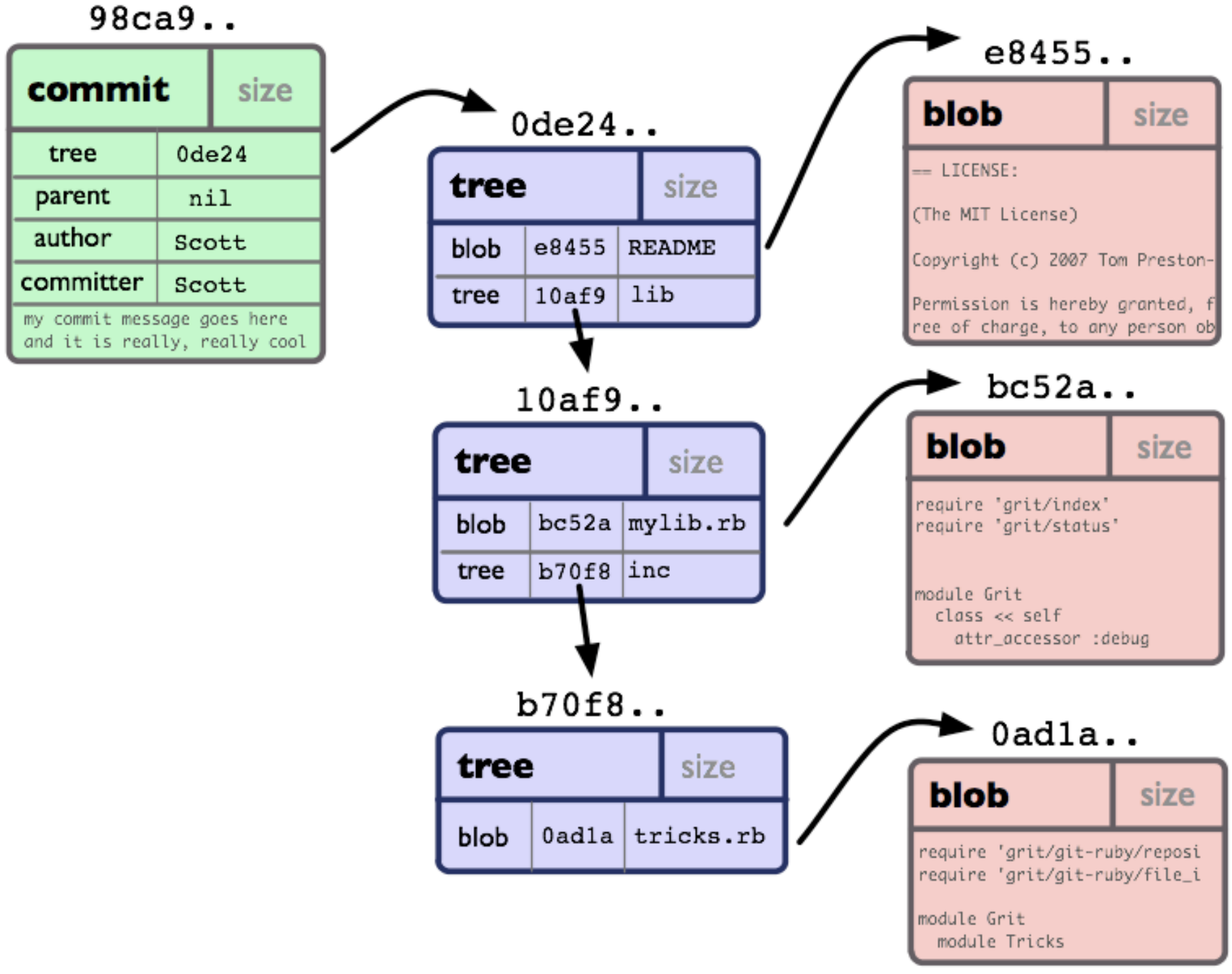
快照优化



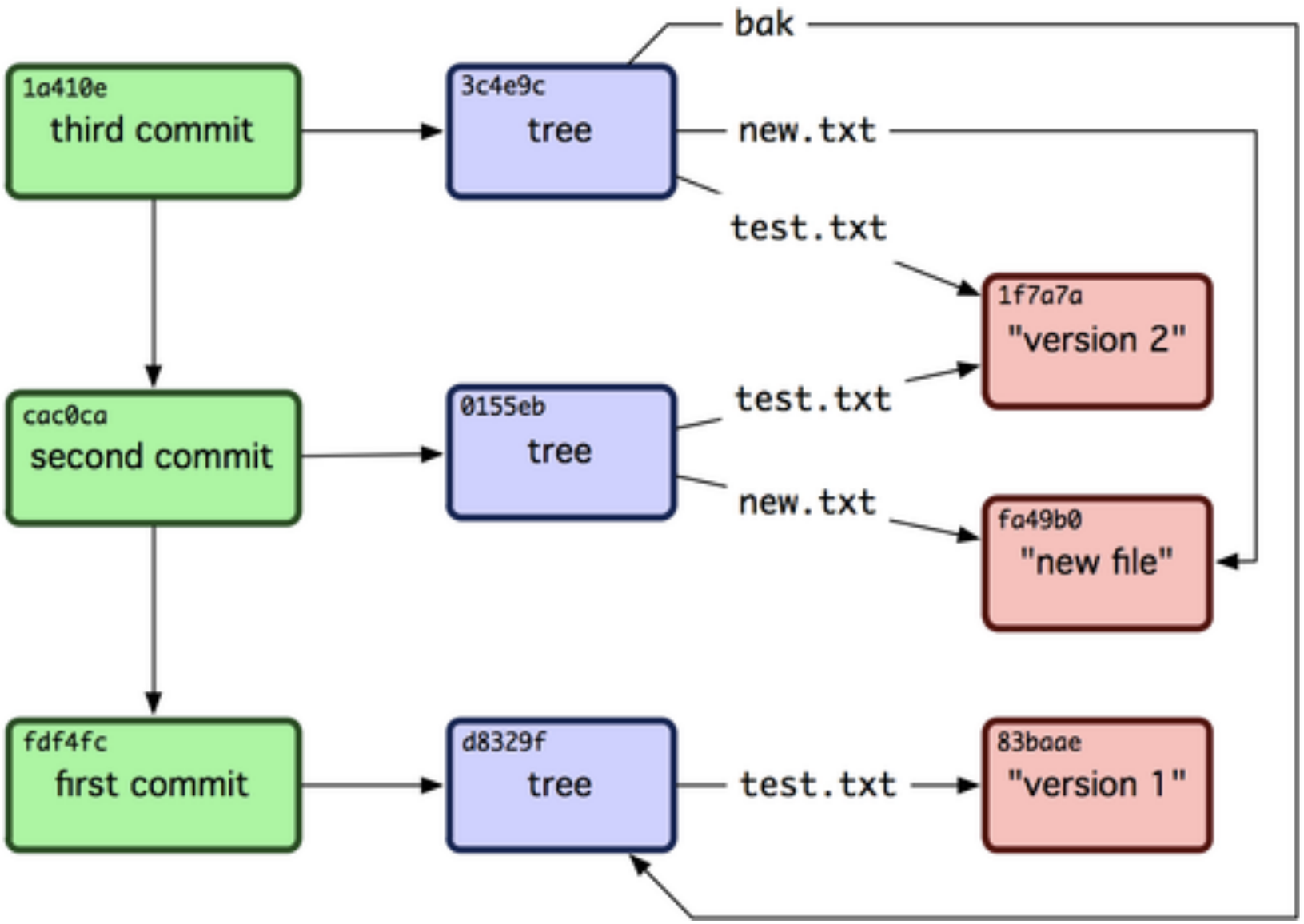
Object（数据存储）


ae668..
commit
size
tree
c4ec5
parent
a149e
author
Scott
committer
Scott
my commit message goes here
and it is really, really cool
c36d4..
tree
size
blob
5b1d3
README
tree
03e78
lib
tree
cdc8b
test
blob
cba0a
test.rb
blob
911e7
xdiff
5b1d3..
blob
size
#ifndef REVISION_H
#define REVISION_H
#include "parse-options.h"
#define SEEN (1u<<0)
#define UNINTERESTING (1u
#define TREESAME (1u<<2)

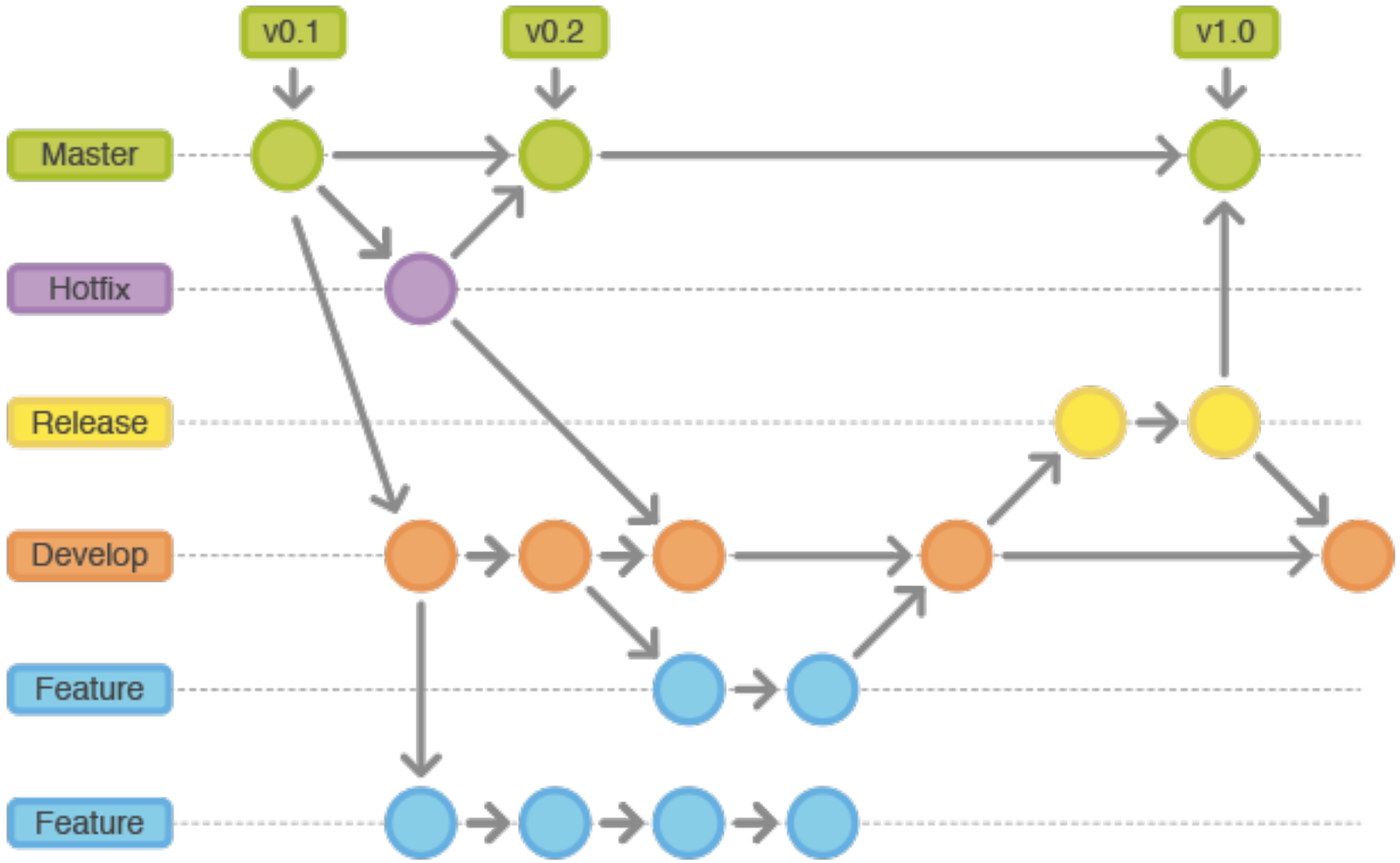
快照（一个 commit）


98ca9..
commit
size
tree
0de24
parent
nil
author
Scott
committer
Scott
my commit message goes here
and it is really, really cool
0de24..
tree
size
blob
e8455
README
tree
10af9
lib
e8455..
blob
size
== LICENSE:
(The MIT License)
Copyright (c) 2007 Tom Preston-
Permission is hereby granted, f
ree of charge, to any person ob
10af9..
tree
size
blob
bc52a
mylib.rb
tree
b70f8
inc
bc52a..
blob
size
require 'grit/index'
require 'grit/status'
module Grit
class << self
attr_accessor :debug
b70f8..
tree
size
blob
0ad1a
tricks.rb
0ad1a..
blob
size
require 'grit/git-ruby/reposi
require 'grit/git-ruby/file_i
module Grit
module Tricks

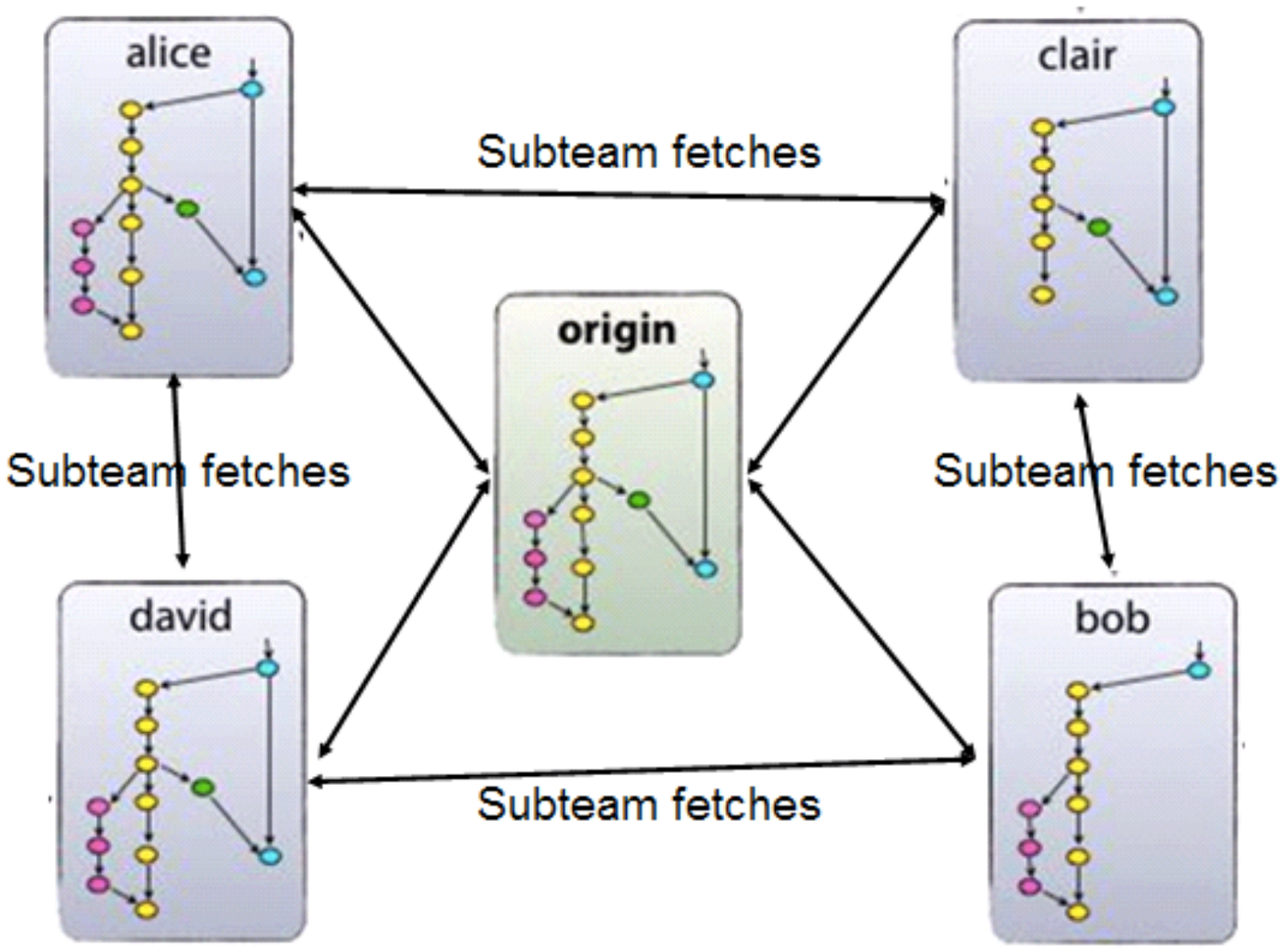
commit link


1a410e
third commit
3c4e9c
tree
bak
new.txt
test.txt
1f7a7a
"version 2"
cac0ca
second commit
0155eb
tree
test.txt
new.txt
fa49b0
"new file"
fdf4fc
first commit
d8329f
tree
test.txt
83baae
"version 1"

仓库（commit tree）



分布式


alice
clair
origin
Subteam fetches
Subteam fetches
Subteam fetches
david
bob
Subteam fetches

底层命令

- find .git/objects -type f | sort
- git cat-file -t master
- git cat-file commit master
- git ls-tree [tree-hash]

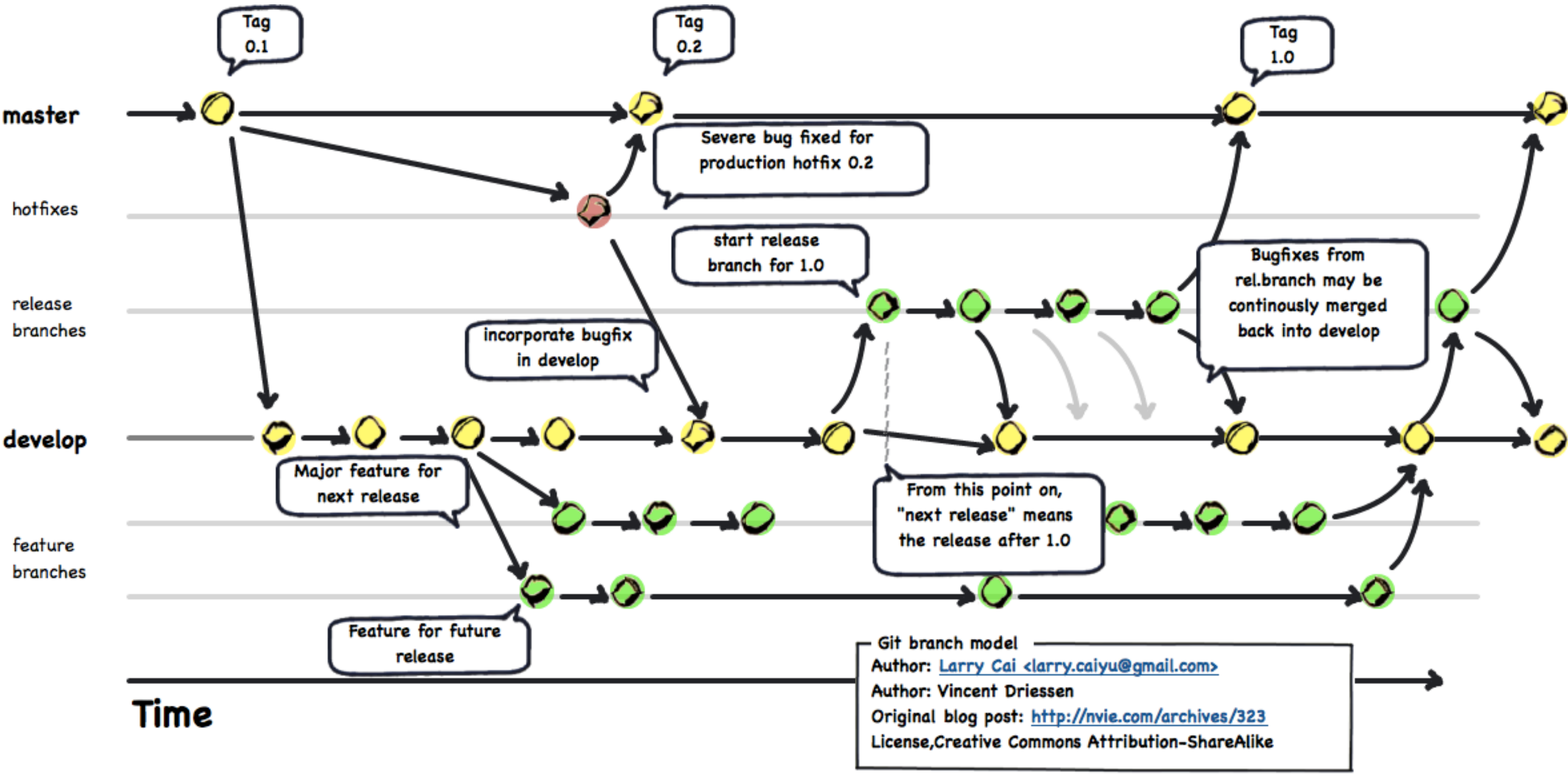
问题

- 分支是什么?
- master 是不是分支?
- tag 是什么?
- HEAD 是什么?

5. 常用命令

- `git reflog`
- `git revert`
- `git reset –hard`
- `git commit –amend`
- `git cherry-pick`

6. 基于 git-flow 的工作流


Tag 0.1
Tag 0.2
Tag 1.0
master
Severe bug fixed for production hotfix 0.2
hotfixes
start release branch for 1.0
release branches
incorporate bugfix in develop
Bugfixes from rel.branch may be continously merged back into develop
develop
Major feature for next release
From this point on, "next release" means the release after 1.0
feature branches
Feature for future release
Time
Git branch model
Author: Larry Cai <larry.caiyu@gmail.com>
Author: Vincent Driessen
Original blog post: http://nvie.com/archives/323
License,Creative Commons Attribution-ShareAlike

功能开发

- git fetch && git checkout develop
- git checkout -b feature/change-page-title
- git commit …
- 在 gitlab 上发起 merge request
- git branch -D feature/change-page-title

提交测试

- git fetch && git checkout develop
- git checkout -b release/20150623
- git tag dev_20150623_01
- git push release/20150623
- 在 release/20150623 上修改测试提出的问题
- git commit …
- git commit …
- git tag dev_20150623_02

回归测试

- git checkout release/20150623
- git tag reg_20150623_01
- git push reg_20150623_01

完成上线

- git fetch && git checkout master
- git merge release/20150623
- git tag reg_20150623
- git push origin master reg_20150623

- git fetch && git checkout develop
- git merge release/20150623
- git push origin develop

- git branch -D release/20150623
- git push origin :release/20150623

线上问题

- git checkout reg_20150623
- git checkout -b hotfix/title-error
- 修复线上问题
- git commit …
- git tag hot_20150623_01
- git push hotfix/title-error hot_20150623_01
- git commit …
- git commit …
- git tag hot_20150623_02
- git push hot_20150623_02

成功修复

- git fetch && git checkout master
- git merge hotfix/title-error
- git tag hot_20150623

- git fetch && git checkout develop
- git merge hotfix/title-error
- git push origin master develop hot_20150623

- git branch -D hotfix/title-error
- git push origin :hotfix/title-error

注意

- develop 和 master 是常驻分支
- feature/xxxx release/xxxx hotfix/xxxx 都是临时分支，用完删除
- release 和 hotfix 需要同时合并回 master 和 develop 分支

git flow 工具