Git Rebase Work Flow

How to minimize time wasted when committing code

Typical Git Commit Flow

Write some code

Self explanatory: new feature is defined and coding begins

Commit to branch

Code is updated in the Git repo as a series of commits

Merge branch to master

Feature is completed, code is finalized, and it is brought back into master

Git usage based on number of developers

Solo Developer

- Commit directly to master, maybe a branch every now and then
- Almost no conflicts
- Does not require co-ordination between teammates, because you have none
- No wait time between merges

2-4 Developers

- Start to use branching strategy
- Start to see conflicts
- Some wait time between branch merges
- Git history begins to get complex but still manageable

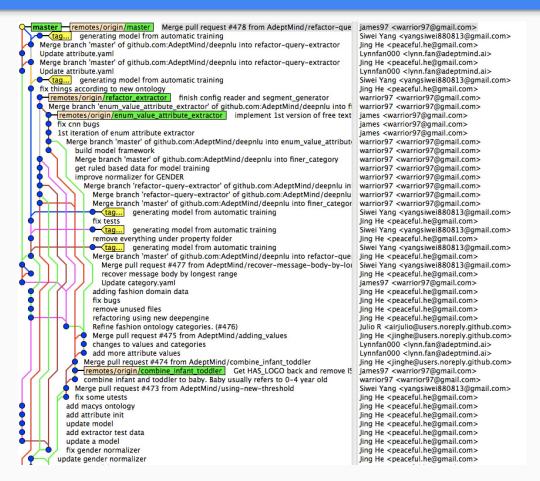
5+ Developers

- Lots of branches clutter git history
- Conflicts begin to rise quickly,
 and each teammate spends a
 lot of time resolving or maybe
 developer dedicated to
 merging (usually senior)
- If one dev dedicated to merge, person becomes bottleneck and this process won't scale

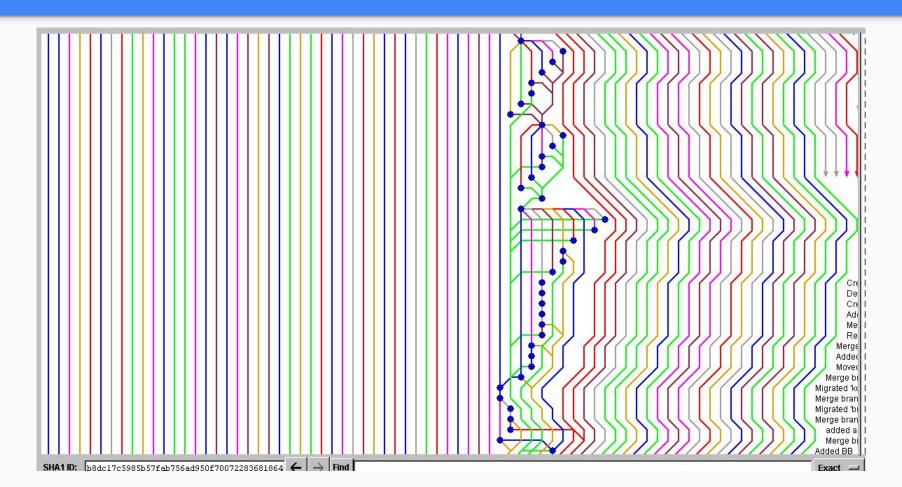
Solo Developer Git History -- `general_spider` Repository

master remotes/origin/master add canadagoose	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
fix config spider	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
add new spiders	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
fix bug	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
avoid invalid keys	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
merging	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
fix	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
extracting configurations	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
prepare for another round of extraction	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
do local color normalization	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
update persistence	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
update color extractor	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
add facts resolver	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
fix color extractor	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
command-line fix	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
got macys colors	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
fix filter url	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
fix routes management; apply url filter universally	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
labeler fix	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
primitive labeler	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
remotes/origin/WIP wip	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
move to ubuntu	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
 adding random review text to test set 	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
 adding search expansion 	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
remove redundant url management	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
updated response checking	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
adopt the document model	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
 add primary url index; move broken page out of tests 	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
split amazon spider; add extraction tests	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
extraction optimization	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
further optimization	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
performance improvements	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
on our expansion for now	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
upgrading amazon search crawler with separate storage and search group management	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
price extractor update	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
update extraction storage	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
fix extraction	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
update	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
mre restrictive link chasing	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
continues on to property extraction	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
decoding search results	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
add noahsnaturalfoods; cosmetic fixes	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
macys api decoded; speed fix	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
¥ 11X	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
db as dependency injection	Siwei Yang <s8yang@uwaterloo.ca></s8yang@uwaterloo.ca>
much more sites; generalized evaluator	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>
first commit with tests	Siwei Yang <yangsiwei880813@gmail.com></yangsiwei880813@gmail.com>

Git Merge History for 2-4 Developers -- `deepnlu` repository

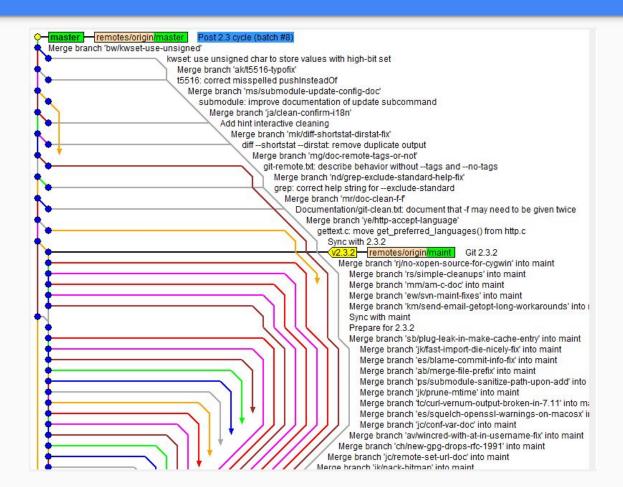


Potential Chaos Scenario With 5+ Developers



Wat.

Git Merge -- Time consumption approaches infinite



Solution

Use
`git pull --rebase origin master`
or
`git rebase -i origin/master`

- Linear history based on merge
- Easy to handle product release, backporting, and versioning
- Conflicts resolved by single developer, everyone else gets for free (most of the time)
- Scales to infinite developers, proven by Open-Source community

Git Rebase Work-Flow: A Team Effort

```
master remotes/origin/master
                                     Merge pull request #4136 from apimesh/hide-p
 hide oauthApi in v6

    Merge pull request #4141 from apimesh/follow-up-PR4093

    Changes for PR 4093 follow up.

    Merge pull request #4139 from apimesh/change-message-version

 change welcome version to 5072
 Merge pull request #4133 from apimesh/fixed-advanced-scope
 fix advanced scope url bug
Merge pull request #4106 from apimesh/fix/api-validation
 Refactor validation and save button
  Merge pull request #4129 from apimesh/issue-4124
 Allow space in API Title

    Merge pull request #4127 from apimesh/assembly-issue-318

    add updated assembly strings

Merge pull request #4114 from apimesh/reboot-oauth-object
 add oauth object

    Merge pull request #4126 from apimesh/issue-4086

    Allow consecutive dashes in catalog name

Merge pull request #4125 from apimesh/planSummaryBug
 Hide billing info when flag false
Merge pull request #4104 from apimesh/OAuth-assembly-action
 add OAuth Assembly Action for v6 Experimental
Merge pull request #4093 from apimesh/reboot-toolkit
 Add Assembly Parse Action for v6 DP Gateway.

    Merge pull request #3917 from apimesh/issue-3916

 Fix toolkit spinner

    Merge pull request #4118 from apimesh/fix-definition-allow-property

    Fix definition allow-additional-properties

Merge pull request #4110 from apimesh/issue-507
 API: add regex for Title

    Merge pull request #4120 from apimesh/issue-4111

    Hide ui for DP76

    Merge pull request #4098 from apimesh/currency

    Billing: add currency and localization support

Merge pull request #4112 from apimesh/issue-1500

    description of advanced consent

    update license notices

    Merge pull request #4109 from apimesh/issue-4000

 fix CI error for objects controller
Merge pull request #4100 from apimesh/issue-4058
 Slug service for ssl profile name only for create

    Merge pull request #4108 from apimesh/product bug

    Fix filter for products

Merge pull request #4102 from apimesh/issue-4094
Fix UI issue when importing invalid wsdl

    Merge pull request #4099 from apimesh/monetization-issue-89

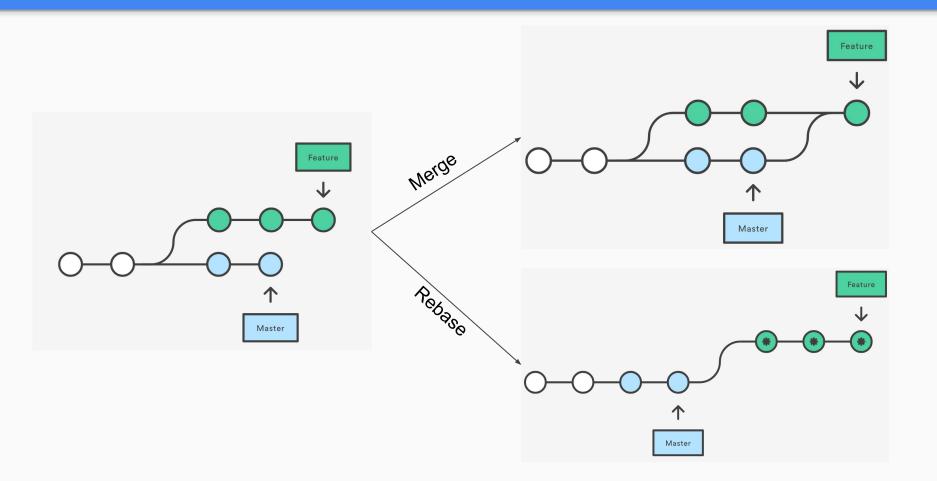
    Check for input fields non-empty

Merge pull request #4089 from apimesh/monetization-issue-85

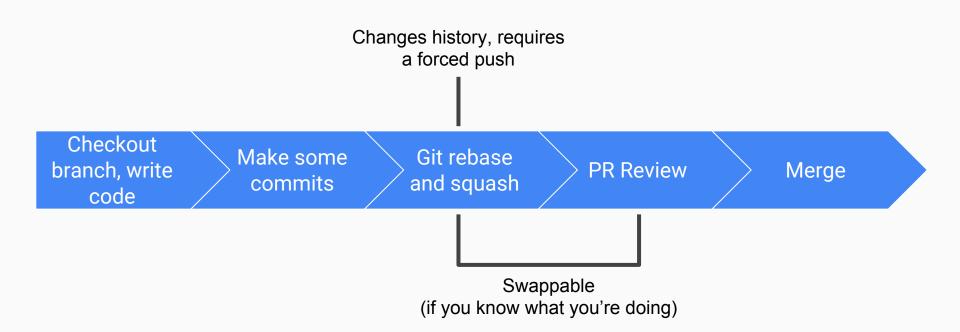
    Remove horizontal scroll from modal

Merge pull request #4092 from apimesh/issue-4059
```

What is Git Rebase?



Git Rebase Flow



TEAM SPIRIT

(Do some demos?)