

Git Workflows:
Little Red Riding Hood
and

THE BIG BAD OGRE

Git Workflows:
Little Red Riding Hood
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Git Micro Workflows:
Little Red Riding Hood

and

THE BIG BAD OGRE

Travis Douce

travis@bignerdranch.com

travisdouce@gmail.com

Twitter: [@travisdouce](https://twitter.com/travisdouce)

GitHub: [tdouce](https://github.com/tdouce)



Teach

Develop

Write

Teach

Develop

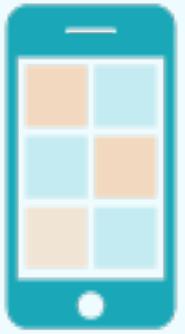
Write

iOS

iOS8



Objective-C



Design

Teach

Develop

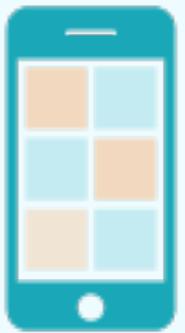
Write

iOS

iOS8



Objective-C



Design

se habla español

Teach

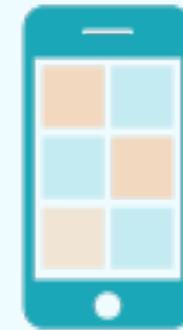
Develop

Write

Android



JAVA FOR
ANDROID



Design

Teach

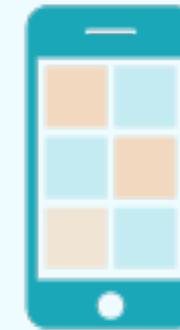
Develop

Write

Android



JAVA FOR
ANDROID



Design

se habla español

Teach

Develop

Write

Backend Web



Teach

Develop

Write

Frontend Web



Teach

Develop

Write

Mac



Cocoa

iOS
+
X

iOS and OS X Internals

Teach

Develop

Write

Teach

Develop

Write

iOS



Cocoa



UI/UX

Teach

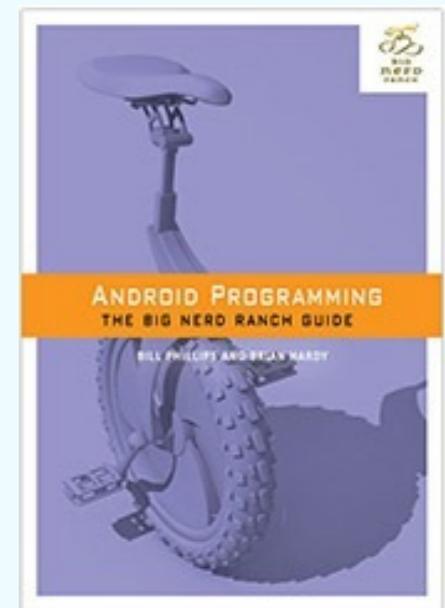
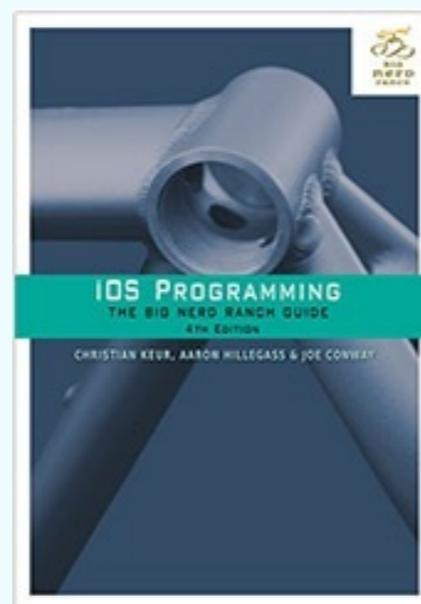
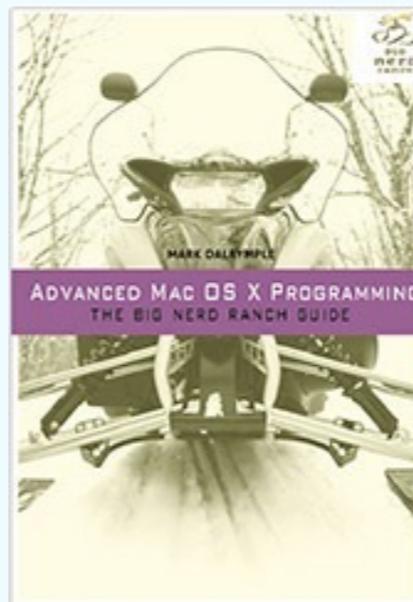
Develop

Write

Teach

Develop

Write

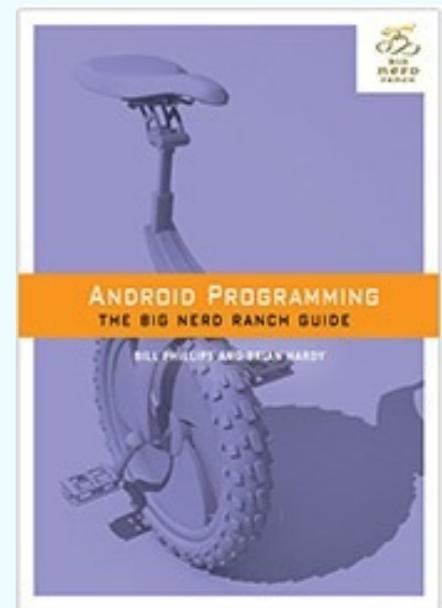
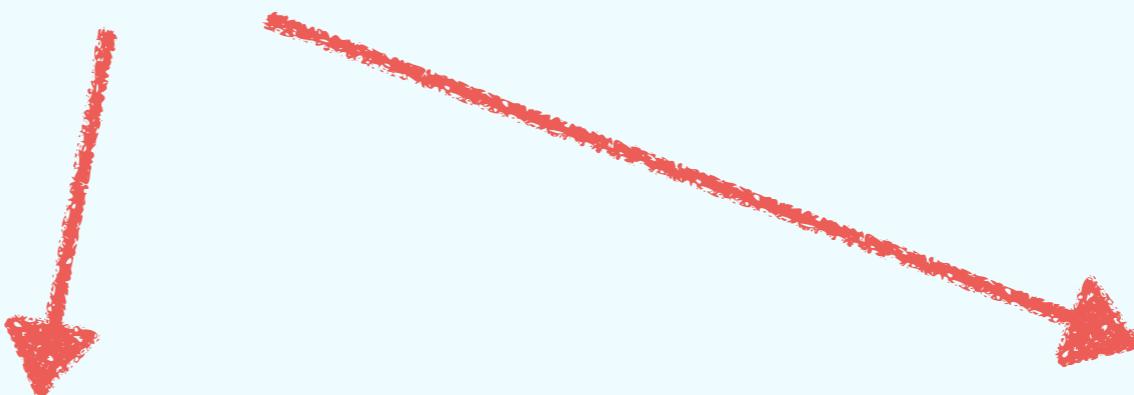
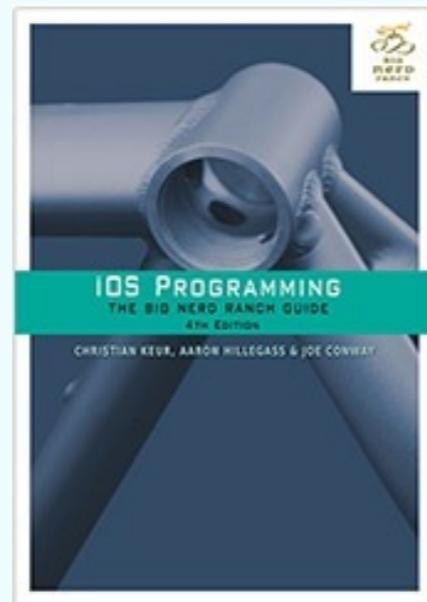


Teach

Develop

Write

#1 on Amazon



Git Micro Workflows:
Little Red Riding Hood

and

THE BIG BAD OGRE

What is Git?

What is Git?

Create repo

What is Git?
Create repo
Basic workflow

What is Git?
Create repo
Basic workflow
Understanding history

What is Git?

Create repo

Basic workflow

Understanding history

Rebase (interactive)

What is Git?

Create repo

Basic workflow

Understanding history

Rebase (interactive)

Branches

What is Git?

Create repo

Basic workflow

Understanding history

Rebase (interactive)

Branches

Merge

What is Git?

Create repo

Basic workflow

Understanding history

Rebase (interactive)

Branches

Merge

Remotes

What is Git?

What is Git?

Version Control

What is Git?

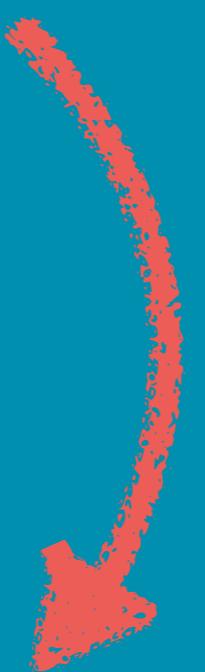
Distributed Version Control



essay.doc



essay.doc



essay_intro_1.doc



essay.doc



essay_intro_2.doc



essay_intro_1.doc





essay.doc



essay_intro_1.doc



essay_intro_2.doc

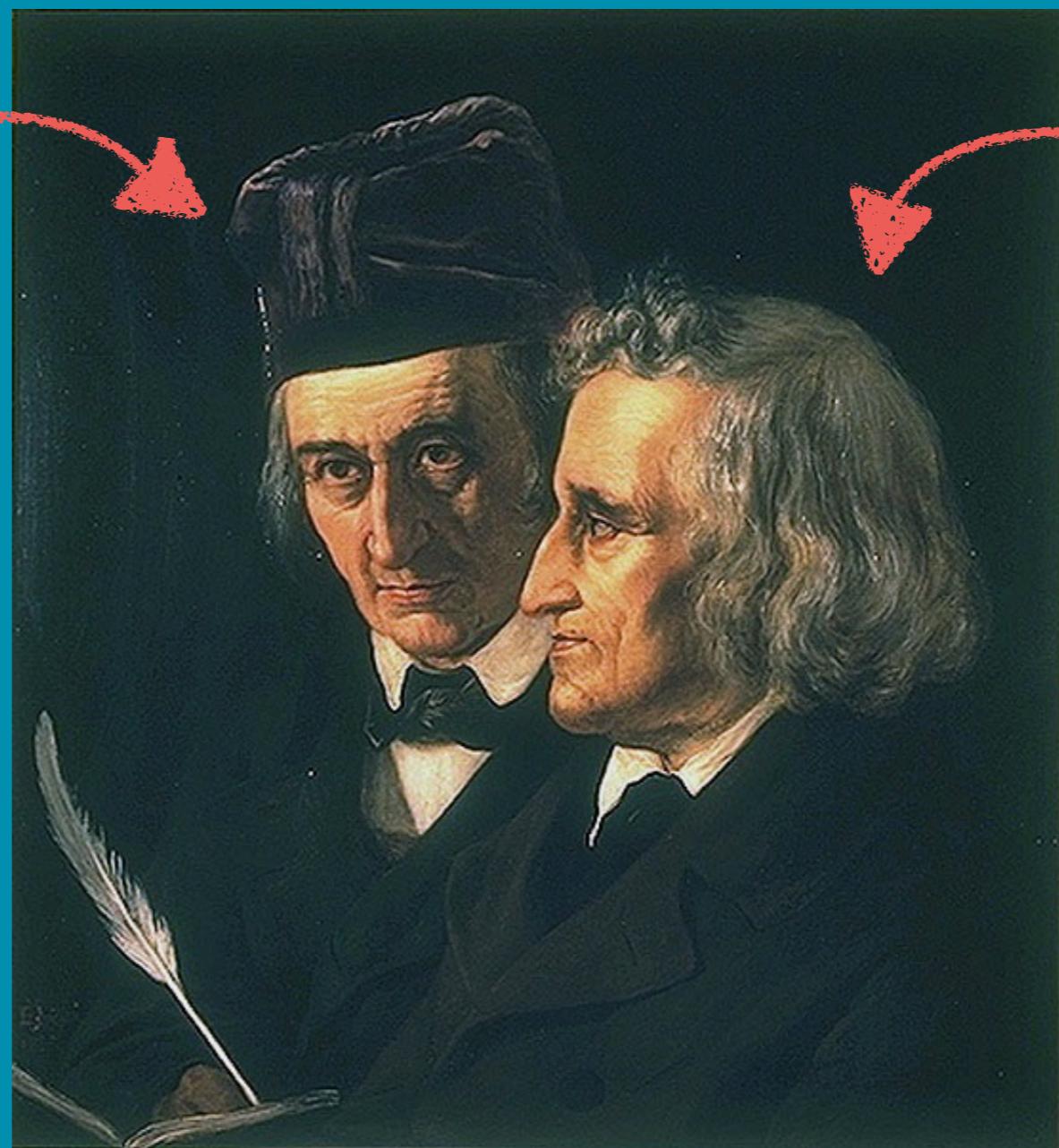


essay_intro_body_3.doc

The Brothers Grimm

Wilhelm

Jacob



Getting Started

Create Repo

```
~/fairy_tales $ git init
```

Create Repo

```
~/fairy_tales $ git init  
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/
```



Repository created in this directory

Status

```
~/fairy_tales $ git init  
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/  
~/fairy_tales $ git status
```



Status of repository



Status

```
~/fairy_tales $ git init
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/
~/fairy_tales $ git status
On branch master

Initial commit

nothing to commit (create/copy files and use "git add" to track)
```

Status

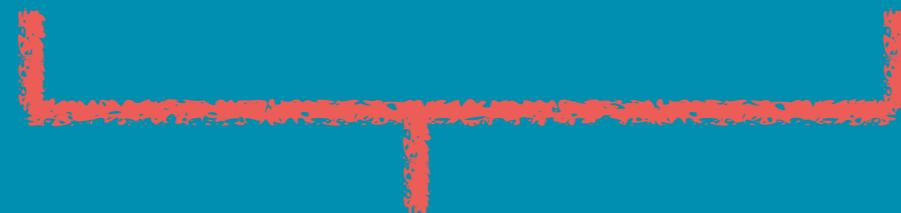
```
~/fairy_tales $ git init
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/
~/fairy_tales $ git status
On branch master

Initial commit

nothing to commit [create/copy files and use "git add" to track)
```

Create file

```
~/fairy_tales $ git init  
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/  
~/fairy_tales $ git status  
On branch master  
  
Initial commit  
  
nothing to commit (create/copy files and use "git add" to track)  
~/fairy_tales $ touch little_red_riding_hood.txt
```



Create file little_red_riding_hood.txt

Status

```
~/fairy_tales $ git init
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/
~/fairy_tales $ git status
On branch master

Initial commit

nothing to commit (create/copy files and use "git add" to track)
~/fairy_tales $ touch little_red_riding_hood.txt
~/fairy_tales $ git status
```



Status

```
~/fairy_tales $ git init
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/
~/fairy_tales $ git status
On branch master
```

Initial commit

nothing to commit (create/copy files and use "git add" to track)

```
~/fairy_tales $ touch little_red_riding_hood.txt
```

```
~/fairy_tales $ git status
```

On branch master

Initial commit

Untracked files:

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

little_red_riding_hood.txt

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

Status

```
~/fairy_tales $ git init
Initialized empty Git repository in /Users/travisdouce/fairy_tales/.git/
~/fairy_tales $ git status
On branch master
```

Initial commit

nothing to commit (create/copy files and use "git add" to track)

```
~/fairy_tales $ touch little_red_riding_hood.txt
```

```
~/fairy_tales $ git status
```

On branch master

Initial commit

Untracked files:

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

little_red_riding_hood.txt

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

Add Color

```
~/fairy_tales $ git config --global color.ui true
```



Configure output with color



Add Color

```
~/fairy_tales $ git config --global color.ui true
```

↑
Global



Add Color

```
~/fairy_tales $ git config --global color.ui true
```



Yes, color the output



Status

```
~/fairy_tales $ git config --global color.ui true  
~/fairy_tales $ git status
```

Status

```
~/fairy_tales $ git config --global color.ui true  
~/fairy_tales $ git status  
On branch master
```

Initial commit

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

little_red_riding_hood.txt

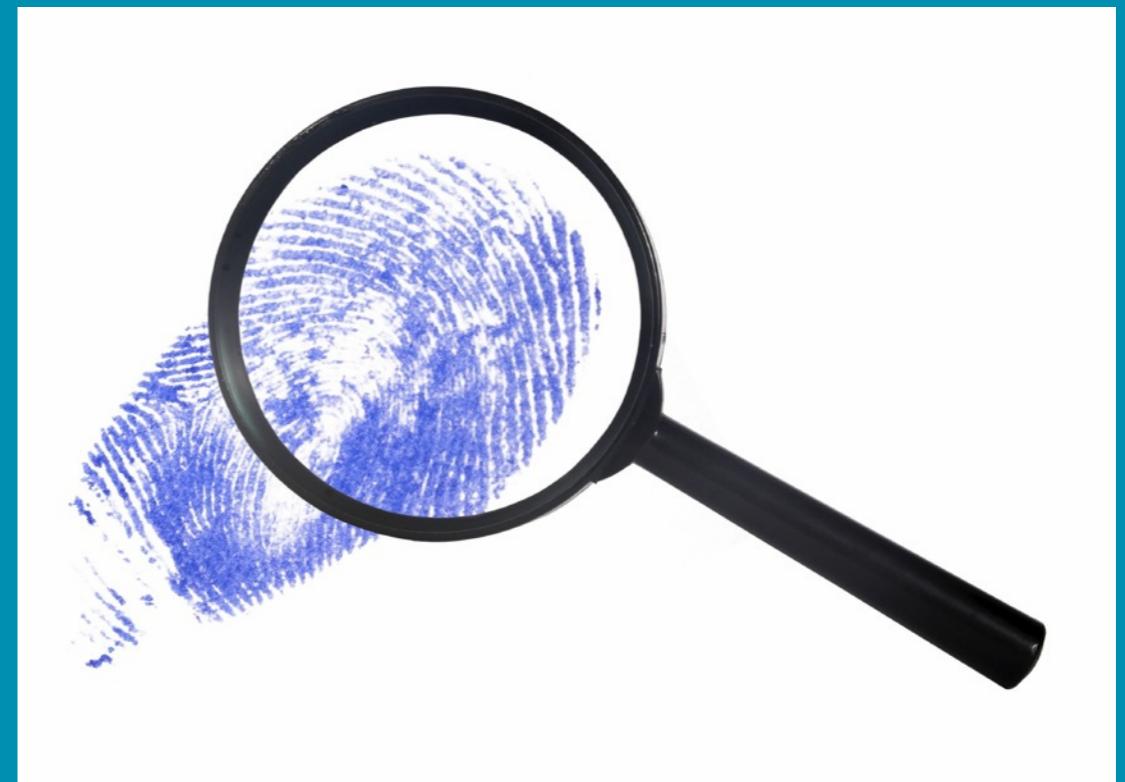
nothing added to commit but untracked files present (use "git add" to track)

Track

```
~/fairy_tales $ git add little_red_riding_hood.txt
```



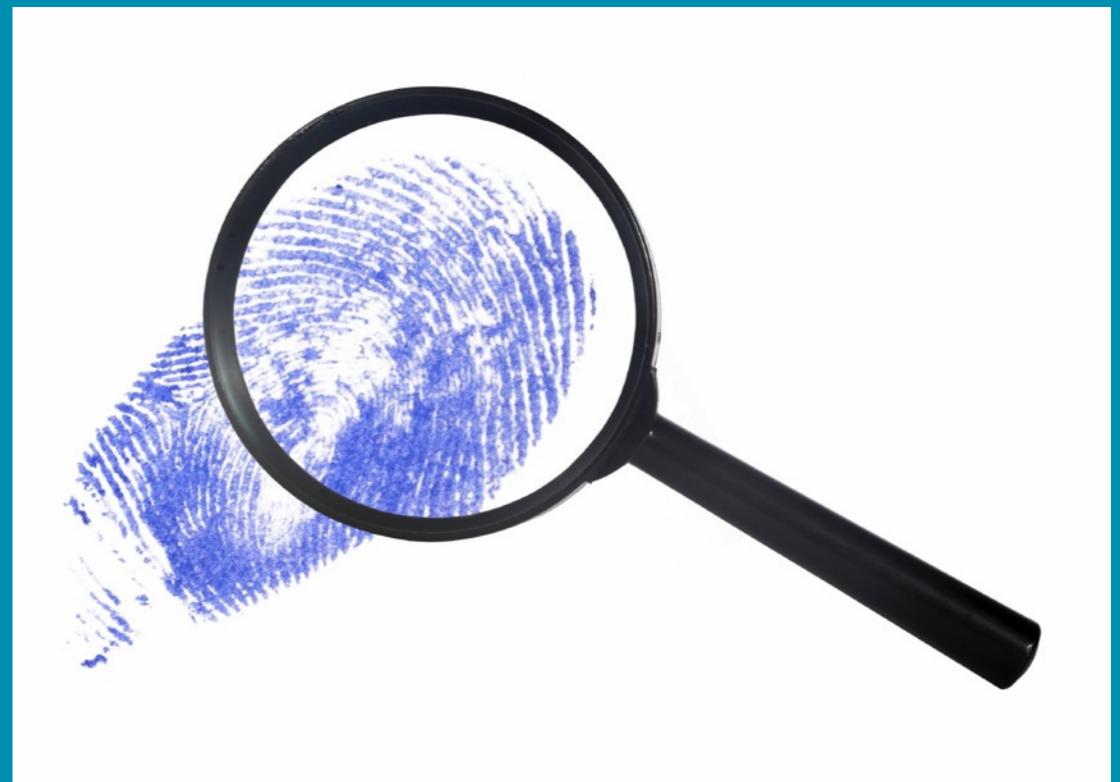
Track changes to file



Track

```
~/fairy_tales $ git add little_red_riding_hood.txt
```

Name of file



Status

```
~/fairy_tales $ git add little_red_riding_hood.txt  
~/fairy_tales $ git status
```

Staged

```
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
On branch master

Initial commit

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

    new file:  little_red_riding_hood.txt
```

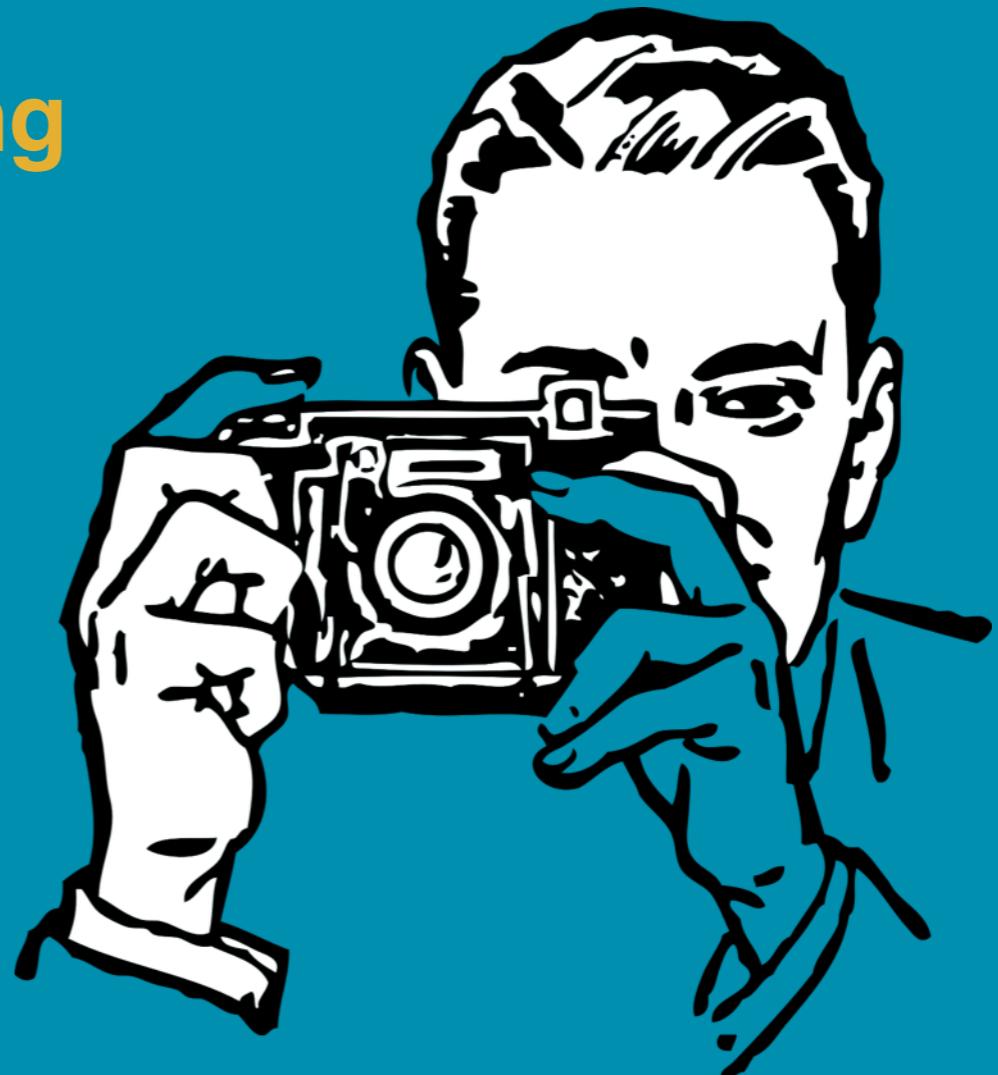


Commit

```
~/fairy_tales $ git commit
```



**Commit all files in staging
to local repository**



```
1  
2  
3  
4  
5 # Please enter the commit message for your changes. Lines starting  
6 # with '#' will be ignored, and an empty message aborts the commit.  
7 # On branch master  
8 #  
9 # Initial commit  
10 #  
11 # Changes to be committed:  
12 #       new file: little_red_riding_hood.txt  
13 #  
~  
~  
~  
~
```

opens editor



```
1 Adds little_red_riding_hood.txt
2
3
4
5 # Please enter the commit message for your changes. Lines starting
6 # with '#' will be ignored, and an empty message aborts the commit.
7 # On branch master
8 #
9 # Initial commit
10 #
11 # Changes to be committed:
12 #       new file: little_red_riding_hood.txt
13 #
```

commit message

- * See end of slides for writing great commit messages

```
1 Adds little_red_riding_hood.txt
2
3 We will add text to this file.
4
5 # Please enter the commit message for your changes. Lines starting
6 # with '#' will be ignored, and an empty message aborts the commit.
7 # On branch master
8 #
9 # Initial commit
10 #
11 # Changes to be committed:
12 #       new file: little_red_riding_hood.txt
13 #
```



extended description

- * See end of slides for writing great commit messages

```
1 Adds little_red_riding_hood.txt
2
3 We will add text to this file.
4
5 # Please enter the commit message for your changes. Lines starting
6 # with '#' will be ignored, and an empty message aborts the commit.
7 # On branch master
8 #
9 # Initial commit
10 #
11 # Changes to be committed:
12 #       new file: little_red_riding_hood.txt
13 #
```

~

~

~

~

save and close

Commit

```
~/fairy_tales $ git commit  
[master (root-commit) b28cc09] Adds little_red_riding_hood.text  
1 file changed, 0 insertions(+), 0 deletions(-)  
create mode 100644 little_red_riding_hood.txt
```

It worked!

Status

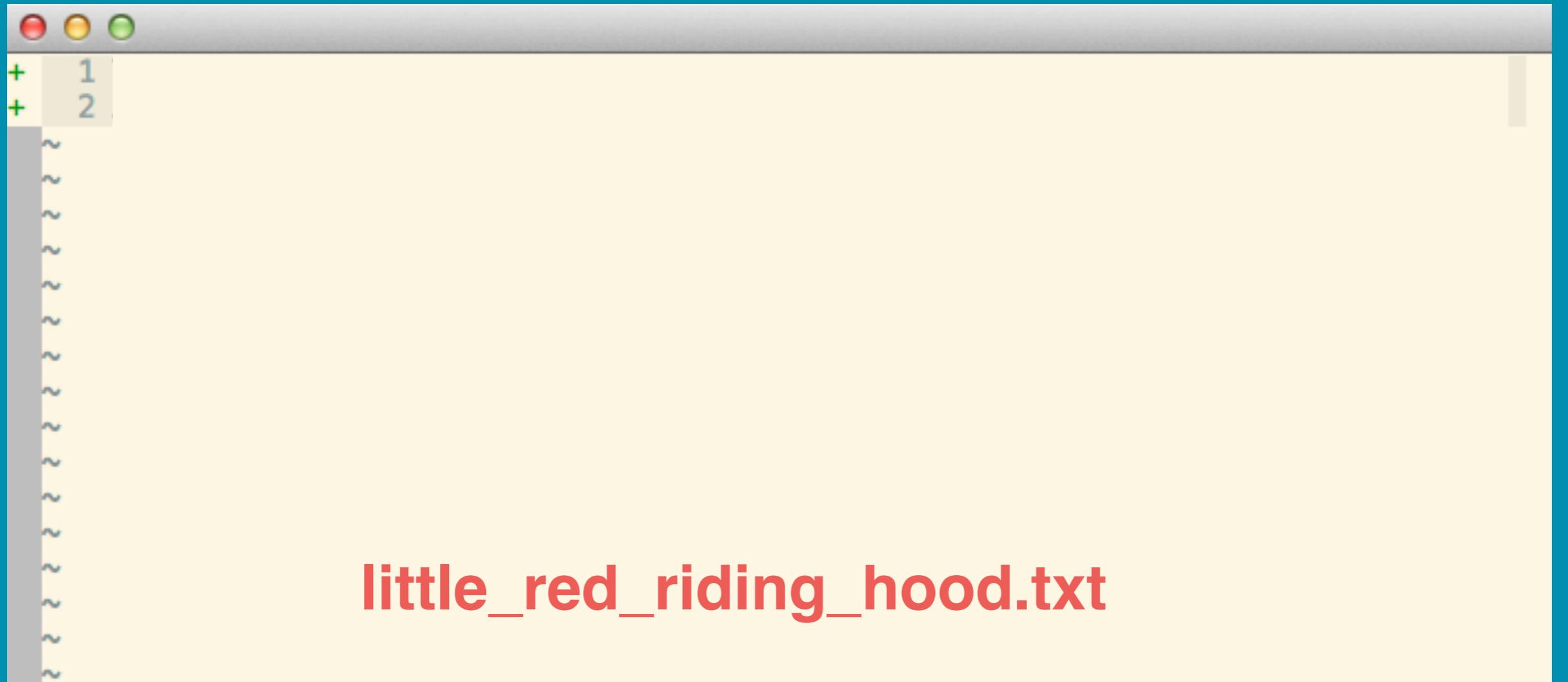
```
~/fairy_tales $ git commit  
[master (root-commit) b28cc09] Adds little_red_riding_hood.text  
1 file changed, 0 insertions(+), 0 deletions(-)  
create mode 100644 little_red_riding_hood.txt  
~/fairy_tales $ git status
```

Status

```
~/fairy_tales $ git commit  
[master (root-commit) b28cc09] Adds little_red_riding_hood.text  
1 file changed, 0 insertions(+), 0 deletions(-)  
create mode 100644 little_red_riding_hood.txt  
~/fairy_tales $ git status  
On branch master  
nothing to commit, working directory clean
```

Jacob writes ...

The Little Red Riding Hood

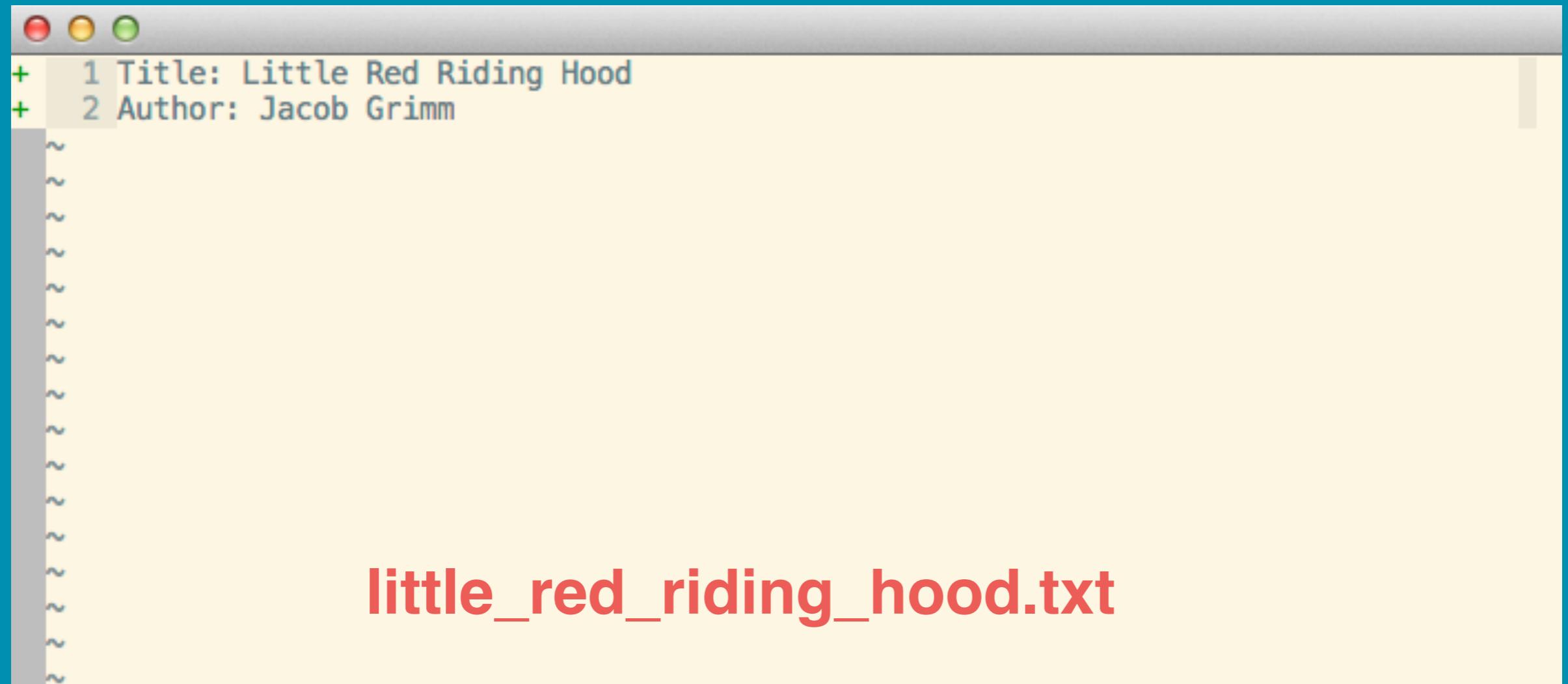


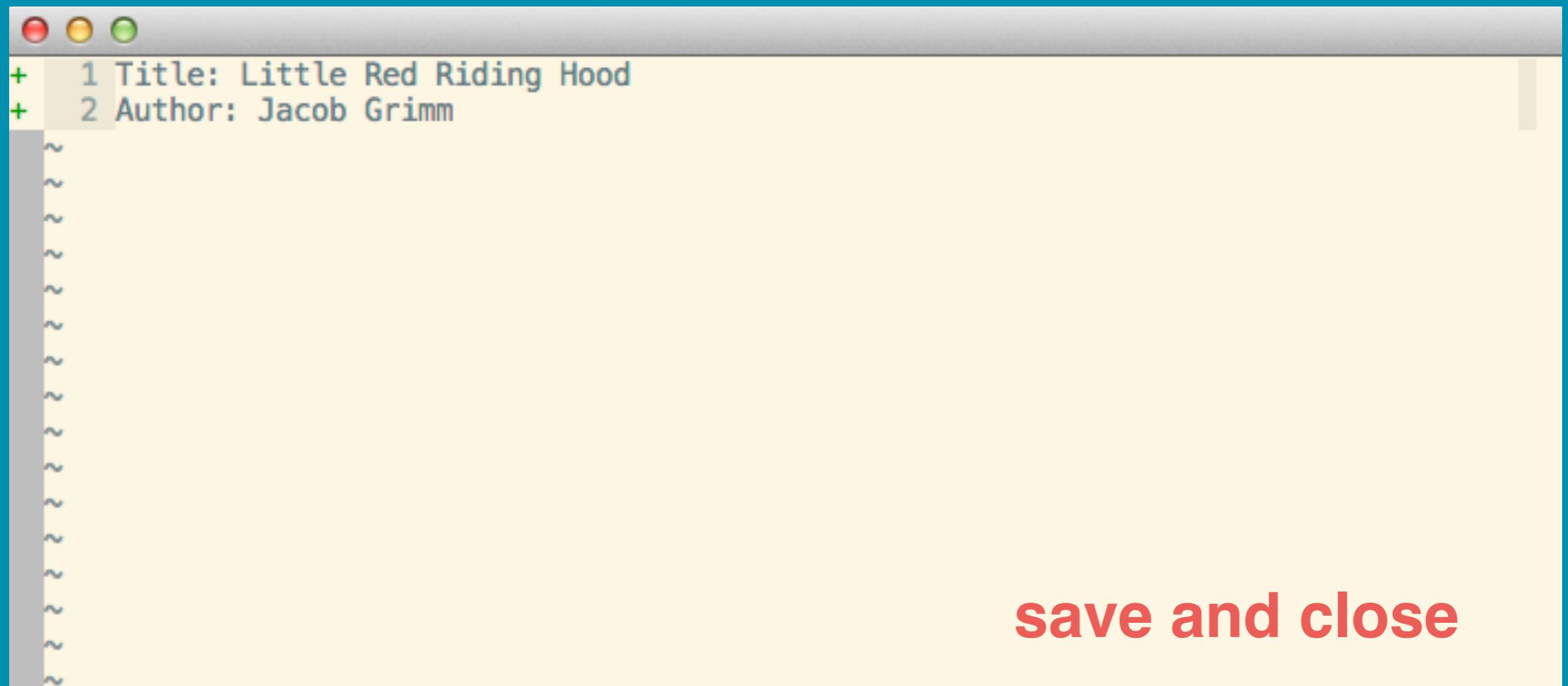
little_red_riding_hood.txt

A screenshot of a Mac OS X application window. The window title is "little_red_riding_hood.txt". The main pane displays a text document with the following content:

```
+ 1 Title: Little Red Riding Hood
+ 2
~
```

The text is color-coded: "Title:" is in red, "Little Red Riding Hood" is in blue, and the numbers "1" and "2" are in green. The application has a standard OS X look with a toolbar at the top and a vertical scroll bar on the right side.





Status

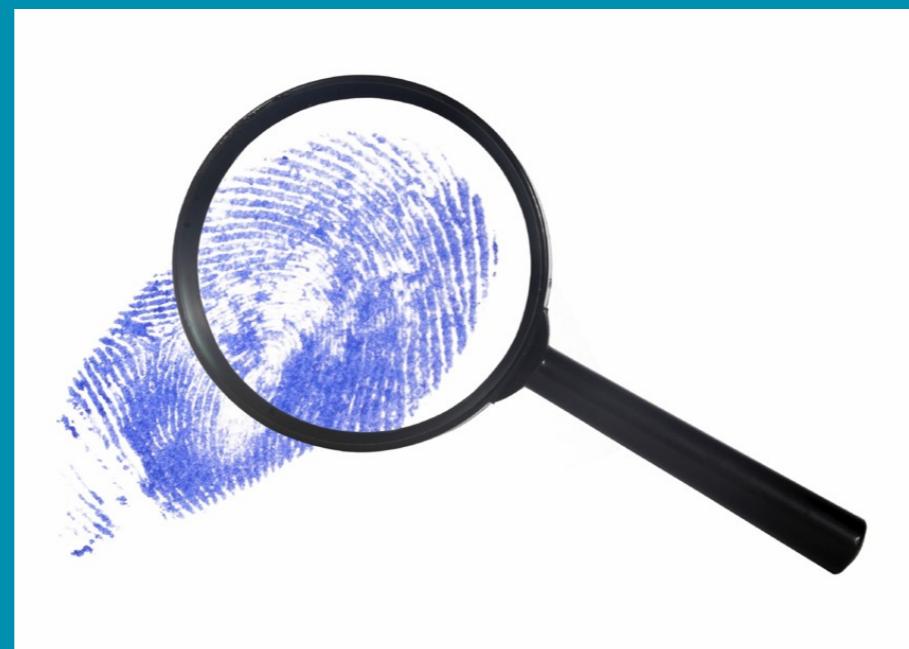
```
~/fairy_tales $ git status
```

Modified

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt ←-----
```

no changes added to commit (use "git add" and/or "git commit -a")



Stage

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
```

What's the purpose of
Staging?

What's the purpose of
Staging?

All files in staging will be
included in next commit

Status

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
```

Status

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

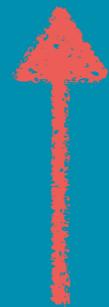
no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   little_red_riding_hood.txt
```



Commit

```
~/fairy_tales $ git commit
```



**Commit all files in staging
to local repository**

```
1
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch master
6 # Changes to be committed:
7 #       modified:   little_red_riding_hood.txt
8 #
~
```

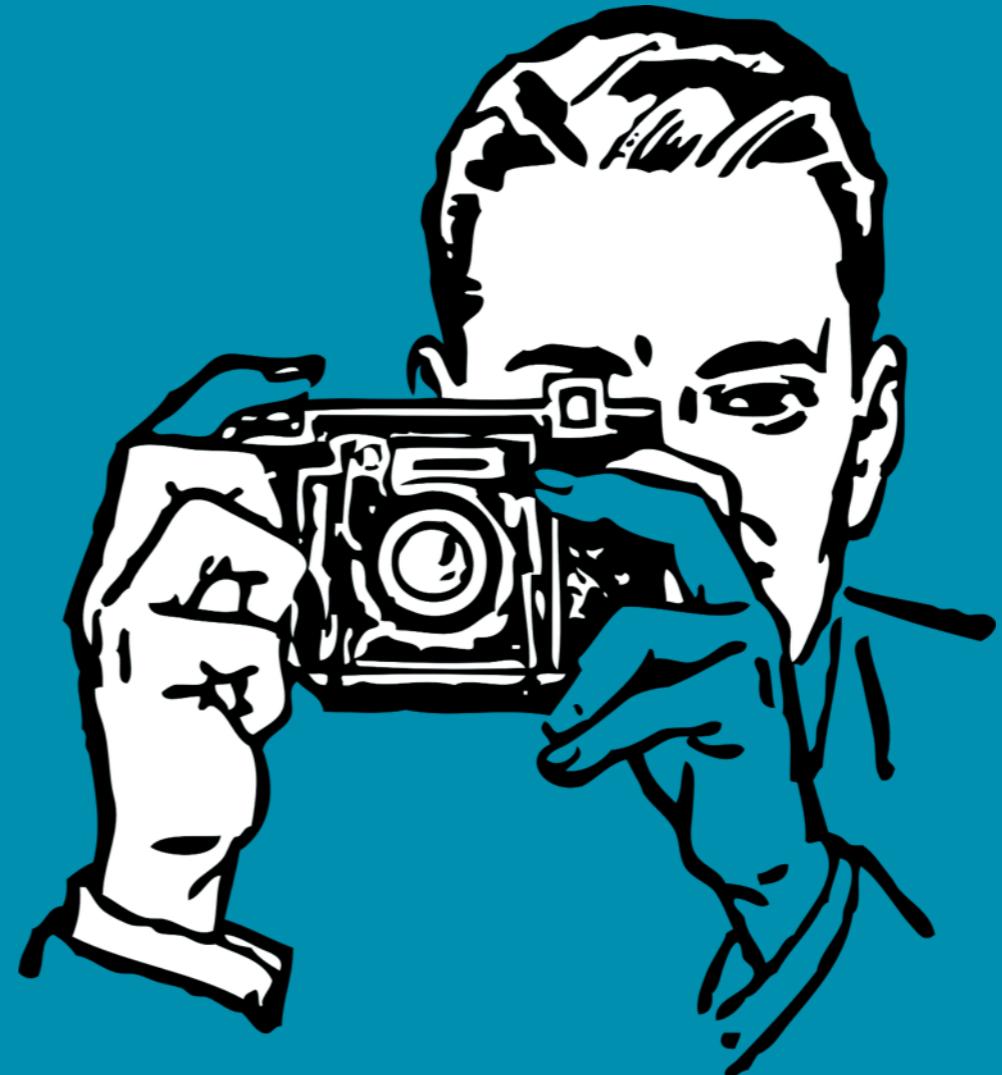
opens editor


```
1 Adds title and author
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch master
6 # Changes to be committed:
7 #       modified: little_red_riding_hood.txt
8 # ~
~
```

save and close

Commit

```
~/fairy_tales $ git commit  
[master 42563b0] Adds title and author  
1 file changed, 2 insertions(+)
```



Status

```
~/fairy_tales $ git commit  
[master 42563b0] Adds title and author  
 1 file changed, 2 insertions(+)  
~/fairy_tales $ git status
```

Status

```
~/fairy_tales $ git commit  
[master 42563b0] Adds title and author  
 1 file changed, 2 insertions(+)  
~/fairy_tales $ git status  
On branch master  
nothing to commit, working directory clean
```

Status

```
~/fairy_tales $ git commit  
[master 42563b0] Adds title and author  
 1 file changed, 2 insertions(+)  
~/fairy_tales $ git status  
On branch master  
nothing to commit, working directory clean
```

Work flow #1

Work flow #1

Modified

Work flow #1

Modified → Staged

Work flow #1

Modified → Staged → Committed

Jacob writes an introduction

Jacob writes an introduction
and that is **HARD**


```
○ ○ ○ little_red_riding_hood.txt (~/fairy_tales) - VIM4
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a little girl.
```

little_red_riding_hood.txt



A screenshot of a terminal window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The text file contains the following content:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a little girl.
```

The line "Once upon a time there was a little girl." is highlighted in red, indicating it is selected or being edited. The number "4" is also red. The rest of the text is in black. The terminal has a light gray background and a dark gray sidebar on the left.

save and close

Status

```
~/fairy_tales $ git status
```

Modified

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
```

Stage

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
```

Status

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
```

Staged

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   little_red_riding_hood.txt
```

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   little_red_riding_hood.txt

~/fairy_tales $ git commit
```

opens editor

commit message

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git status
On branch master
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    modified:   little_red_riding_hood.txt

~/fairy_tales $ git commit
[master 274c99a] Adds introductory sentence
 1 file changed, 2 insertions(+)
```

```
○ ○ ○ little_red_riding_hood.txt (~/fairy_tales) - VIM4
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
+ 4 Once upon a time there was a little girl.
```

little_red_riding_hood.txt

```
○○○ little_red_riding_hood.txt (~/fairy_tales) - VIM4  
1 Title: Little Red Riding Hood  
2 Author: Jacob Grimm  
3  
+ 4 Once upon a time there was a  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~  
  


# little_red_riding_hood.txt

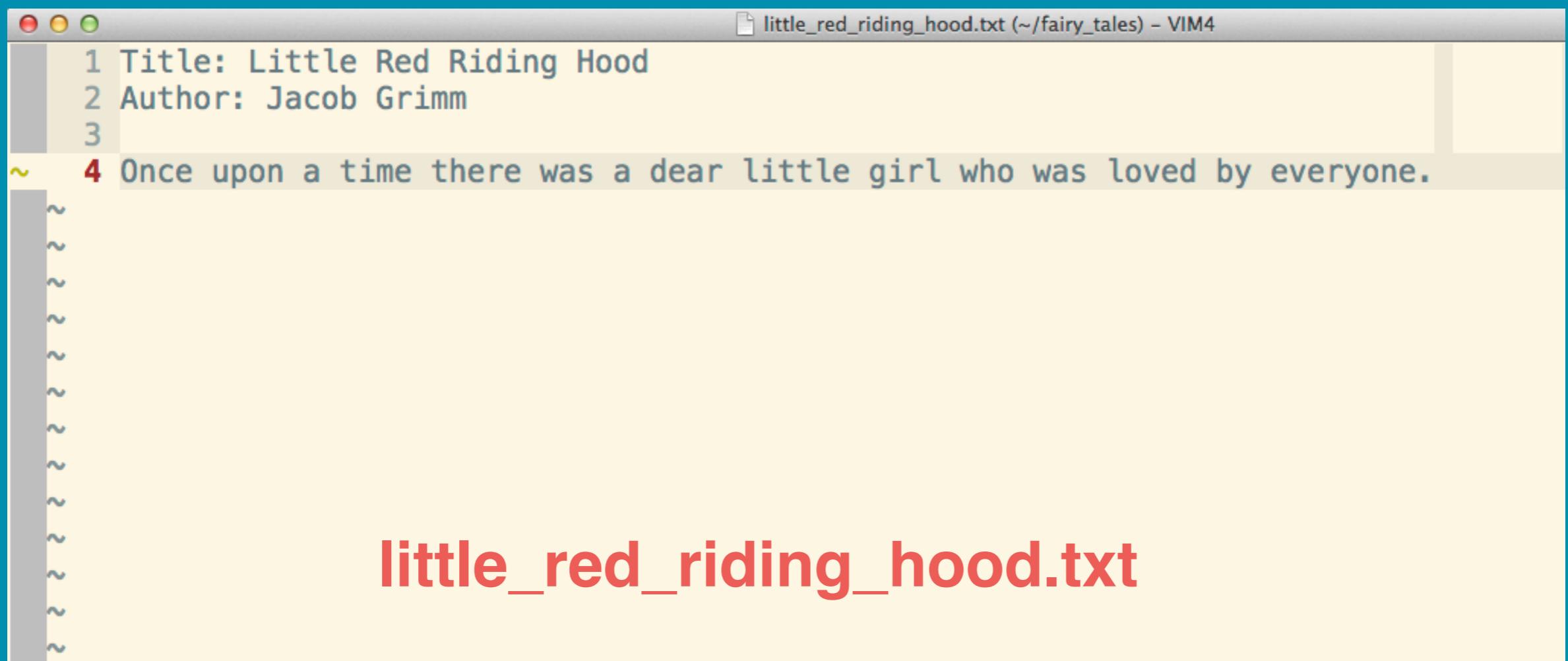

```

little_red_riding_hood.txt

little_red_riding_hood.txt (~/fairy_tales) – VIM4

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl
```

little_red_riding_hood.txt

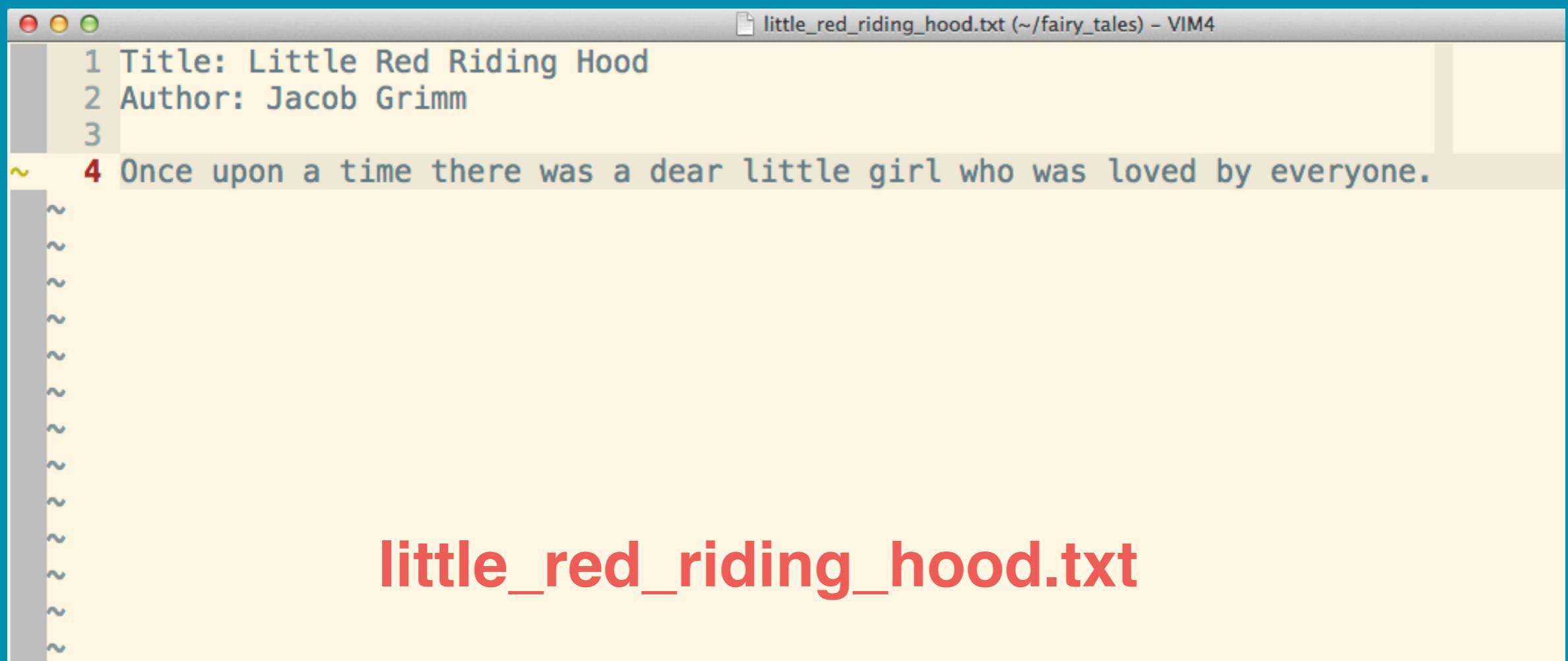


A screenshot of a VIM4 text editor window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The window shows the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone.
```

The text is displayed in a monospaced font. Lines 1 and 2 are standard text. Line 3 is a blank line. Line 4 starts with a yellow tilde (~) and is highlighted in red, indicating it is the current line of focus. The background of the editor is light gray, and the status bar at the bottom is dark blue.

little_red_riding_hood.txt

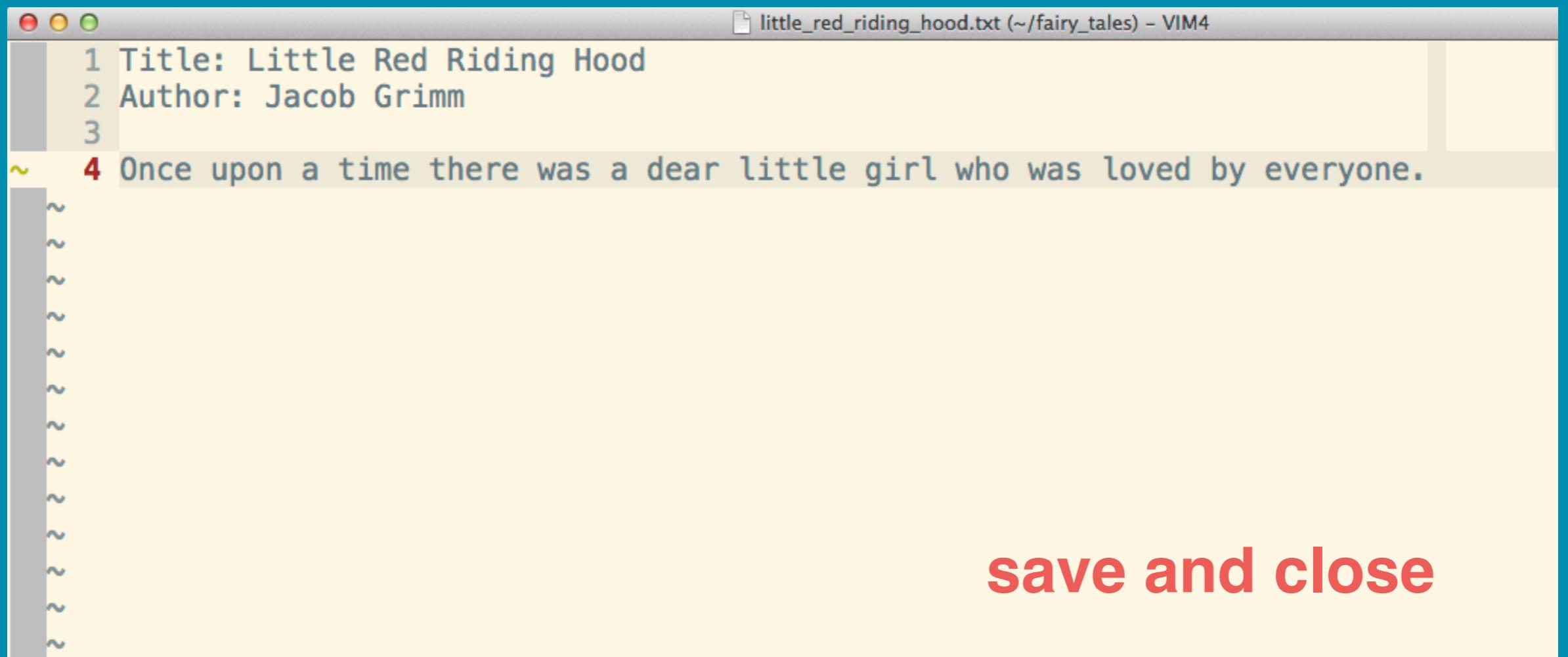


little_red_riding_hood.txt (~/fairy_tales) – VIM4

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone.
```

little_red_riding_hood.txt

It's good, but ...



A screenshot of a VIM4 window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The buffer contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone.
```

The line "Once upon a time..." is highlighted in red, indicating it is selected or being edited. The status bar at the bottom shows the file name and path: "little_red_riding_hood.txt (~/fairy_tales) - VIM4".

save and close

It's good, but ...

Make a WIP commit

Make a WIP commit

Work In Progress

Make a WIP commit

Work In Progress

Just a convention

Status

```
~/fairy_tales $ git status
```

Status

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
```

Stage

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
```

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git commit -m 'WIP'
```



Commit and provide message

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git commit -m 'WIP'
```



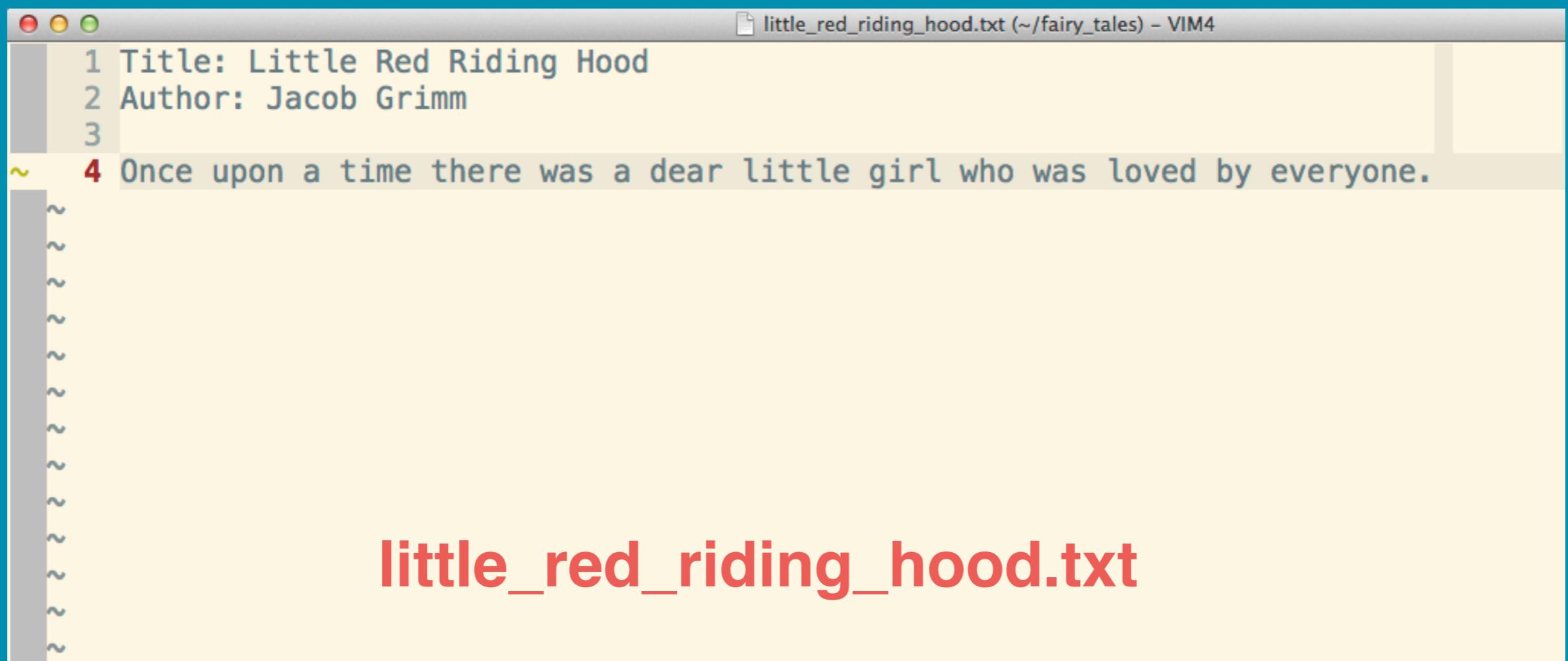
Commit message

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git commit -m 'WIP'
[master a1e9d83] WIP
 1 file changed, 1 insertion(+), 1 deletion(-)
```



A screenshot of a VIM4 text editor window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The window displays the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone.
```

The text is in a monospaced font. Lines 1, 2, and 3 are standard text. Line 4 starts with a red number "4" followed by the story text. The file path is visible in the title bar.

little_red_riding_hood.txt

A screenshot of a VIM4 text editor window. The title bar reads "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The buffer contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone who
+ 5 looked at her
```

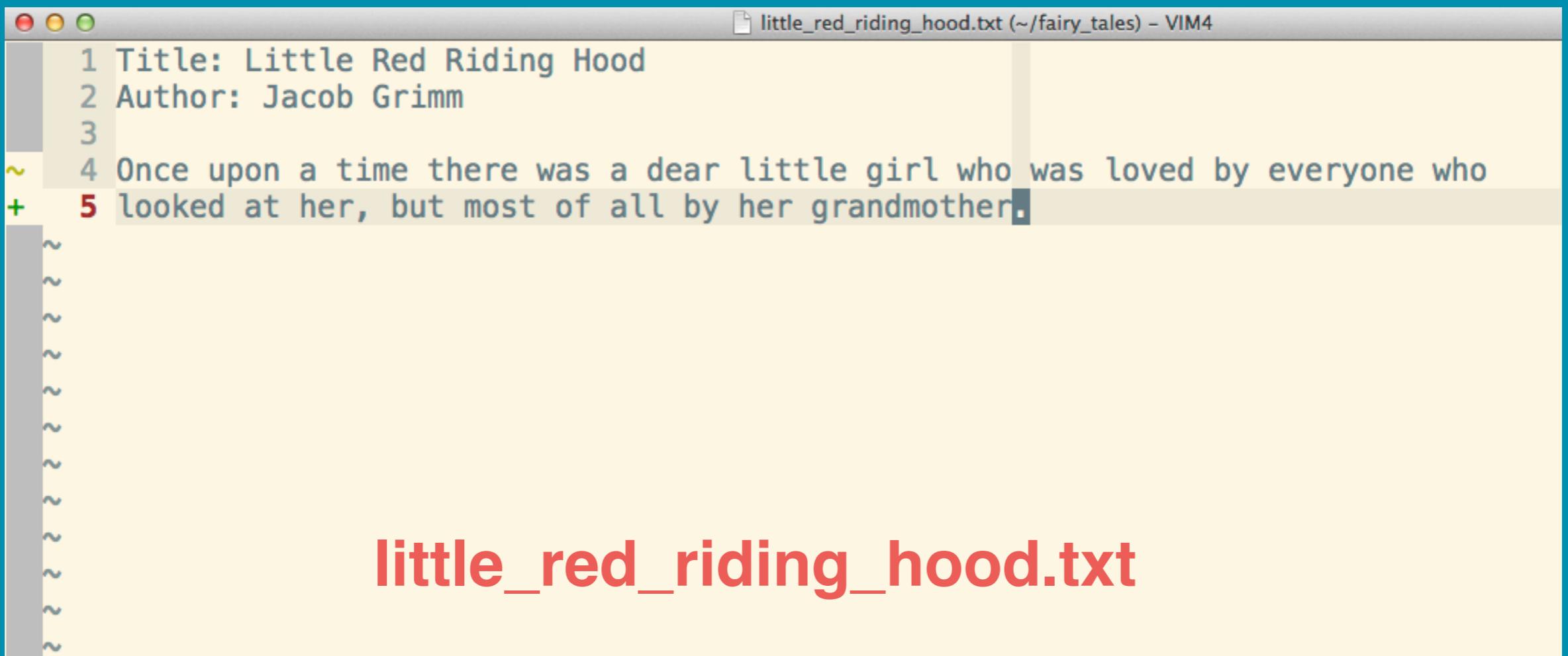
The text is displayed in a monospaced font. Lines 1 and 2 are standard text. Line 3 is a blank line. Lines 4 and 5 begin with a tilde (~) and a plus sign (+) respectively, indicating they are part of a list or a continuation of a list. The word "looked" in line 5 is highlighted in red.

little_red_riding_hood.txt

```
little_red_riding_hood.txt (~/fairy_tales) - VIM4
```

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone who
+ 5 looked at her, but most of all
```

little_red_riding_hood.txt

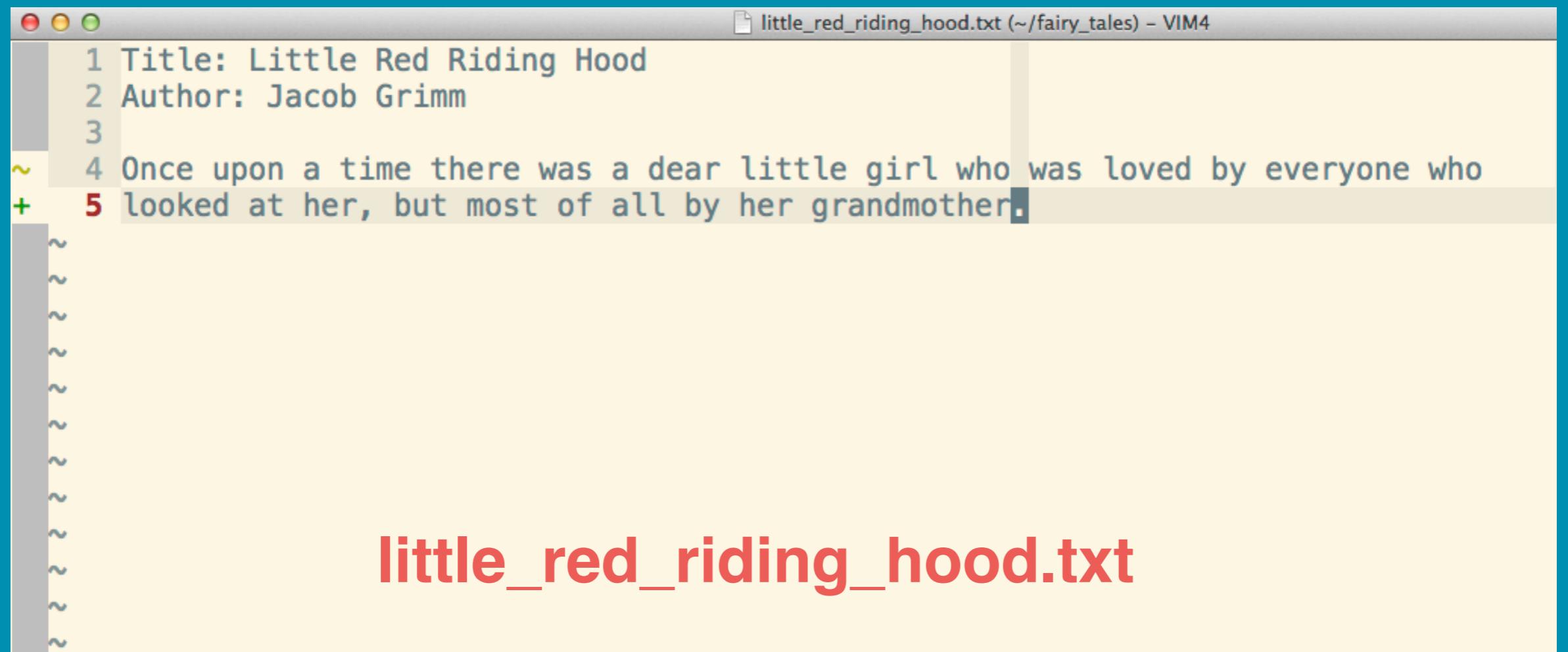


A screenshot of a VIM4 text editor window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The window displays the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone who
+ 5 looked at her, but most of all by her grandmother.
```

The text is displayed in a monospaced font. Lines 1 and 2 are standard text. Line 3 is a blank line. Lines 4 and 5 are preceded by status indicators: a yellow tilde (~) for line 4 and a green plus sign (+) for line 5. The text itself is in a light blue color. The background of the editor is white, and the status bar at the bottom shows a series of tilde (~) characters.

little_red_riding_hood.txt



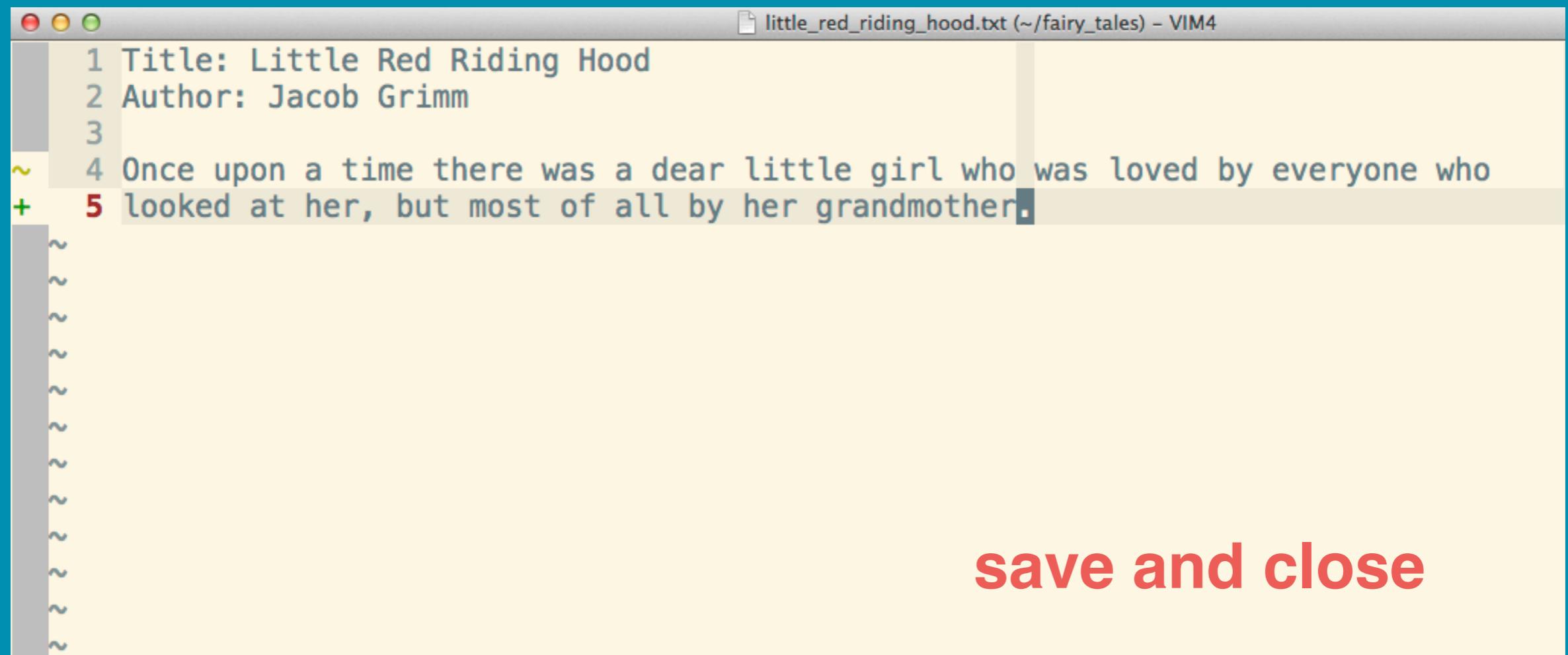
A screenshot of a VIM4 terminal window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The window displays the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone who
+ 5 looked at her, but most of all by her grandmother.
```

The text is in a monospaced font, with line numbers on the left. Lines 4 and 5 are preceded by a yellow tilde (~) and a green plus (+) respectively, indicating they are new or modified lines. The background of the terminal is light beige, and the code block above is enclosed in a light gray border.

little_red_riding_hood.txt

Yes, this is it!



A screenshot of a VIM4 window titled "little_red_riding_hood.txt (~/fairy_tales) - VIM4". The window displays the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
~ 4 Once upon a time there was a dear little girl who was loved by everyone who
+ 5 looked at her, but most of all by her grandmother.
```

The status bar at the bottom shows the file name and path: "little_red_riding_hood.txt (~/fairy_tales) - VIM4".

save and close

Yes, this is it!

Status

```
~/fairy_tales $ git status
```

Modified

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
```

Stage

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
```

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git commit -m 'WIP'
```



Commit and provide message

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git commit -m 'WIP'
```



Commit message

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.txt

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.txt
~/fairy_tales $ git commit
[master 3096080] WIP
 1 file changed, 2 insertions(+), 1 deletion(-)
```

Work Flow #2

Work Flow #2

Make WIP commits

Work Flow #2

Make WIP commits

Developing complicated features

Work Flow #2

Make WIP commits

Developing complicated features

PRESERVE each implementation

Git history

Git history

(and the many ways to view it)

Understanding git history



Log

```
~/fairy_tales $ git log
```

Log

```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Log

Newest



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Oldest

Log

Newest

#5

```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt



Oldest

Log

Newest



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

#4

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Oldest

Log

Newest



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

#3

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Oldest



Log

Newest



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

#2

Oldest

Log

Newest



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

#1

Oldest



Log

Newest

Author



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Oldest

Log

Newest

Date



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Oldest

Log

Newest

Commit message



```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Oldest

What are these?

```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

These are shas

```
~/fairy_tales $ git log  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
commit 46c9892dc94c2e8b45e27ad6c77558c4b3376943  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:13:44 2015 -0500
```

WIP

```
commit 89793943abafff177708cd1cbd87351a45780437  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:12:11 2015 -0500
```

Adds introductory sentence

```
commit c58a5c53ee6d6921e34896554c67cbcfa8c4d53a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:10:48 2015 -0500
```

Adds title and author

```
commit 7788dedb52cd6cf51dc1f250bca37875950e8499  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:08:41 2015 -0500
```

Adds little_red_riding_hood.txt

Unique identifier for commit

Another way
to view history

Log with patch

```
~/fairy_tales $ git log --patch
```

L
P

A more details view of history

Log with patch

```
~/fairy_tales $ git log --patch
```



Patch flag

Log with patch

```
~/fairy_tales $ git log --patch  
commit 6067016b061a6e9f170eb5c188fa9f03b627d79a  
Author: tdouce <travisdouce@gmail.com>  
Date:   Fri Jan 16 15:14:41 2015 -0500
```

WIP

```
diff --git a/little_red_riding_hood.text b/little_red_riding_hood.text  
index 557bea2..e66b0b0 100644  
--- a/little_red_riding_hood.text  
+++ b/little_red_riding_hood.text  
@@ -1,4 +1,5 @@  
 Title: Little Red Riding Hood  
 Author: Jacob Grimm
```

Patch

```
-Once upon a time there was a dear little girl who was loved by everyone.  
+Once upon a time there was a dear little girl who was loved by everyone who  
+looked at her, but most of all her grandmother.
```

*Displaying most recent commit only

And, another way
to view history

Log as graph

```
~/fairy_tales $ git lg
```

Jacob configured a git alias, lg.
When entered, history is displayed a graph

*lg alias at end of slides

Log as graph

Newest



```
~/fairy_tales $ git lg
* 6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)
|       WIP - tdouce
* 46c9892 - Fri, 16 Jan 2015 15:13:44 -0500 (20 minutes ago)
|       WIP - tdouce
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```

Oldest



Log as graph

Newest

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```

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Oldest

Log as graph

Newest

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* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (25 minutes ago)
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```



Commit message

Oldest

Log as graph

Newest

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```

Author



Oldest

Log as graph

Newest

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Date



Oldest

Log as graph

Newest

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Oldest

Log as graph

Newest

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```



Oldest

What is HEAD?

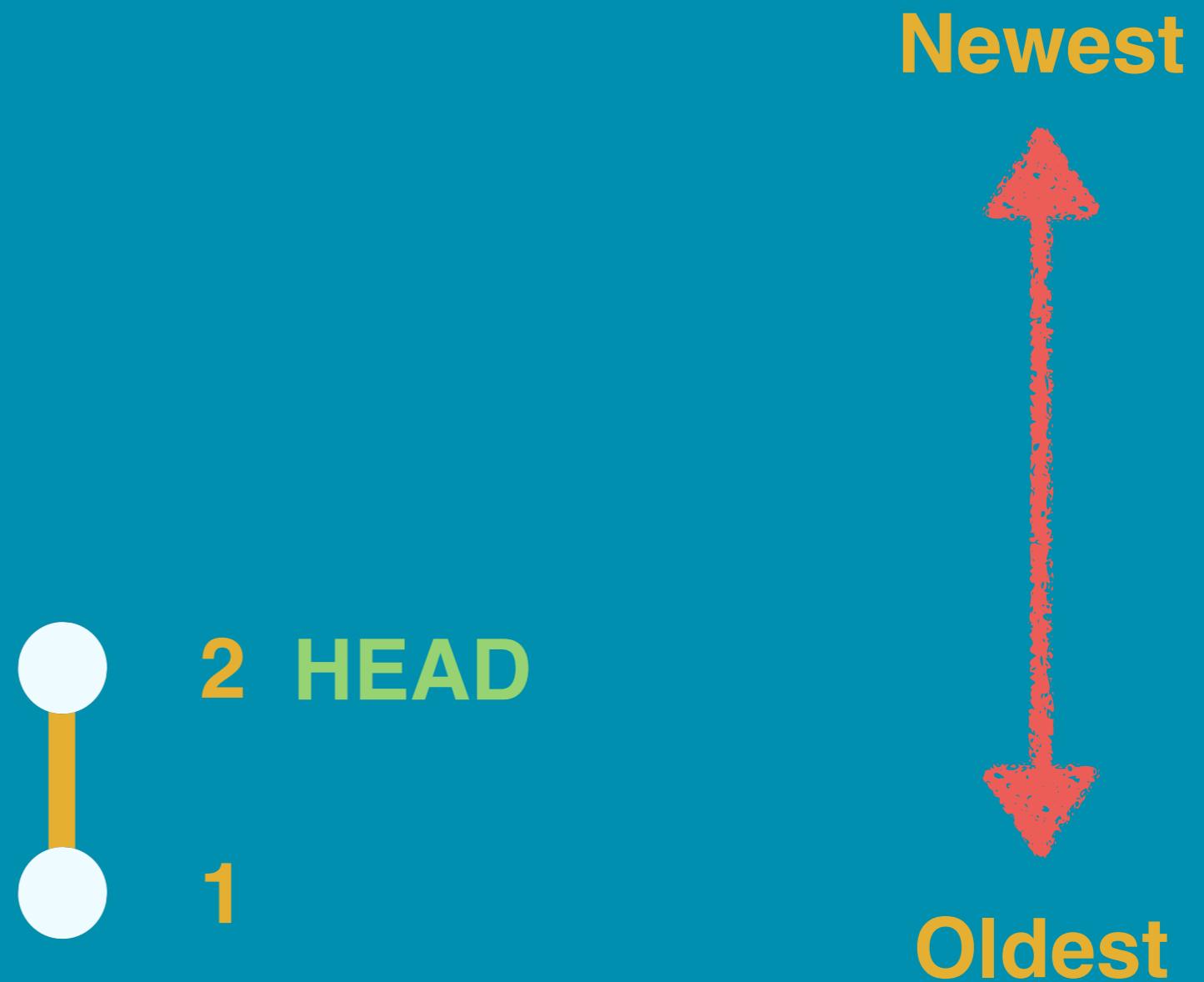
```
~/fairy_tales $ git log
```

```
* 6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)
|       WIP - tdouce
* 46c9892 - Fri, 16 Jan 2015 15:13:44 -0500 (20 minutes ago)
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```

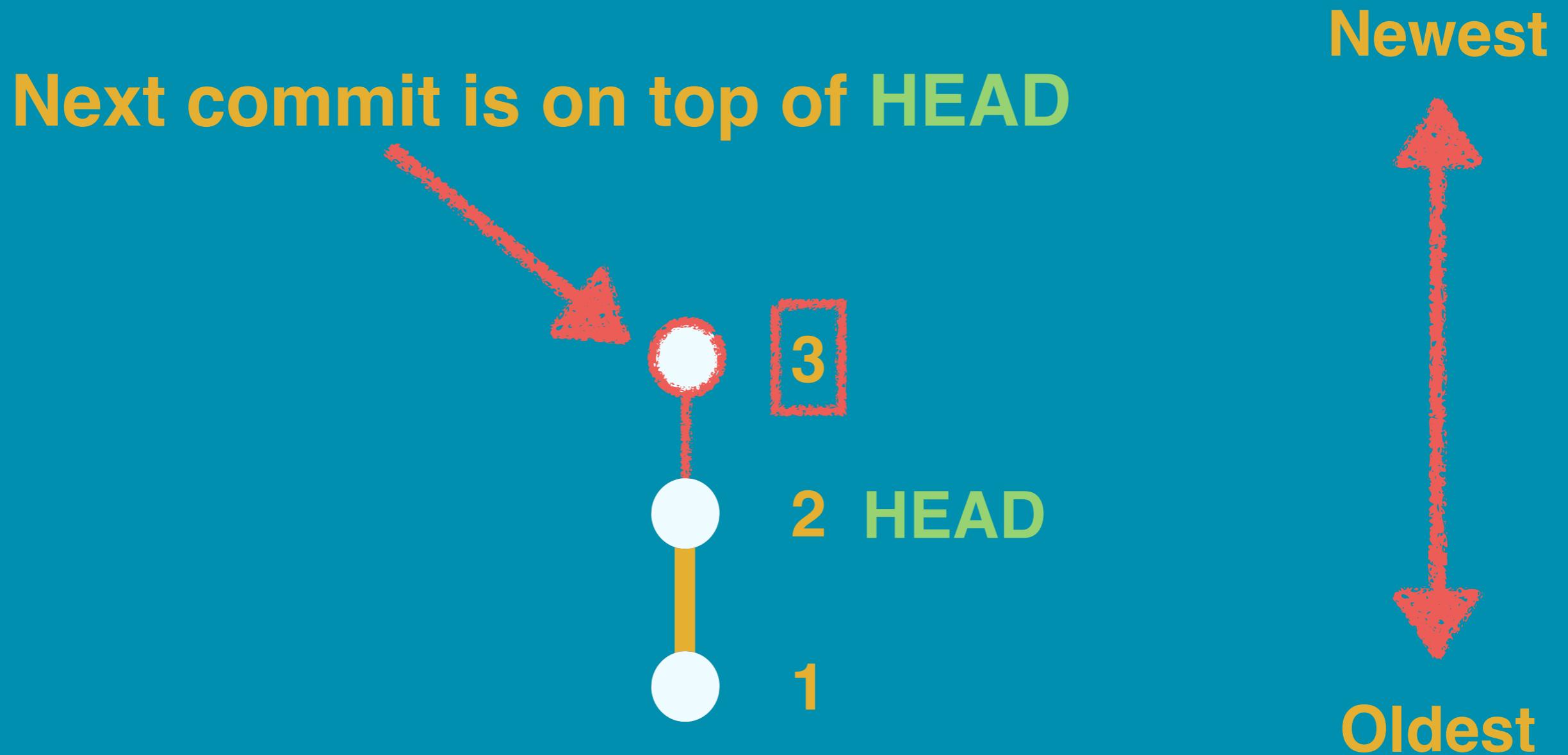
HEAD

Parent of next commit

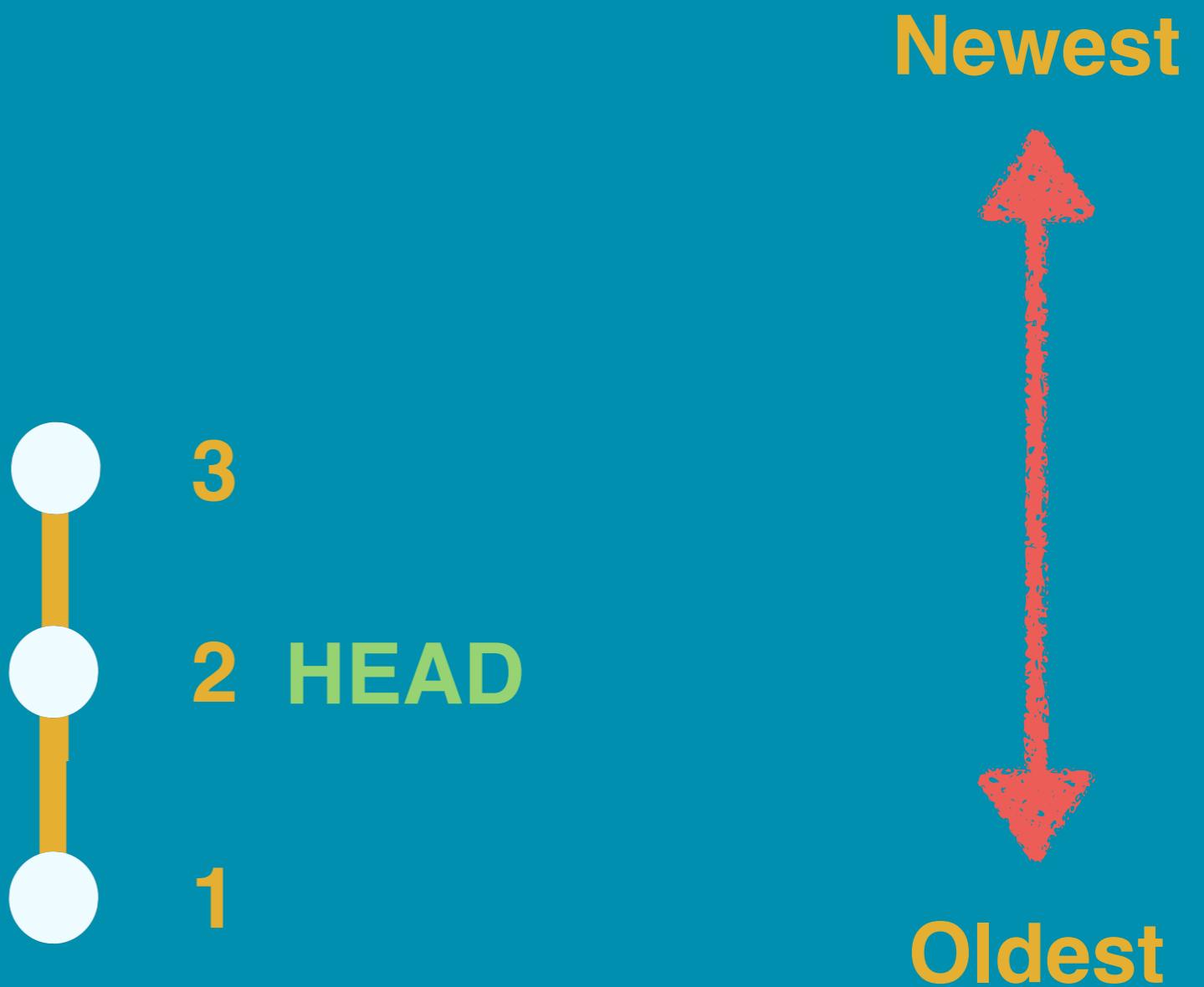
What is HEAD?



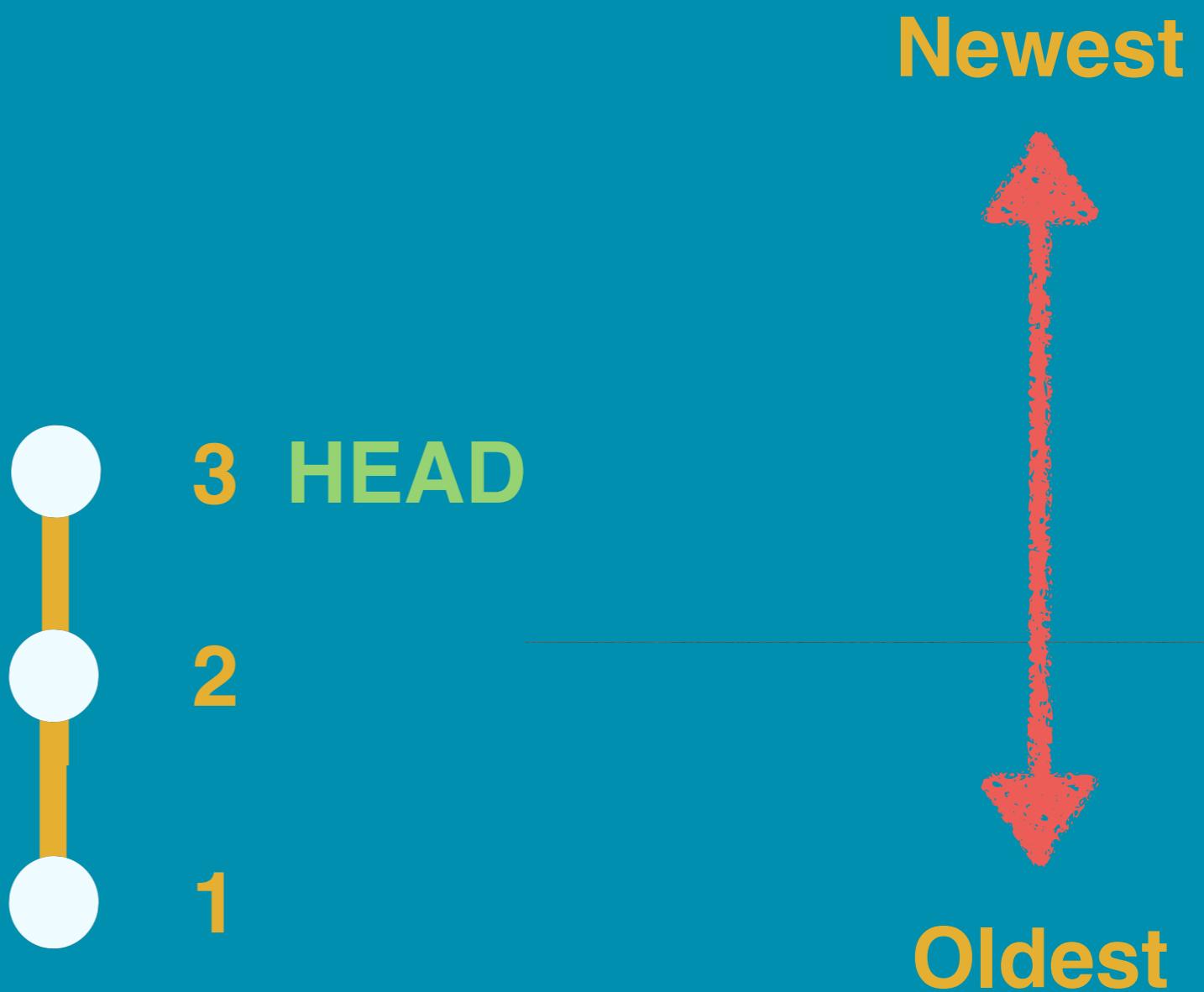
What is HEAD?



What is HEAD?



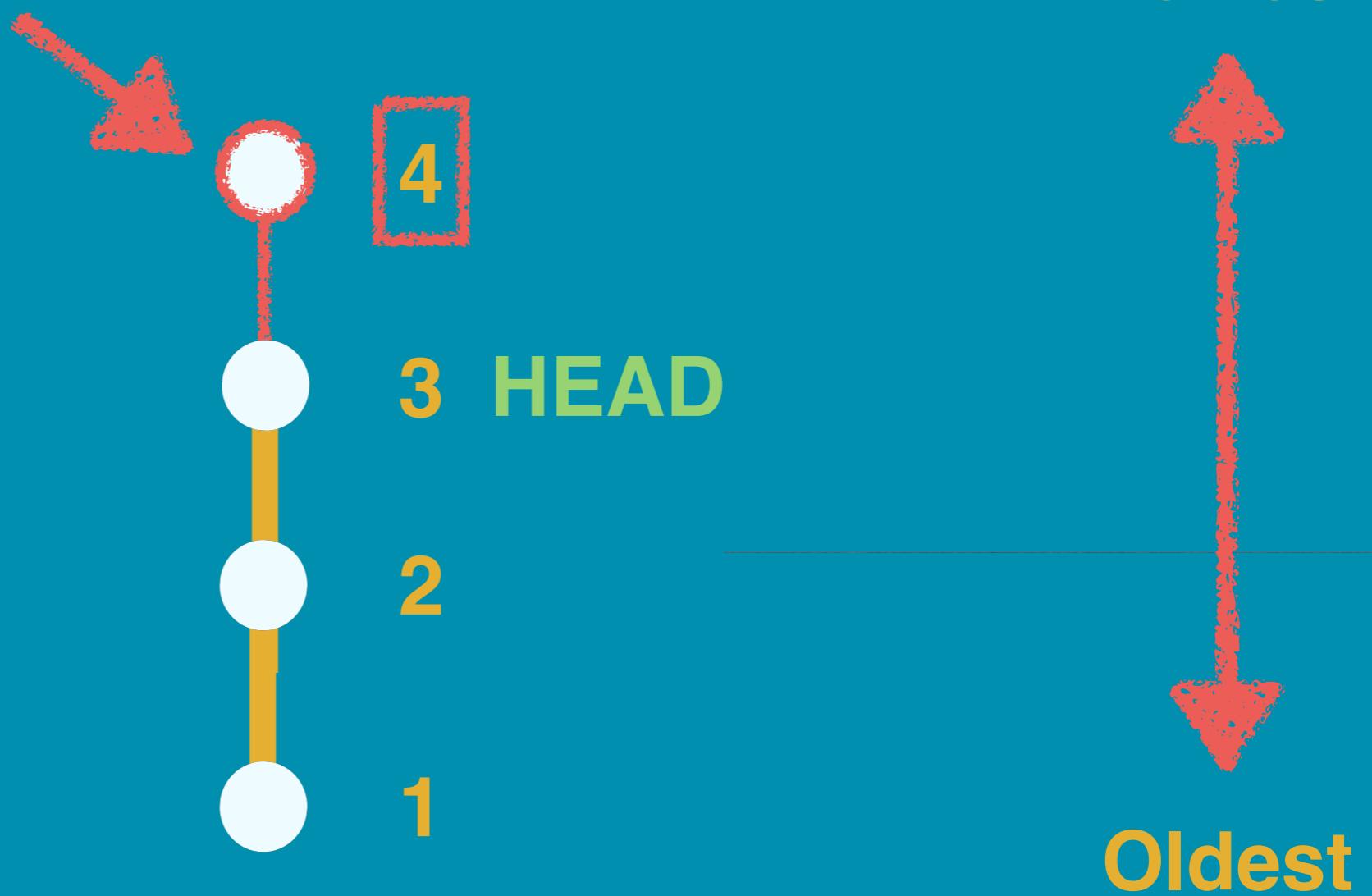
What is HEAD?



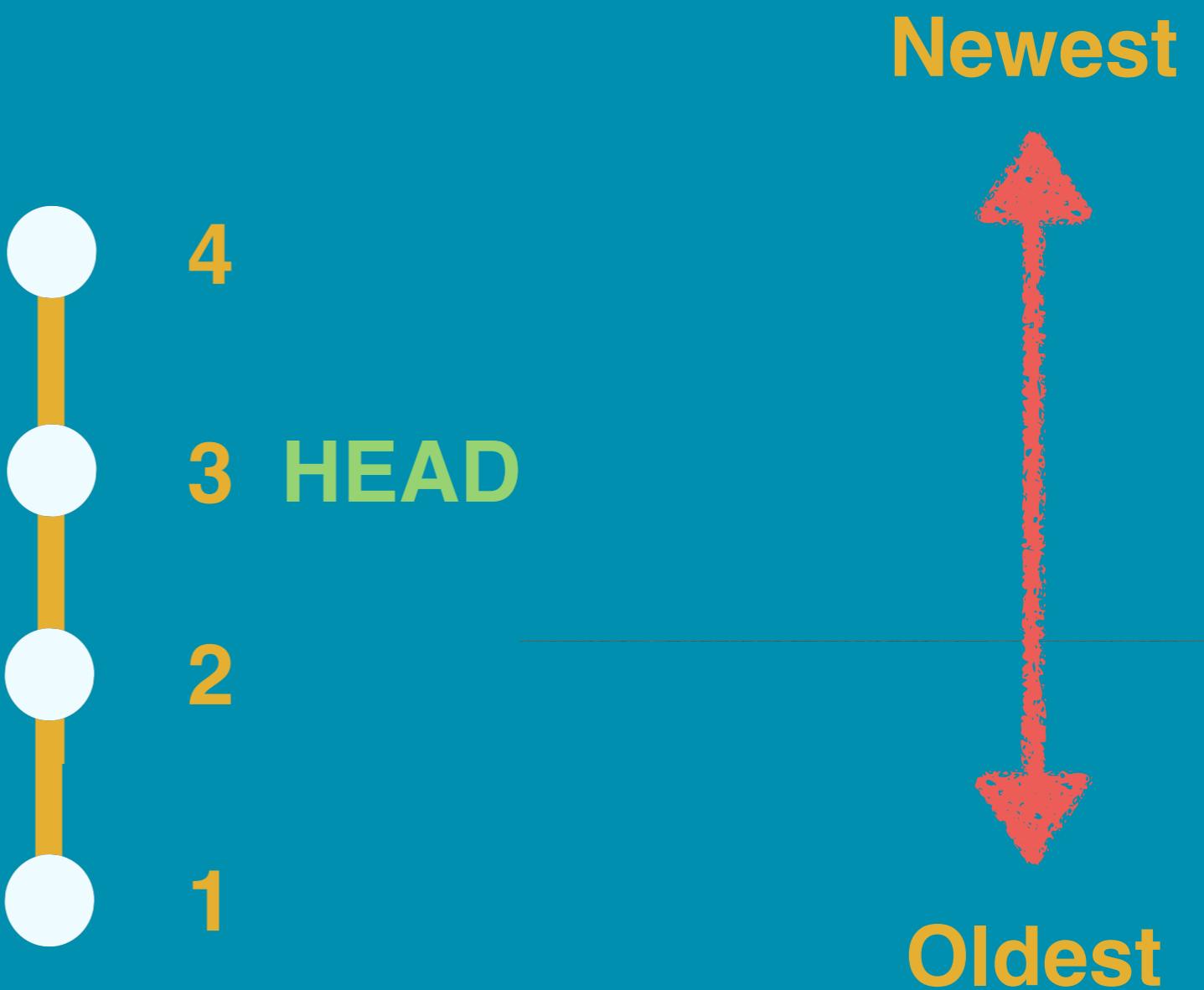
What is HEAD?

Next commit is on top of HEAD

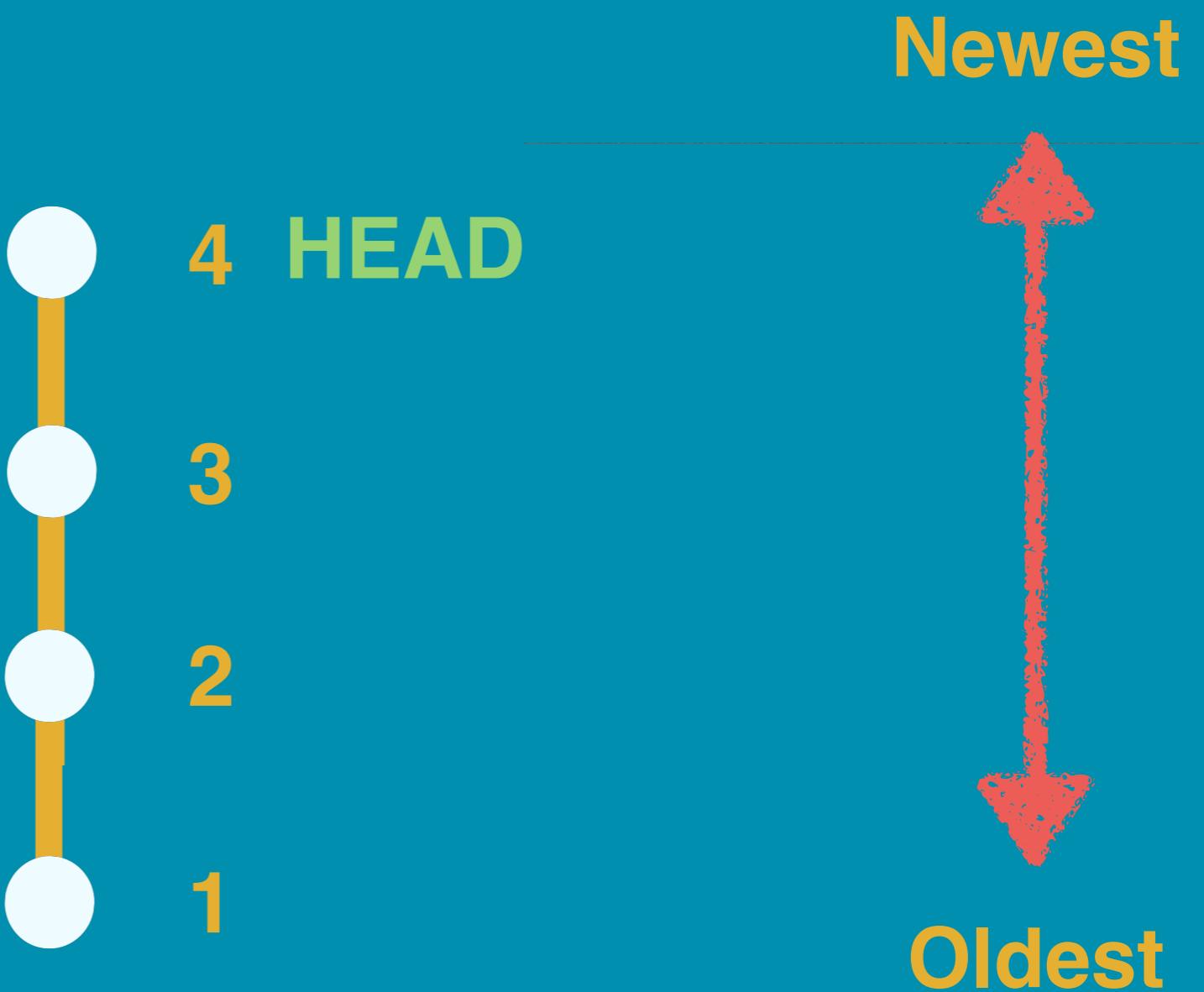
Newest



What is HEAD?

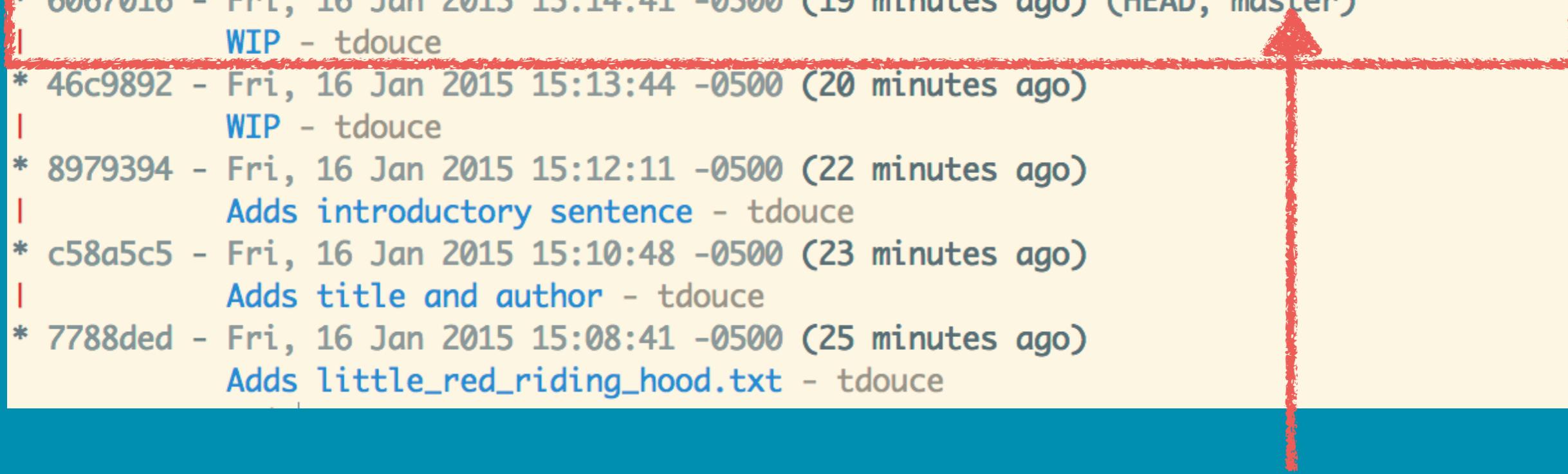


What is HEAD?



What is master?

```
~/fairy_tales $ git log
```



```
* 6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)
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```

master

Default branch
(we'll cover branches later)

Understanding git history



Understanding log as graph

```
~/fairy tales $ git log  
* 6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)  
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```

master

master has commits

Understanding log as graph

```
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master has commits

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master has commits

The ugly history

Ugly history

```
~/fairy_tales $ git log
```

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3 commits about writing introduction

Proposed clean history

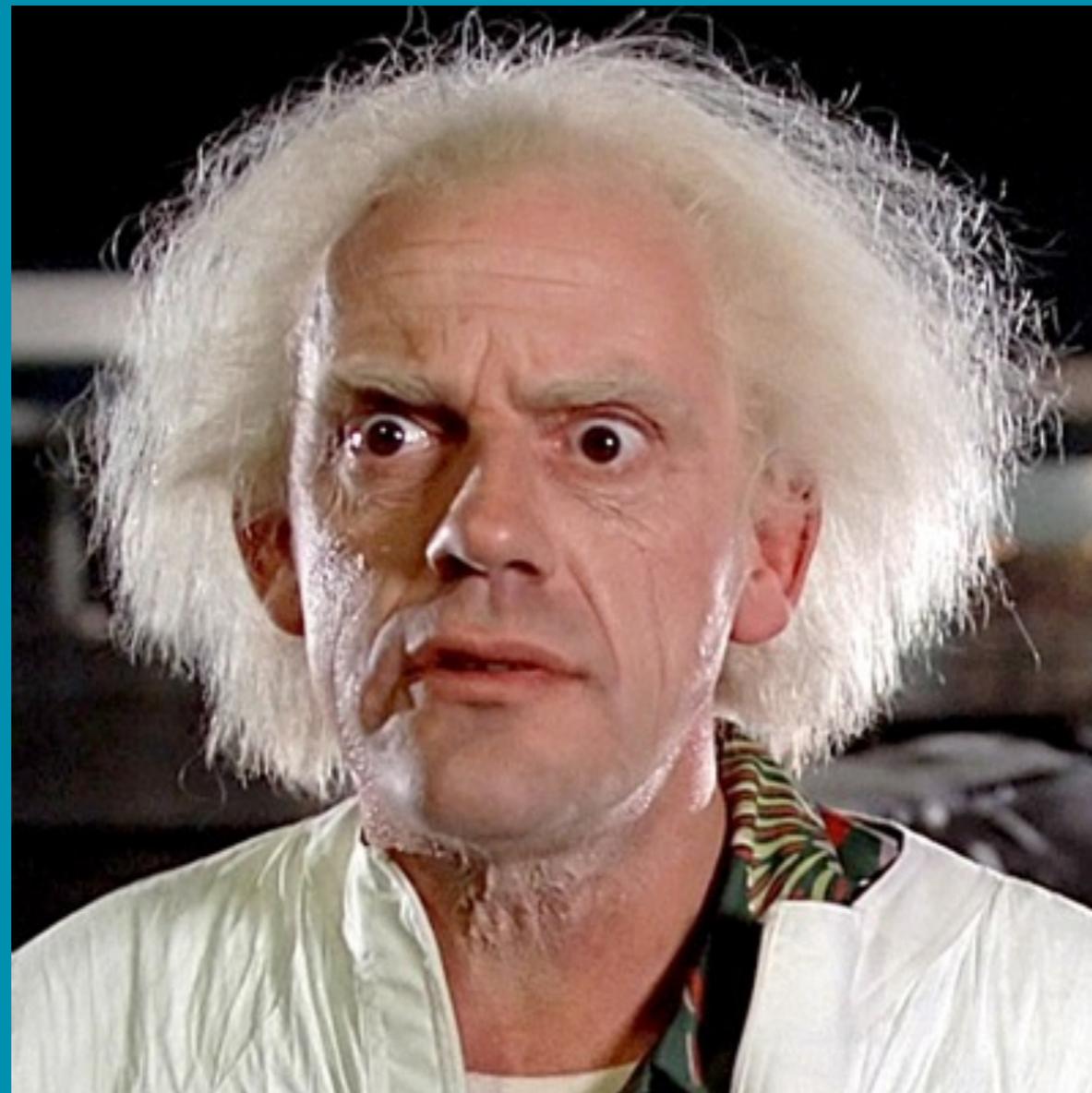
```
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```

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1 commit **about writing introduction**

Why do we care about a
clean history?

Re-write history



Log as a graph

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Start rewriting history at
Adds introductory sentence commit

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* 8979394 - Fri, 16 Jan 2015 15:12:11 -0500 (22 minutes ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (23 minutes ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (25 minutes ago)
|       Adds little_red_riding_hood.txt - tdouce
```

Start rewriting history at
Adds introductory sentence commit

Log as a graph

```
~/fairy_tales $ git lg
* 6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)
  WIP - tdouce
* 46c9892 - Fri, 16 Jan 2015 15:13:44 -0500 (20 minutes ago)
  WIP - tdouce
* 8979394 - Fri, 16 Jan 2015 15:12:11 -0500 (22 minutes ago)
  Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (23 minutes ago)
  Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (25 minutes ago)
  Adds little_red_riding_hood.txt - tdouce
```

Start rewriting history at
Adds introductory sentence commit

Log as a graph

```
~/fairy_tales $ git lg
1 6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)
|   WIP - tdouce
2 46c9892 - Fri, 16 Jan 2015 15:13:44 -0500 (20 minutes ago)
|   WIP - tdouce
3 8979394 - Fri, 16 Jan 2015 15:12:11 -0500 (22 minutes ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (23 minutes ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (25 minutes ago)
|       Adds little_red_riding_hood.txt - tdouce
```

Start rewriting history at
Adds introductory sentence commit

Log as a graph

```
~/fairy_tales $ git lg
6067016 - Fri, 16 Jan 2015 15:14:41 -0500 (19 minutes ago) (HEAD, master)
    WIP - tdouce
46c9892 - Fri, 16 Jan 2015 15:13:44 -0500 (20 minutes ago)
    WIP - tdouce
8979394 - Fri, 16 Jan 2015 15:12:11 -0500 (22 minutes ago)
    Adds introductory sentence - tdouce
* c5e45c5 - Fri, 16 Jan 2015 15:10:48 -0500 (23 minutes ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (25 minutes ago)
    Adds little_red_riding_hood.txt - tdouce
```

copy sha to clipboard

Rebase: interactive

```
~/fairy_tales $ git rebase --interactive 8979394^
```



Re-write history

Rebase: interactive

```
~/fairy_tales $ git rebase --interactive 8979394^
```



Interactive mode

Rebase: interactive

```
~/fairy_tales $ git rebase --interactive 8979394^
```



sha from clipboard

Rebase: interactive

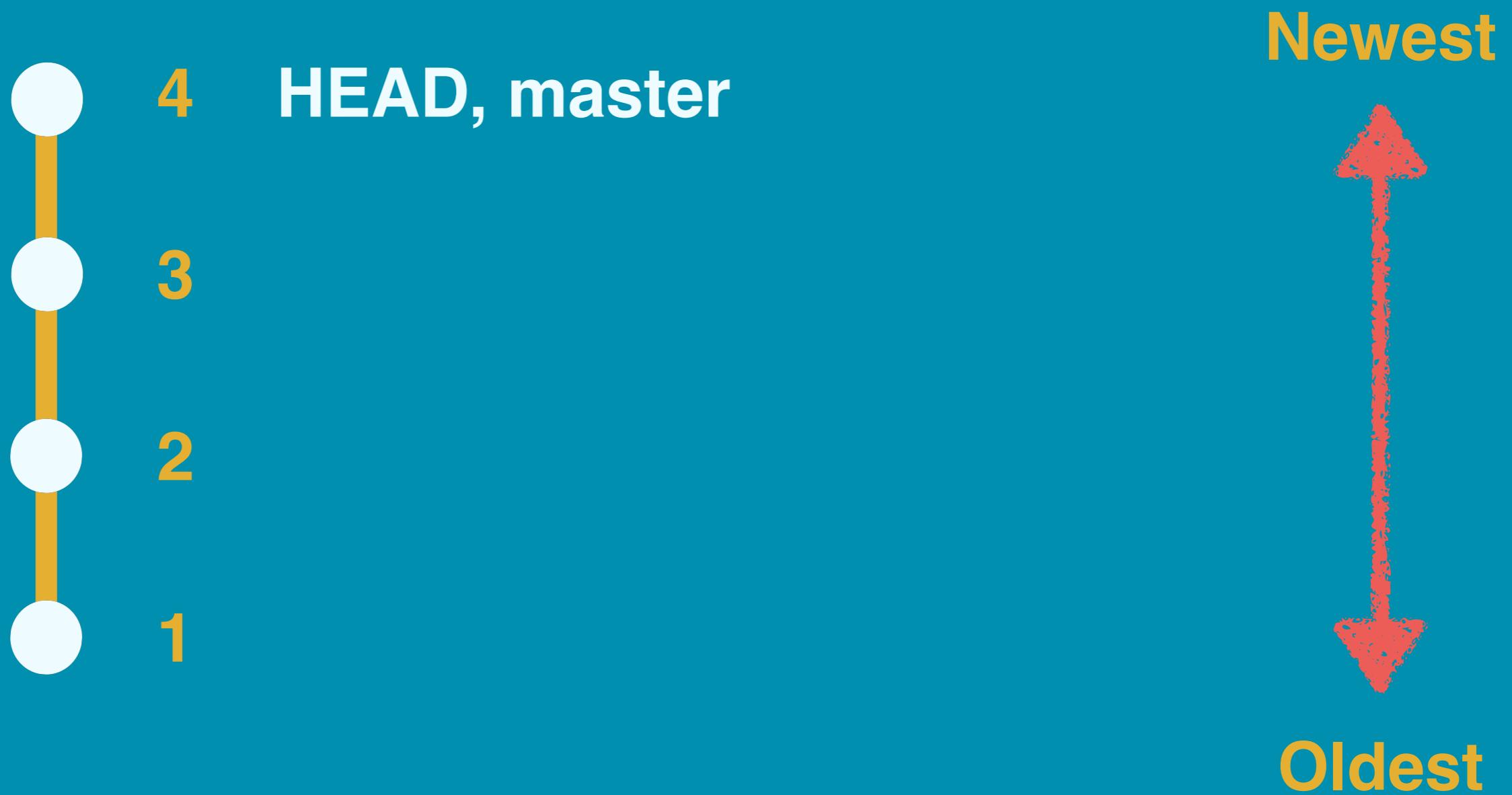
```
~/fairy_tales $ git rebase --interactive 8979394^
```



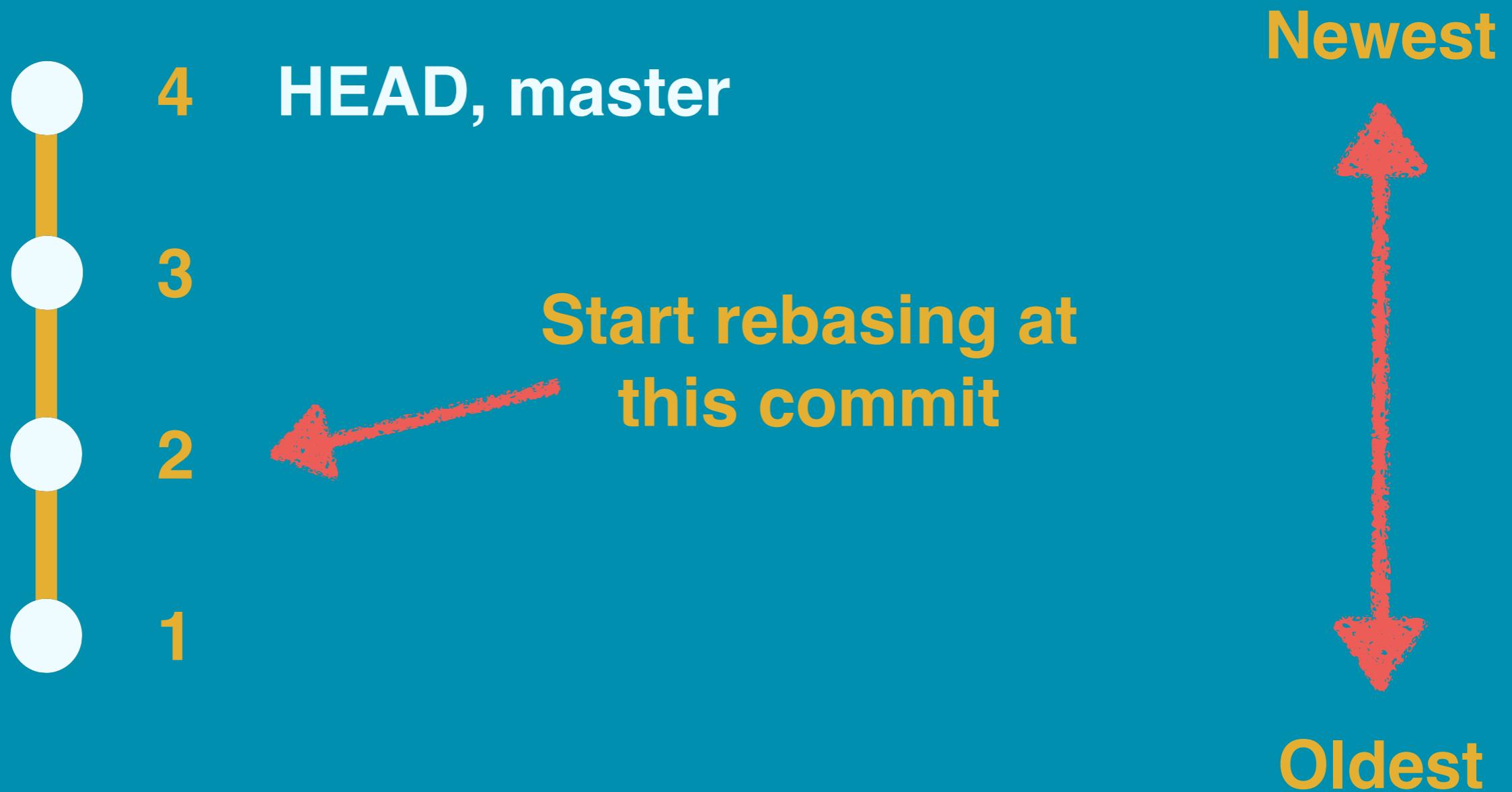
Not child of sha, but this sha

What will happen?
(theoretically)

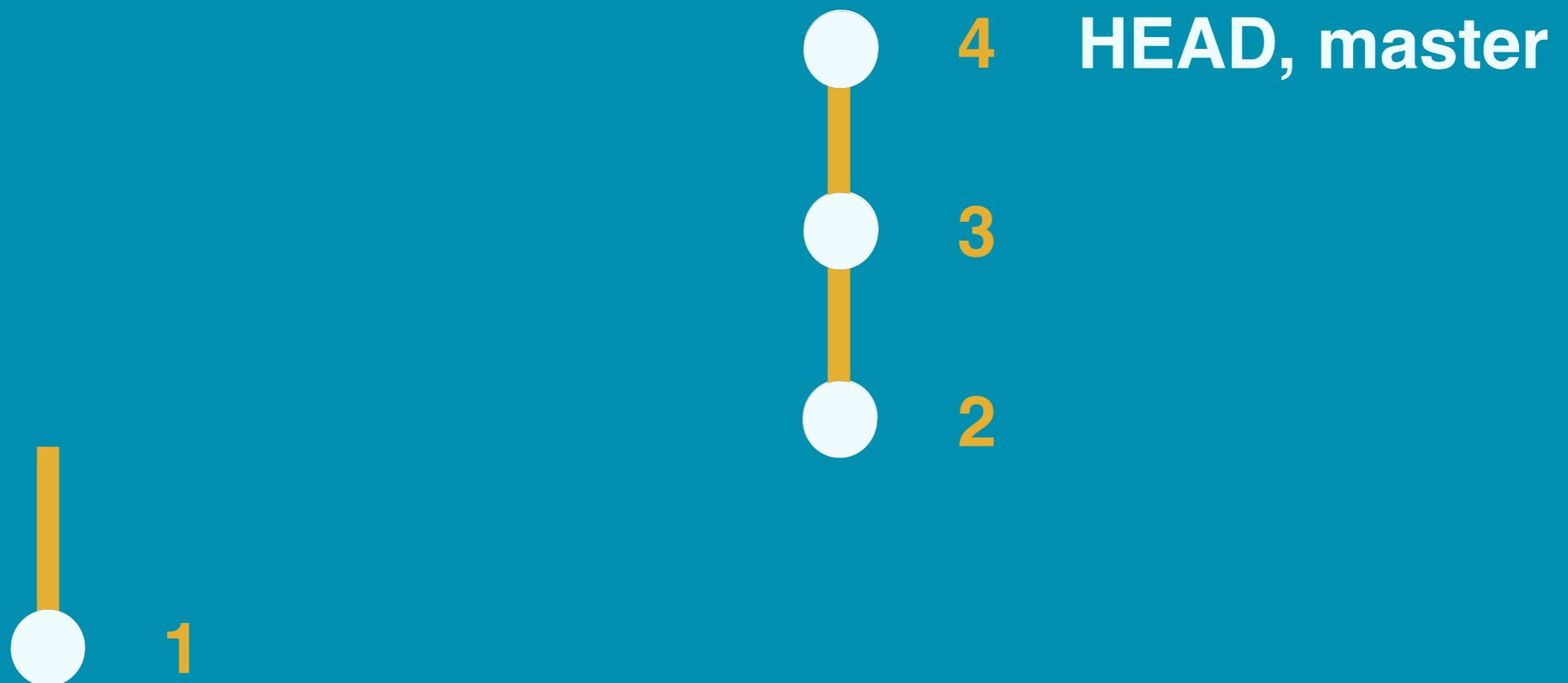
Rebase: Interactive



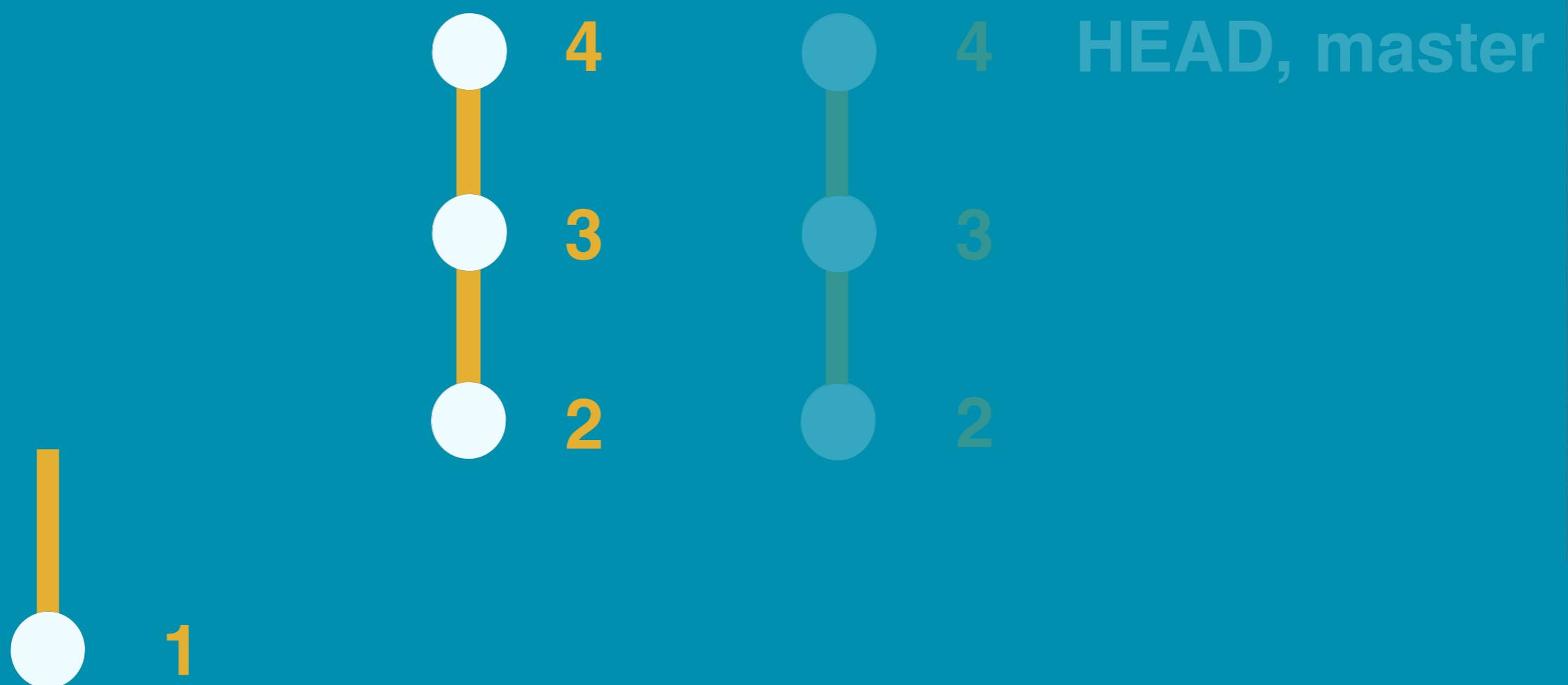
Rebase: Interactive



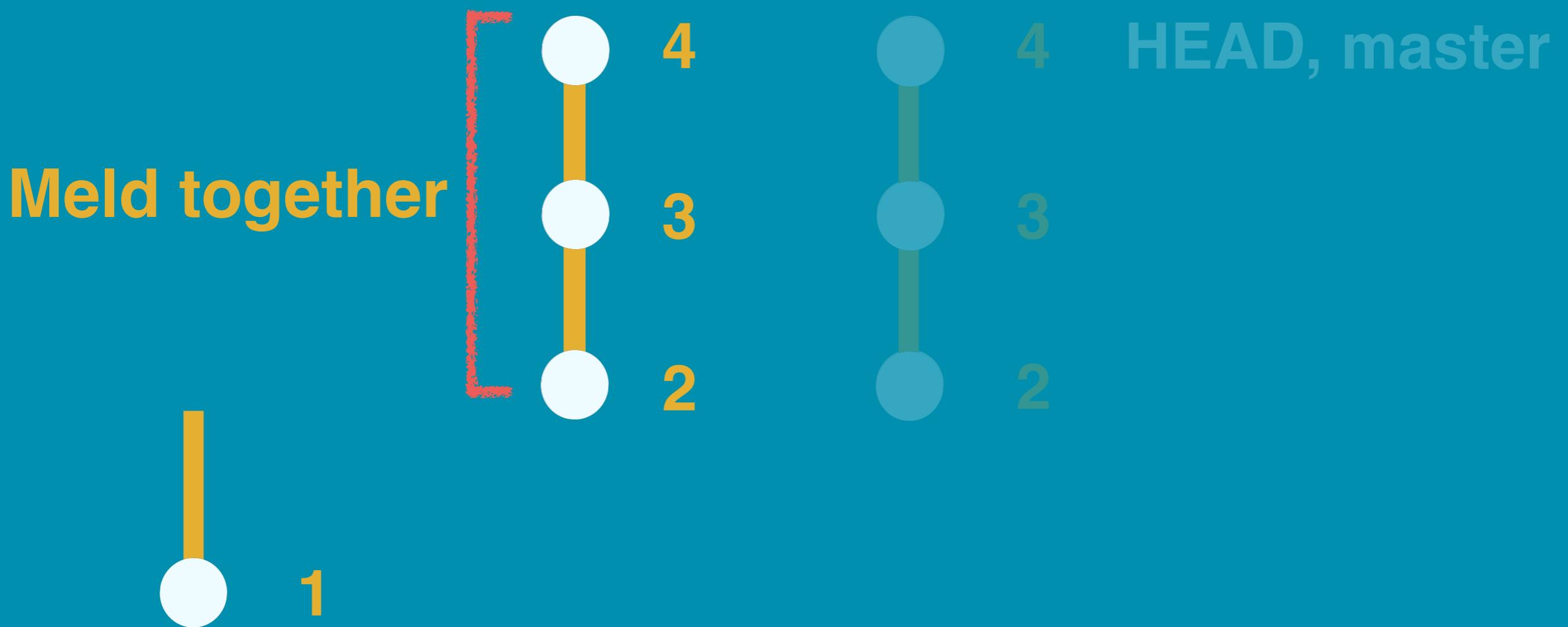
Rebase: Interactive



Rebase: Interactive



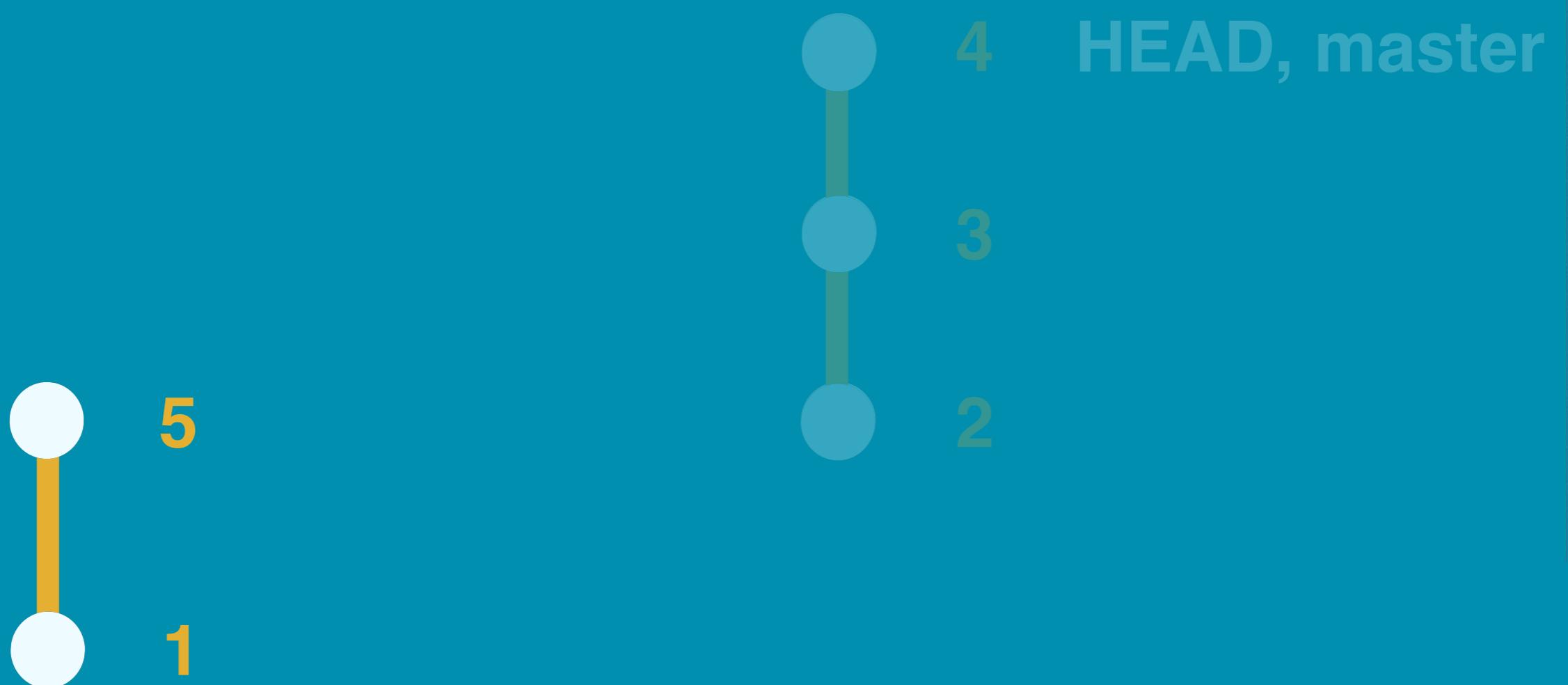
Rebase: Interactive



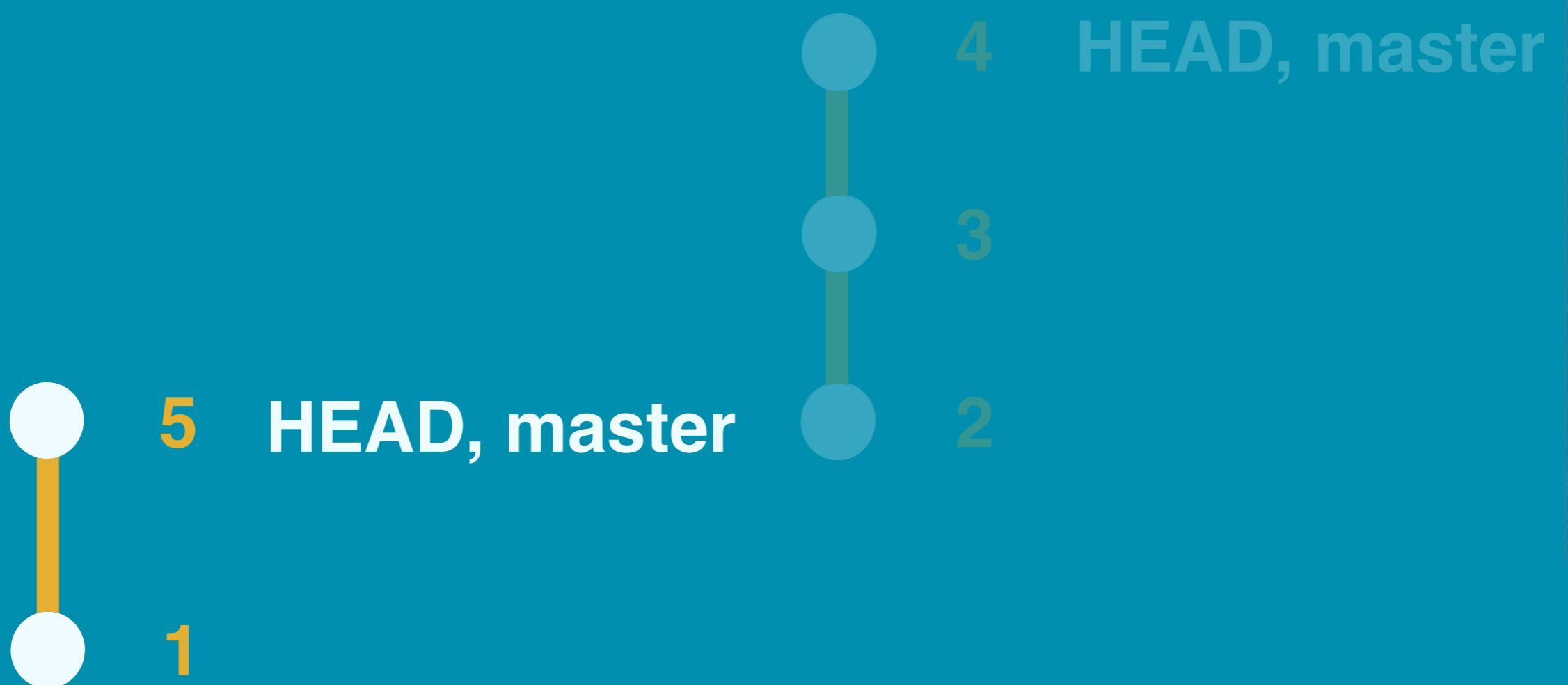
Rebase: Interactive



Rebase: Interactive

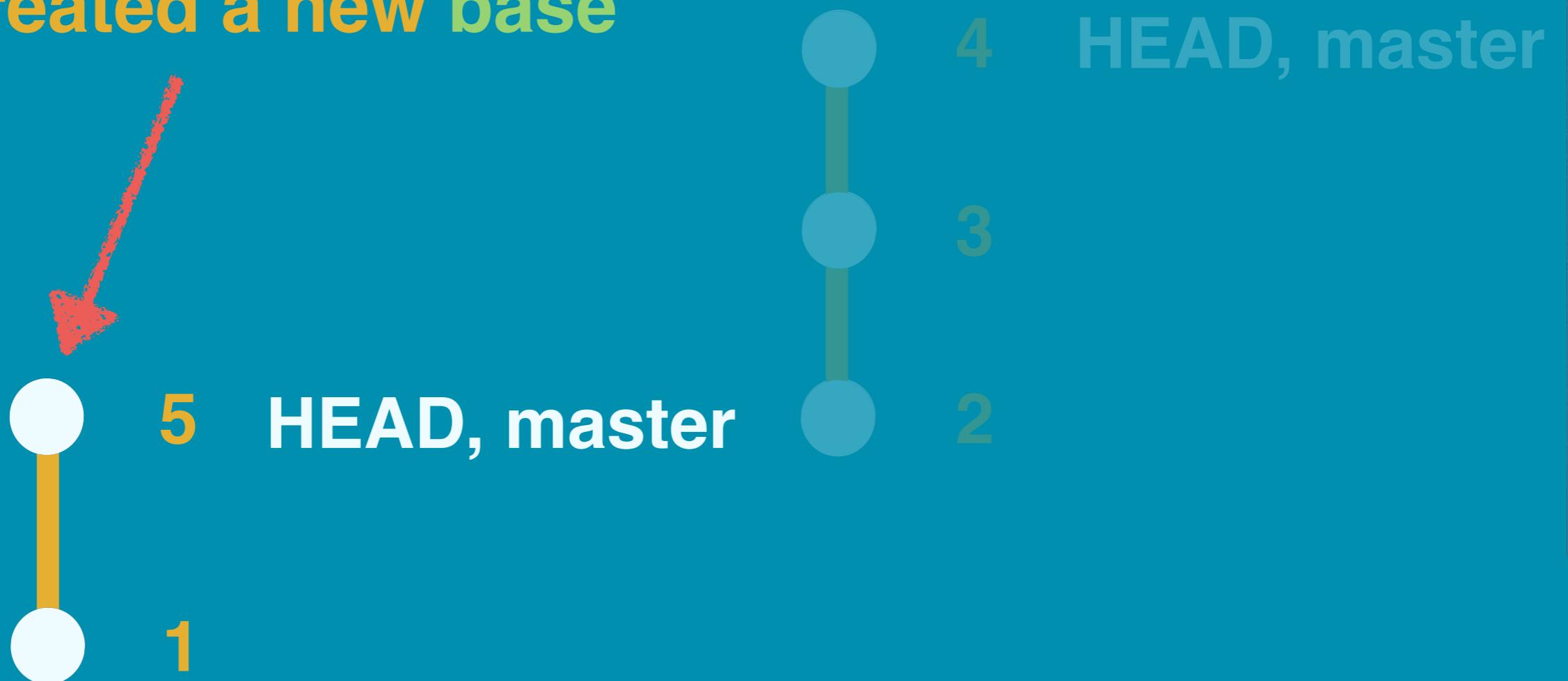


Rebase: Interactive



Rebase: Interactive

Created a new base



Rebase: interactive

```
~/fairy_tales $ git rebase --interactive 8979394^
```

```
git rebase -i HEAD~3

pick 8979394 Adds introductory sentence
pick 46c9892 WIP
pick 6067016 WIP

# Rebase c58a5c5..6067016 onto c58a5c5
#
# 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
#
# 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
~
~
~
```

opens editor

Oldest



Newest

```
1 pick 8979394 Adds introductory sentence
2 pick 46c9892 WTP
3 pick 6067016 WIP
4
5 # Rebase c58a5c5..6067016 onto c58a5c5
6 #
7 # Commands:
8 # p, pick = use commit
9 # r, reword = use commit, but edit the commit message
10 # e, edit = use commit, but stop for amending
11 # s, squash = use commit, but meld into previous commit
12 # f, fixup = like "squash", but discard this commit's log message
13 # x, exec = run command (the rest of the line) using shell
14 #
15 # These lines can be re-ordered; they are executed from top to bottom.
16 #
17 # If you remove a line here THAT COMMIT WILL BE LOST.
18 #
19 # However, if you remove everything, the rebase will be aborted.
20 #
21 # Note that empty commits are commented out
```

Oldest



Newest

```
1 pick 8979394 Adds introductory sentence
2 pick 46c9892 WIP
3 pick 6067016 WIP
4
5 # Rebase c58a5c5..6067016 onto c58a5c5
6 #
7 # Commands:
8 # p, pick = use commit
9 # r, reword = use commit, but edit the commit message
10 # e, edit = use commit, but stop for amending
11 # s, squash = use commit, but meld into previous commit
12 # f, fixup = like "squash", but discard this commit's log message
13 # x, exec = run command (the rest of the line) using shell
14 #
15 # These lines can be re-ordered; they are executed from top to bottom.
16 #
17 # If you remove a line here THAT COMMIT WILL BE LOST.
18 #
19 # However, if you remove everything, the rebase will be aborted.
20 #
21 # Note that empty commits are commented out
```

Oldest



Newest

```
1 pick 8979394 Adds introductory sentence
2 pick 46c9892 WIP
3 pick 6067016 WIP
4
5 # Rebase c58a5c5..6067016 onto c58a5c5
6 #
7 # Commands:
8 # p, pick = use commit
9 # r, reword = use commit, but edit the commit message
10 # e, edit = use commit, but stop for amending
11 # s, squash = use commit, but meld into previous commit
12 # f, fixup = like "squash", but discard this commit's log message
13 # x, exec = run command (the rest of the line) using shell
14 #
15 # These lines can be re-ordered; they are executed from top to bottom.
16 #
17 # If you remove a line here THAT COMMIT WILL BE LOST.
18 #
19 # However, if you remove everything, the rebase will be aborted.
20 #
21 # Note that empty commits are commented out
```

Oldest



Newest

```
git rebase -i HEAD~3  
pick 8979394 Adds introductory sentence  
pick 46c9892 WIP  
pick 6067016 WIP  
#  
# Rebase c58a5c5..6067016 onto c58a5c5  
#  
# 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  
#  
# 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  
~  
~  
~
```

```
1 pick 8979394 Adds introductory sentence
2 pick 46c9892 WIP
3 pick 6067016 WIP
4
5 # Rebase c58a5c5..6067016 onto c58a5c5
6 #
7 # Commands:
8 # p, pick = use commit
9 # r, reword = use commit, but edit the commit message
10 # e, edit = use commit, but stop for amending
11 # s, squash = use commit, but meld into previous commit
12 # f, fixup = like "squash", but discard this commit's log message
13 # x, exec = run command (the rest of the line) using shell
14 #
15 # These lines can be re-ordered; they are executed from top to bottom.
16 #
17 # If you remove a line here THAT COMMIT WILL BE LOST.
18 #
19 # However, if you remove everything, the rebase will be aborted.
20 #
21 # Note that empty commits are commented out

~
```

```
git rebase -i HEAD~3  
pick 8979394 Adds introductory sentence  
pick 46c9892 WIP  
pick 6067016 WIP  
  
# Rebase c58a5c5..6067016 onto c58a5c5  
#  
# 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  
#  
# 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  
~  
~  
~
```

```
git rebase -i HEAD~3

pick 8979394 Adds introductory sentence
pick 46c9892 WIP
pick 6067016 WIP

# Rebase c58a5c5..6067016 onto c58a5c5
#
# 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
#
# 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

~
~
```

```
git rebase -i HEAD~3  
pick 8979394 Adds introductory sentence  
pick 46c9892 WIP  
pick 6067016 WIP  
  
# Rebase c58a5c5..6067016 onto c58a5c5  
#  
# 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  
#  
# 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  
~  
~  
~
```

```
1 pick 8979394 Adds introductory sentence
2 f    46c9892 WIP
3 f    6067016 WIP
4
5 # Rebase c58a5c5..6067016 onto c58a5c5
6 #
7 # Commands:
8 # p, pick = use commit
9 # r, reword = use commit, but edit the commit message
10 # e, edit = use commit, but stop for amending
11 # s, squash = use commit, but meld into previous commit
12 # f, fixup = like "squash", but discard this commit's log message
13 # x, exec = run command (the rest of the line) using shell
14 #
15 # These lines can be re-ordered; they are executed from top to bottom.
16 #
17 # If you remove a line here THAT COMMIT WILL BE LOST.
18 #
19 # However, if you remove everything, the rebase will be aborted.
20 #
21 # Note that empty commits are commented out

~
```

```
git rebase -i HEAD~4  
pick 8979394 Adds introductory sentence  
f 46c9892 WIP  
f 6067016 WIP  
#  
# Rebase c58a5c5..6067016 onto c58a5c5  
#  
# 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  
#  
# 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  
~  
~  
~
```

save and close

Rebase: interactive

```
~/fairy_tales $ git rebase --interactive 8979394^
[detached HEAD ed04ae2] Adds introductory sentence
Date: Fri Jan 16 15:12:11 2015 -0500
1 file changed, 3 insertions(+)
Successfully rebased and updated refs/heads/master.
```

Rebase: interactive

```
~/fairy_tales $ qit rebase --interactive 8979394^
[detached HEAD ed04ae2] Adds introductory sentence
Date: Fri Jan 16 15:12:11 2015 -0500
1 file changed, 3 insertions(+)
Successfully rebased and updated refs/heads/master.
```



It worked!

Rebase: interactive

```
~/fairy_tales $ git rebase --interactive 8979394^
[detached HEAD ed04ae2] Adds introductory sentence
Date: Fri Jan 16 15:12:11 2015 -0500
1 file changed, 3 insertions(+)
Successfully rebased and updated refs/heads/master.
```

If things go wrong!

\$ git rebase --abort

Rebase



Double edged sword

Understanding git history



Log as a graph

```
~/fairy_tales $ git rebase --interactive 8979394^
[detached HEAD ed04ae2] Adds introductory sentence
Date: Fri Jan 16 15:12:11 2015 -0500
1 file changed, 3 insertions(+)
Successfully rebased and updated refs/heads/master.
~/fairy_tales $ git lg
```

Log as a graph

```
~/fairy_tales $ git rebase --interactive 8979394^
[detached HEAD ed04ae2] Adds introductory sentence
Date: Fri Jan 16 15:12:11 2015 -0500
1 file changed, 3 insertions(+)
Successfully rebased and updated refs/heads/master.
~/fairy_tales $ git lg
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (56 minutes ago) (HEAD, master)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (58 minutes ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (60 minutes ago)
|       Adds little_red_riding_hood.txt - tdouce
```

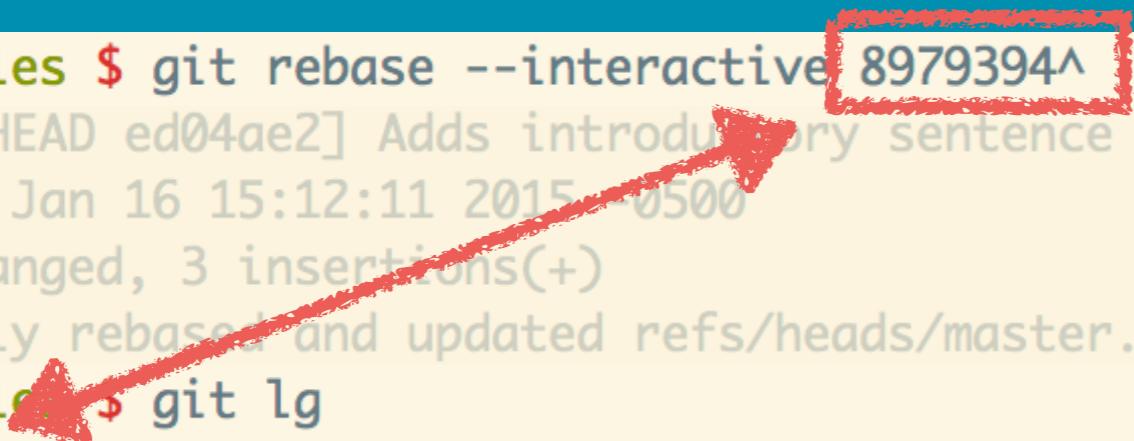
Log as a graph

```
~/fairy_tales $ git rebase --interactive 8979394^
[detached HEAD ed04ae2] Adds introductory sentence
Date: Fri Jan 16 15:12:11 2015 -0500
1 file changed, 3 insertions(+)
Successfully rebased and updated refs/heads/master.
~/fairy tales $ git log
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (56 minutes ago) (HEAD, master)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (58 minutes ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (60 minutes ago)
    Adds little_red_riding_hood.txt - tdouce
```

1 commit about writing introduction

Log as a graph

```
~/fairy_tales $ git rebase --interactive 8979394^  
[detached HEAD ed04ae2] Adds introductory sentence  
Date: Fri Jan 16 15:12:11 2015 -0500  
1 file changed, 3 insertions(+)  
Successfully rebased and updated refs/heads/master.  
~/fairy_tales $ git lg  
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (56 minutes ago) (HEAD, master)  
|   Adds introductory sentence - tdouce  
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (58 minutes ago)  
|   Adds title and author - tdouce  
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (60 minutes ago)  
    Adds little_red_riding_hood.txt - tdouce
```



8979394 != ed04ae2

Work Flow #3

Work Flow #3

Keep a clean history

Work Flow #3

Keep a clean history

I want to know what you did
(Not so much how you got there, but sometimes I do)

Keep a clean history

I want to know what you did
(Not so much how you got there, but sometimes I do)

Helps with code reviews by revealing intent

Keep a clean history

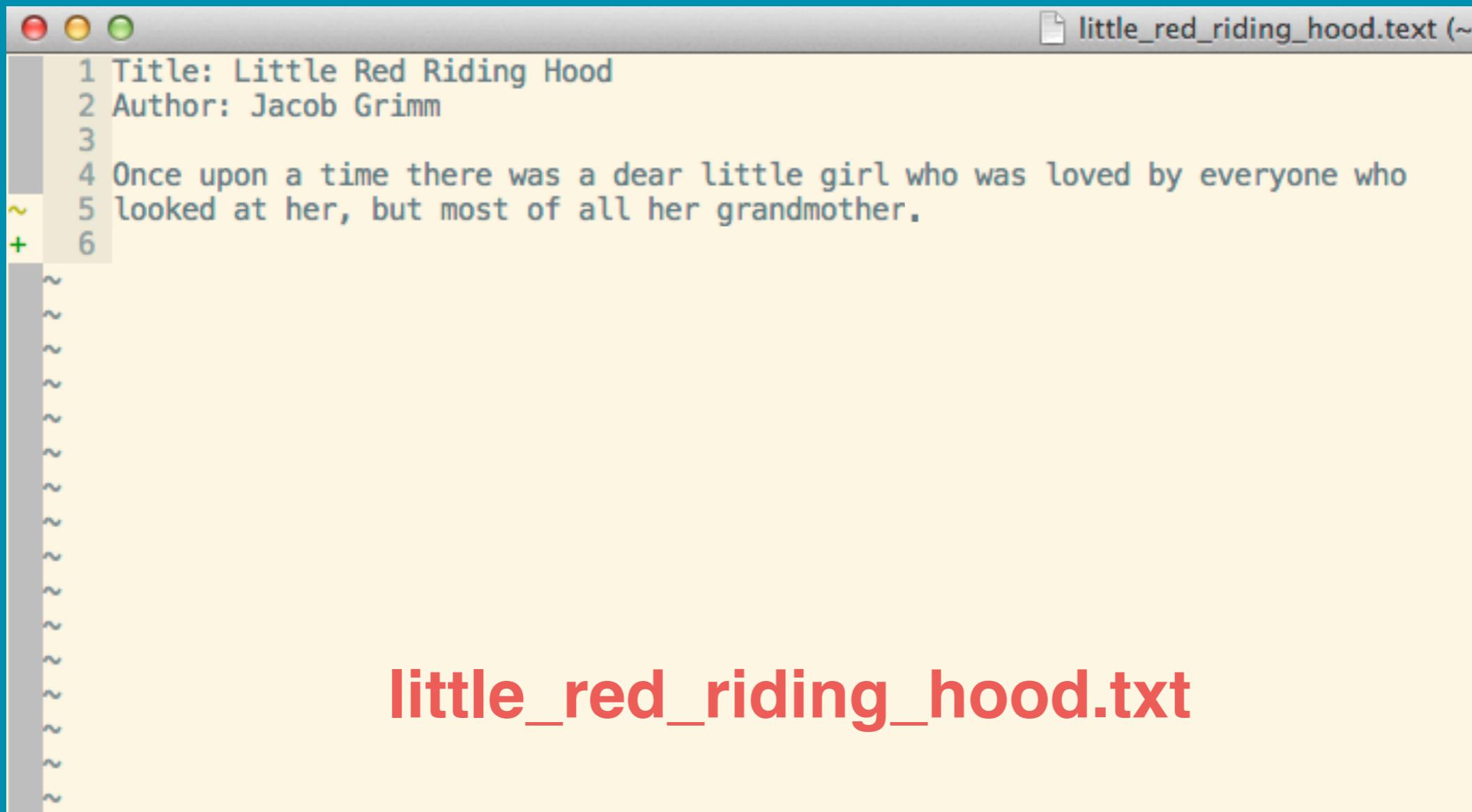
I want to know what you did
(Not so much how you got there, but sometimes I do)

Helps with code reviews by revealing intent

Can rebase to organize history

3 a.m. and Jacob is



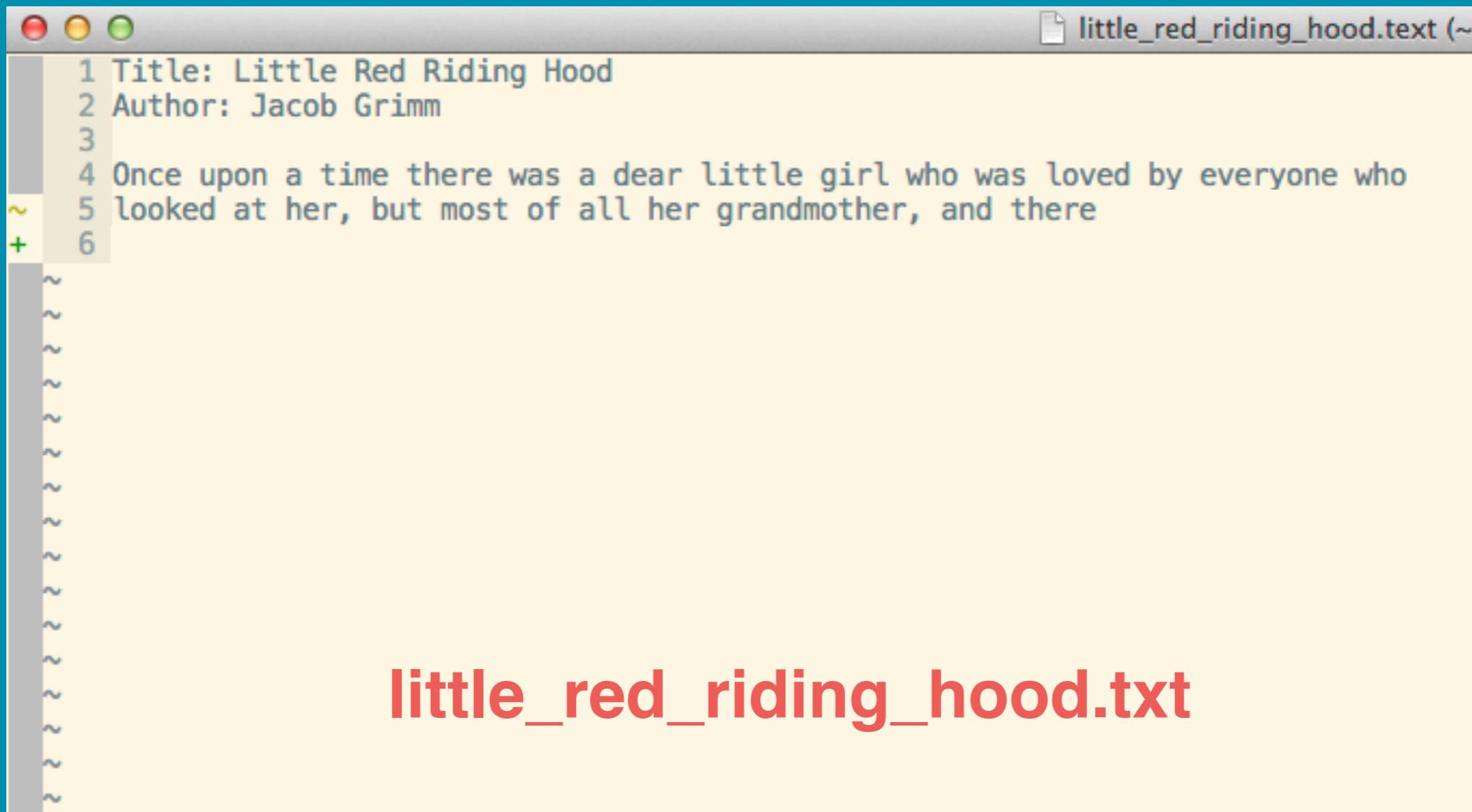


A screenshot of a Mac OS X TextEdit window titled "little_red_riding_hood.text (~)". The window contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
5 looked at her, but most of all her grandmother.
```

The text is numbered from 1 to 6. The first five lines are visible, while line 6 is partially visible at the bottom. The window has the standard OS X title bar with red, yellow, and green buttons. The sidebar on the left shows a list of file versions with the first one selected.

little_red_riding_hood.txt



A screenshot of a Mac OS X TextEdit window titled "little_red_riding_hood.text (~)". The window contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
5 looked at her, but most of all her grandmother, and there
6
```

The text is displayed in a monospaced font. Lines 1 and 2 are blue, while lines 4 and 5 are red. The window has the standard OS X title bar with red, yellow, and green buttons. A vertical scroll bar on the left side shows several horizontal scroll marks (~).

little_red_riding_hood.txt

little_red_riding_hood.txt

Status

```
~/fairy_tales $ git status
```

Modified

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
```

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git commit -a
```



Stage and commit

A screenshot of a terminal window titled "COMMIT_EDITMSG (~/fairy)". The window contains the following text:

```
1
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch master
6 # Changes to be committed:
7 #       modified:   little_red_riding_hood.text
8 #
```

The line "modified: little_red_riding_hood.text" is highlighted in green. The word "open" is overlaid in red text at the bottom right of the terminal window.

commit message

```
● ○ ● COMMIT_EDITMSG (~/fairy)
1 Adds to introductory sentence
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch master
6 # Changes to be committed:
7 #       modified:   little_red_riding_hood.text
8 #

~  
~  
~  
~  
~  
~  
~  
~  
~
```

save and close

Commit

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit
[master d60ddcf] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
```

Log with patch

```
~/fairy_tales $ git log --patch
```

Log with patch

```
~/fairy_tales $ git log --patch  
commit d60ddcf3a7e3be0df2d82b8c481f7f4d96bada1  
Author: tdouce <travisdouce@gmail.com>  
Date:   Tue Jan 20 11:08:17 2015 -0500
```

Adds to introductory sentence

```
diff --git a/little_red_riding_hood.text b/little_red_riding_hood.text
index e66b0b0..281e92d 100644
--- a/little_red_riding_hood.text
+++ b/little_red_riding_hood.text
@@ -2,4 +2,5 @@ Title: Little Red Riding Hood
 Author: Jacob Grimm
```

Once upon a time there was a dear little girl who was loved by everyone who looked at her, but most of all her grandmother.

Displaying most recent commit only

Jacob realizes commit error



Jacob fixes commit error

Jacob fixes commit error

Undo last commit

Understanding git history



Proposed Undo

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

Proposed Undo

```
/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



Erroneous commit

Proposed Undo

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



Commit prior to error

Proposed Undo

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```

Move HEAD and master backwards one commit

Proposed Undo

```
~/fairy_tales $ git lg
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago) (HEAD, master)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```

Move HEAD and master backwards one commit

Reset

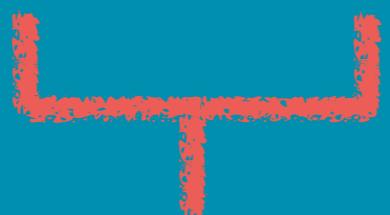
```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
```



Move **HEAD** back 1 commit

Reset

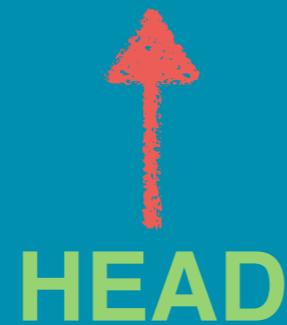
```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
```



Move HEAD back 1 commit (but keep changes)

Reset

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
       Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
```



Reset

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
```



Backwards 1 commit

Reset

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

```
~/fairy_tales $ git reset HEAD~1
```

```
Unstaged changes after reset:
```

```
M     little_red_riding_hood.text
```



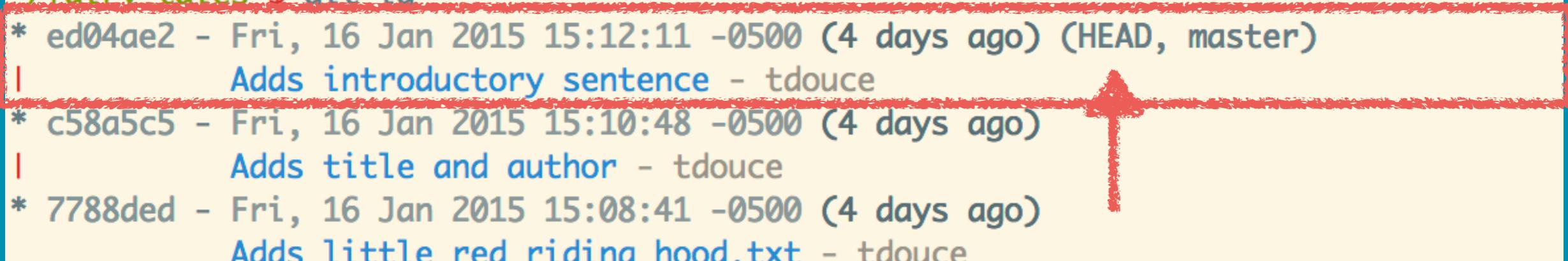
It worked!

Log as graph

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
       Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
Unstaged changes after reset:
M       little_red_riding_hood.text
~/fairy_tales $ git lg
```

Log as graph

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
Unstaged changes after reset:
M      little_red_riding_hood.text
~/fairy_tales $ git lg
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago) (HEAD, master)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



Log as graph

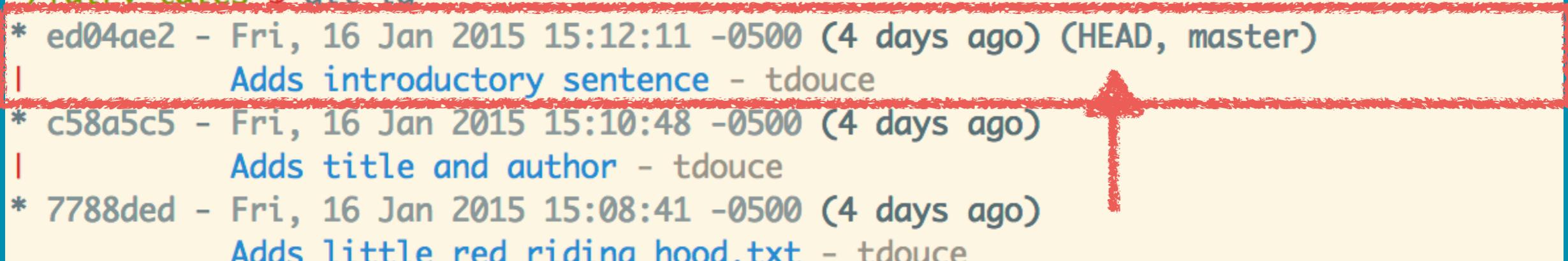
```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

```
~/fairy_tales $ git reset HEAD~1
Unstaged changes after reset:
M     little_red_riding_hood.text
```

```
~/fairy_tales $ git lg
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago) (HEAD, master)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales $ git lg
* d60ddcf - Tue, 20 Jan 2015 11:08:17 -0500 (56 seconds ago) (HEAD, master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
~/fairy_tales $ git reset HEAD~1
Unstaged changes after reset:
M       little_red_riding_hood.text
~/fairy_tales $ git lg
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago) (HEAD, master)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



Jacob rewrites
erroneous sentence

little_red_riding_hood.txt

A screenshot of a Mac OS X application window titled "little_red_riding_hood.txt". The window has the standard OS X title bar with red, yellow, and green close buttons. The main area contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
5 looked at her, but most of all her grandmother, and there
6
```

The text is displayed in a monospaced font. Lines 1 and 2 are blue, while lines 4 and 5 are red. The number lines (1, 2, 3, 4, 5, 6) are also colored blue and red respectively. The right side of the window shows a vertical scroll bar with a grey track and a white slider.

little_red_riding_hood.txt

The screenshot shows a Mac OS X-style text editor window. The title bar reads "little_red_riding_hood.text (~)". The main pane contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
~ 5 looked at her, but most of all her grandmother, and there was nothing that
~ 6 she would not |
```

A vertical scroll bar on the left side of the editor has several small yellow marks on it, indicating where the text has been scrolled.

little_red_riding_hood.txt

The screenshot shows a Mac OS X-style text editor window. The title bar reads "little_red_riding_hood.text (~)". The main pane contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
~ 5 looked at her, but most of all her grandmother, and there was nothing that
~ 6 she would not have given to the child.
```

A vertical scroll bar on the left side of the window has several small, light-gray '~' symbols indicating where the text continues off-screen.

little_red_riding_hood.txt

The screenshot shows a Mac OS X-style text editor window. The title bar reads "little_red_riding_hood.text (~)". The main pane contains the following text:

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
~ 5 looked at her, but most of all her grandmother, and there was nothing that
~ 6 she would not have given to the child.
```

A vertical scroll bar on the left side of the editor has several small, light-yellow marks on it, likely indicating where the cursor has been recently.

save and close

Status

```
~/fairy_tales $ git status
```

Modified

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
```

Stage

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
```

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
```



View changes while writing commit message

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
```



Verbose Flag

```
1  
2  
3 # Please enter the commit message for your changes. Lines starting  
4 # with '#' will be ignored, and an empty message aborts the commit.  
5 # On branch master  
6 # Changes to be committed:  
7 #       modified: little_red_riding_hood.text  
8 #  
9 # ----- >8 -----  
10 # Do not touch the line above.  
11 # Everything below will be removed.  
12 diff --git a/little_red_riding_hood.text b/little_red_riding_hood.text  
13 index e66b0b0..412a394 100644  
14 --- a/little_red_riding_hood.text  
15 +++ b/little_red_riding_hood.text  
16 @@ -2,4 +2,5 @@ Title: Little Red Riding Hood  
17 Author: Jacob Grimm  
18  
19 Once upon a time there was a dear little girl who was loved by everyone who  
20 -looked at her, but most of all her grandmother.  
21 +looked at her, but most of all her grandmother, and there was nothing that  
22 +she would not have given to the child.
```

open

```
1 Adds to introductory sentence
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch master
6 # Changes to be committed:
7 #       modified: little_red_riding_hood.text
8 #
9 # -----
10 # Do not touch the line above.
11 # Everything below will be removed,
12 diff --git a/little_red_riding_hood.text b/little_red_riding_hood.text
13 index e66b0b0..412a394 100644
14 --- a/little_red_riding_hood.text
15 +++ b/little_red_riding_hood.text
16 @@ -2,4 +2,5 @@ Title: Little Red Riding Hood
17 Author: Jacob Grimm
18
19 Once upon a time there was a dear little girl who was loved by everyone who
20 -looked at her, but most of all her grandmother.
21 +looked at her, but most of all her grandmother, and there was nothing that
22 +she would not have given to the child.
```

~

~

~

commit message

```
① ② ③ COMMIT_EDITMSG + (~/fairy_tales/.git) - VIM7
1 Adds to introductory sentence
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch master
6 # Changes to be committed:
7 #       modified: little_red_riding_hood.text
8 #
9 # ----- >8 -----
10 # Do not touch the line above.
11 # Everything below will be removed.
12 diff --git a/little_red_riding_hood.text b/little_red_riding_hood.text
13 index e66b0b0..412a394 100644
14 --- a/little_red_riding_hood.text
15 +++ b/little_red_riding_hood.text
16 @@ -2,4 +2,5 @@ Title: Little Red Riding Hood
17 Author: Jacob Grimm
18
19 Once upon a time there was a dear little girl who was loved by everyone who
20 -looked at her, but most of all her grandmother.
21 +looked at her, but most of all her grandmother, and there was nothing that
22 +she would not have given to the child.
~ ~ ~
```

save and close

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
[master e8300d1] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
```

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text
```

ALWAYS

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
[master e8300d1] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
```

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
[master e8300d1] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
~/fairy_tales $ git config --global "alias.ci" "commit --verbose"
```



Verbose commit with \$ git ci

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
[master e8300d1] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
~/fairy_tales $ git config --global "alias.ci" "commit --verbose"
```



Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
[master e8300d1] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
~/fairy_tales $ git config --global "alias.ci" "commit --verbose"
```



When enter \$ git ci

Commit with verbose

```
~/fairy_tales $ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales $ git add little_red_riding_hood.text
~/fairy_tales $ git commit --verbose
[master e8300d1] Adds to introductory sentence
 1 file changed, 2 insertions(+), 1 deletion(-)
~/fairy_tales $ git config --global "alias.ci" "commit --verbose"
```



Then commit with –verbose

WORK FLOW #4

WORK FLOW #4

Verbose commit

ALWAYS!

WORK FLOW #4

Verbose commit

ALWAYS!

Write better commit messages

WORK FLOW #4

Verbose commit

ALWAYS!

Write better commit messages

Reduce erroneous commits

Jacob writes body of
Little Red Riding Hood

Jacob writes body of
Little Red Riding Hood
using feature branches

List branches

```
~/fairy_tales $ git branch
```



List all branches in repository

List branches

```
~/fairy_tales $ git branch  
* master
```



On master branch

Remember, master is the default branch

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Create branch and switch to it

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grim/body
```



Branch name

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grim/body
```



Branch name

authorFirstName_authorLastName/description_of_branch

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grim/body
```



Branch name

authorFirstName_authorLastName/description_of_branch

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grim/body
```



Branch name

authorFirstName_authorLastName/description_of_branch

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grim/body
```



Branch name

authorFirstName_authorLastName/description_of_branch

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grim/body
```



Branch name

authorFirstName_authorLastName/description_of_branch

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Branch name

jacob_grimmm/body

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Branch name

jacob_grimmm/body

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Branch name

jacob_grimmm/body

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Branch name

jacob_grimmm/body

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Branch name

jacob_grimmm/body

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body
```



Branch name

Just a convention

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body  
Switched to a new branch 'jacob_grimmm/body'
```



It worked!

Created **jacob_grimmm/body** and switched to it

Branches

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body  
Switched to a new branch 'jacob_grimmm/body'  
~/fairy_tales $ git branch
```



List all branches in repository

Branches

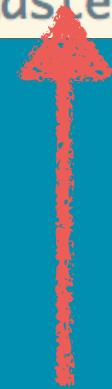
```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
```



2 branches

Branches

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
```



On **jacob_grimmm/body** branch

Understanding git history



Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
```

Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```



HEAD is at commit

Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```



master is at commit

Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

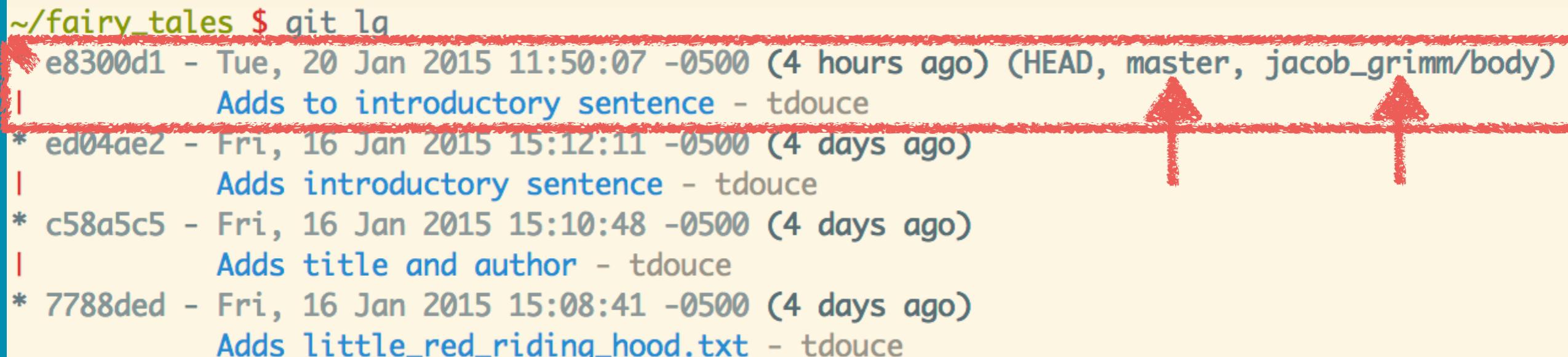


jacob_grimmm/body is at commit

Log as graph

```
~/fairy_tales $ git branch  
* master  
~/fairy_tales $ git checkout -b jacob_grimmm/body  
Switched to a new branch 'jacob_grimmm/body'  
~/fairy_tales $ git branch  
* jacob_grimmm/body  
  master
```

```
~/fairy_tales $ git lg  
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)  
|   Adds to introductory sentence - tdouce  
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)  
|   Adds introductory sentence - tdouce  
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)  
|   Adds title and author - tdouce  
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)  
    Adds little_red_riding_hood.txt - tdouce
```



master and jacob_grimmm/body have commits

Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
  |   Adds to introductory sentence - tdouce
| * ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   |   Adds introductory sentence - tdouce
| * c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   |   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  |   Adds little_red_riding_hood.txt - tdouce
```



master and jacob_grimmm/body have commits

Log as graph

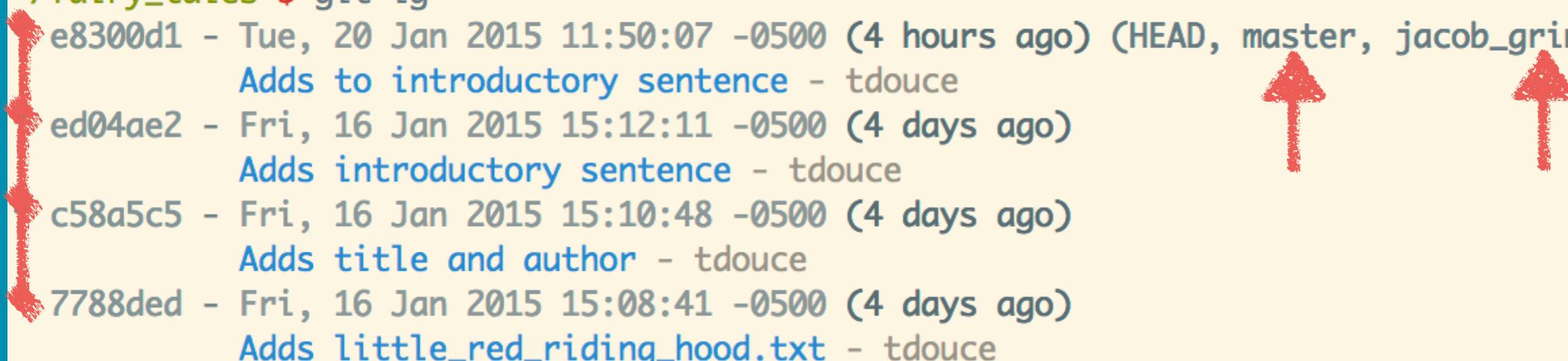
```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
    Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
    Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



master and jacob_grimmm/body have commits

Log as graph

```
~/fairy_tales $ git branch
* master
~/fairy_tales $ git checkout -b jacob_grimmm/body
Switched to a new branch 'jacob_grimmm/body'
~/fairy_tales $ git branch
* jacob_grimmm/body
  master
~/fairy_tales $ git lg
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (HEAD, master, jacob_grimmm/body)
    Adds to introductory sentence - tdouce
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    Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    Adds title and author - tdouce
7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



master and jacob_grimmm/body have commits

What branch am I on?

```
~/fairy_tales $ git branch
```

You are here



What branch am I on?

```
~/fairy_tales $ git branch  
* jacob_grimmm/body  
  master
```

Display branch in prompt

```
~/fairy_tales $ git branch  
* jacob_grimmm/body  
  master  
~/fairy_tales $ source ~/.bash_profile
```

* bash script at end of slides

Display branch in prompt

```
~/fairy_tales $ git branch  
* jacob_grimmm/body  
  master  
~/fairy_tales $ source ~/.bash_profile  
~/fairy_tales (jacob_grimmm/body)$
```



Always display branch name in prompt

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
5 looked at her, but most of all her grandmother, and there was nothing that
6 she would not have given to the child.
7
8
9
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16
17
18
19
20
21
22
23
24
25
26
27
```

little_red_riding_hood.txt

1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
5 looked at her, but most of all her grandmother, and there was nothing that
6 she would not have given to the child. Once she gave her a little riding hood
7 of red velvet, which suited her so well that she would never wear anything
8 else; so she was always called 'Little Red Riding Hood.'
9
10 One day her mother said to her: 'Come, Little Red Riding Hood, here is a piece
11 of cake and a bottle of wine; take them to your grandmother, she is ill and
12 weak, and they will do her good. Set out before it gets hot, and when you are
13 going, walk nicely and quietly and do not run off the path, or you may fall
14 and break the bottle, and then your grandmother will get nothing; and when you
15 go into her room, don't forget to say, "Good morning", and don't peep into
16 every corner before you do it.'
17
18 'I will take great care,' said Little Red Riding Hood to her mother, and gave
19 her hand on it.
20
21 The grandmother lived out in the wood, half a league from the village, and
22 just as Little Red Riding Hood entered the wood, a wolf met her. Red Riding
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.
24
25 'Good day, Little Red Riding Hood,' said he.
26
27 'Thank you kindly, wolf.'

little_red_riding_hood.txt

1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 Once upon a time there was a dear little girl who was loved by everyone who
5 looked at her, but most of all her grandmother, and there was nothing that
6 she would not have given to the child. Once she gave her a little riding hood
7 of red velvet, which suited her so well that she would never wear anything
8 else; so she was always called 'Little Red Riding Hood.'
9
10 One day her mother said to her: 'Come, Little Red Riding Hood, here is a piece
11 of cake and a bottle of wine; take them to your grandmother, she is ill and
12 weak, and they will do her good. Set out before it gets hot, and when you are
13 going, walk nicely and quietly and do not run off the path, or you may fall
14 and break the bottle, and then your grandmother will get nothing; and when you
15 go into her room, don't forget to say, "Good morning", and don't peep into
16 every corner before you do it.'
17
18 'I will take great care,' said Little Red Riding Hood to her mother, and gave
19 her hand on it.
20
21 The grandmother lived out in the wood, half a league from the village, and
22 just as Little Red Riding Hood entered the wood, a wolf met her. Red Riding
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.
24
25 'Good day, Little Red Riding Hood,' said he.
26
27 'Thank you kindly, wolf.'

save and close

little_red_riding_hood.txt

Status

```
~/fairy_tales (jacob_grimmm/body)$ git status
```

Modified

```
~/fairy_tales (jacob_grimmm/body)$ git status
On branch jacob_grimmm/body
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
```

Commit

```
~/fairy_tales (jacob_grimmm/body)$ git status  
On branch jacob_grimmm/body  
Changes not staged for commit:  
  (use "git add <file>..." to update what will be committed)  
  (use "git checkout -- <file>..." to discard changes in working directory)  
  
    modified:   little_red_riding_hood.text
```

```
no changes added to commit (use "git add" and/or "git commit -a")
```

```
~/fairy_tales (jacob_grimmm/body)$ git commit -a
```



Stage and commit

The screenshot shows a Vim 7 window with the title bar 'COMMIT_EDITMSG (~/fairy_tales/.git) - VIM7'. The buffer contains the following text:

```
1
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch jacob_grimmm/body
6 # Changes to be committed:
7 #       modified: little_red_riding_hood.text
8 #
```

Below the text, there are several blank lines indicated by the character '~'. In the bottom right corner of the window, the word 'open' is displayed in red text.

● ○ ●

COMMIT_EDITMSG (~/fairy_tales/.git) - VIM7

```
1 Writes story body
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch jacob_grimmm/body
6 # Changes to be committed:
7 #       modified: little_red_riding_hood.text
8 #
```

~
~
~
~
~
~
~
~
~
~



commit message

The screenshot shows a Vim 7 window with the title bar 'COMMIT_EDITMSG (~/fairy_tales/.git) - VIM7'. The buffer contains the following text:

```
1 Writes story body
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch jacob_grimmm/body
6 # Changes to be committed:
7 #       modified: little_red_riding_hood.text
8 #
```

Below the text, there are several blank lines indicated by the character '~'. In the bottom right corner of the window, the text 'save and close' is displayed in red.

Commit

```
~/fairy_tales (jacob_grimmm/body)$ git status
On branch jacob_grimmm/body
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales (jacob_grimmm/body)$ git commit -a
[jacob_grimmm/body f3aab70] Writes story body
 1 file changed, 160 insertions(+), 1 deletion(-)
```

The history of
master and jacob_grimmm/body
have diverged

Understanding git history



Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git lg
```

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git log
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

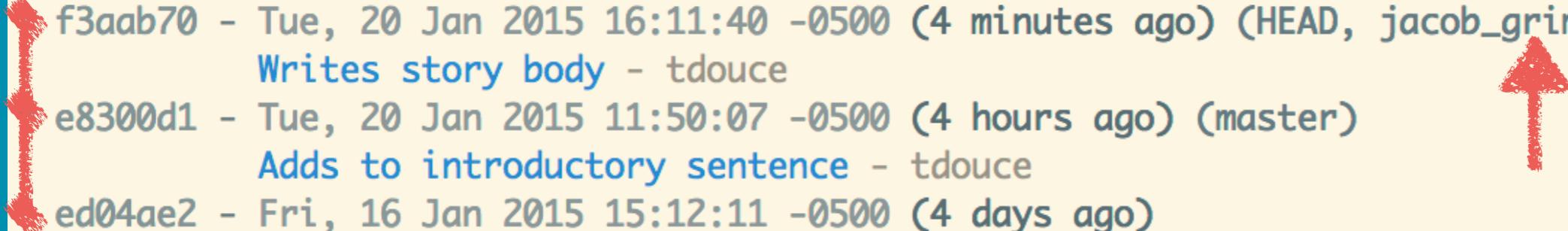
```
~/fairy_tales (jacob_grimmm/body)$ git lg
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
    Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
    Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

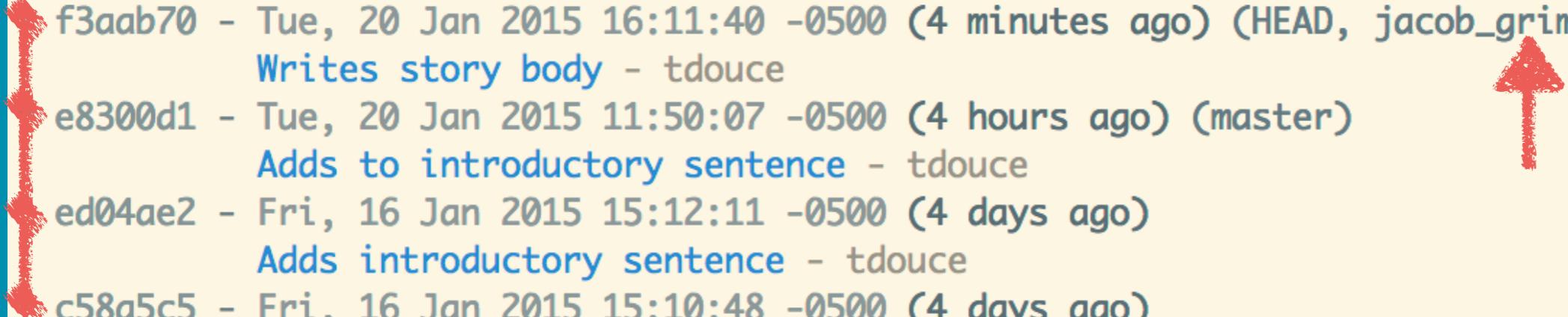
```
~/fairy_tales (jacob_grimmm/body)$ git lg
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
    Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
    Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git lg
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
    Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
    Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
    Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git lg
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
    Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
    Adds to introductory sentence - tdouce
↑
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
    Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    Adds title and author - tdouce
7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/body has commits

Log as graph

```
~/Fairy tales (jacob_grimmm/body)$ git log
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|       Adds to introductory sentence - tdouce
↑
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

master does NOT have commit

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



master has commits

Log as graph

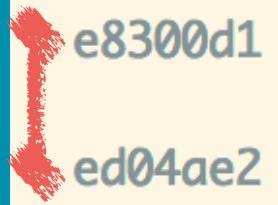
```
~/fairy_tales (jacob_grimmm/body)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



master has commits

Log as graph

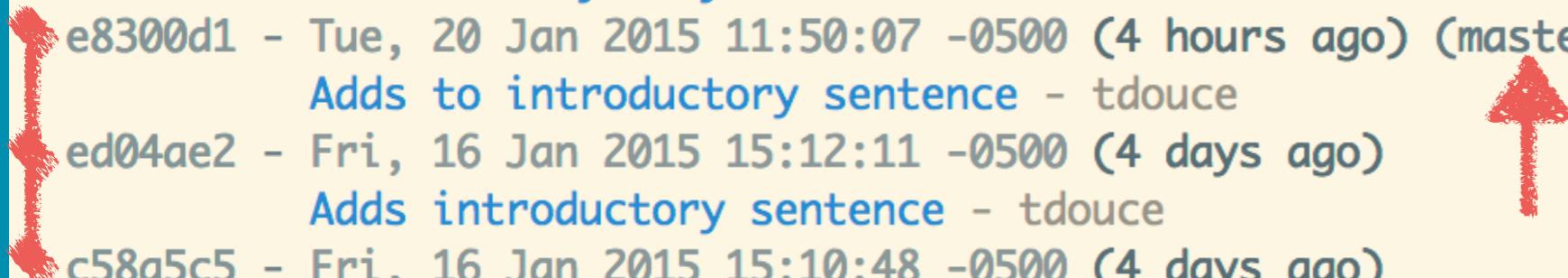
```
~/fairy_tales (jacob_grimmm/body)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
| e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|       Adds to introductory sentence - tdouce
| ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



master has commits

Log as graph

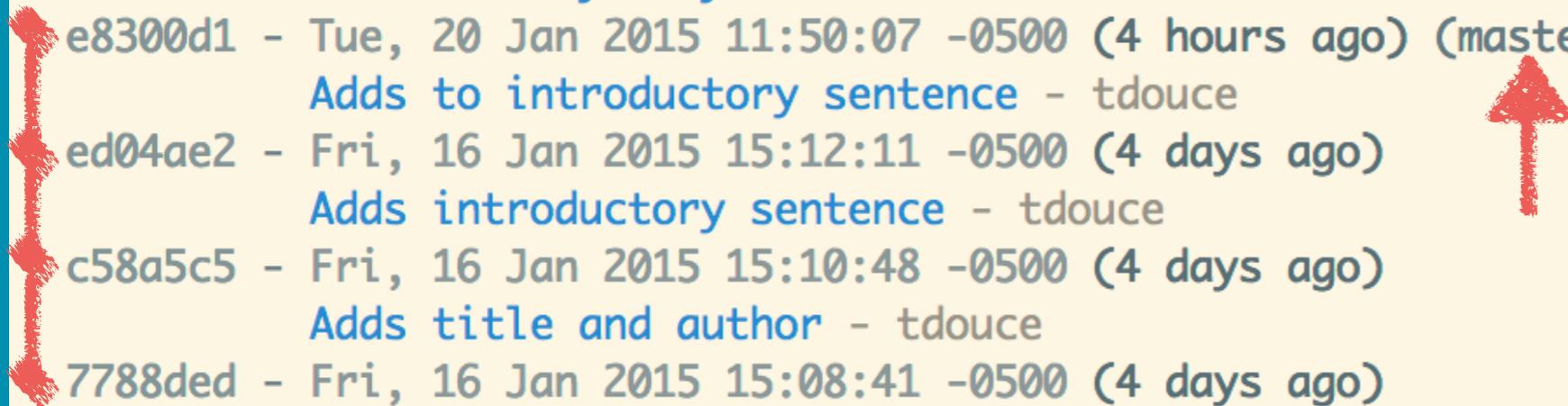
```
~/fairy_tales (jacob_grimmm/body)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
  | Writes story body - tdouce
  e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
    | Adds to introductory sentence - tdouce
  ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
    | Adds introductory sentence - tdouce
  c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
    | Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  | Adds little_red_riding_hood.txt - tdouce
```



master has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (4 minutes ago) (HEAD, jacob_grimmm/body)
|   Writes story body - tdouce
| e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (4 hours ago) (master)
|     Adds to introductory sentence - tdouce
| ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|     Adds introductory sentence - tdouce
| c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|     Adds title and author - tdouce
7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



master has commits

Work Flow #5

Work Flow #5

Feature branches

Work Flow #5

Feature branches

Isolate feature development

Work Flow #5

Feature branches

Isolate feature development

Easily determine author of feature

Jacob finishes
jacob_grimmm/body

Decides it should be in
the story of
Little Red Riding Hood

Incorporate
jacob_grimmm/body
into master

Switch branches

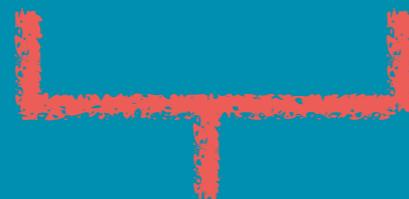
```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
```



Currently, on jacob_grimmm/body branch

Switch branches

```
~/fairy_tales (jacob_grimme/body)$ git checkout master
```



Switch to master branch

Switch branches

```
~/fairy_tales (jacob_grimme/body)$ git checkout master
```



Branch name to switch to

Switch branches

```
~/fairy_tales (jacob_gramm/body)$ git checkout master  
Switched to branch 'master'
```

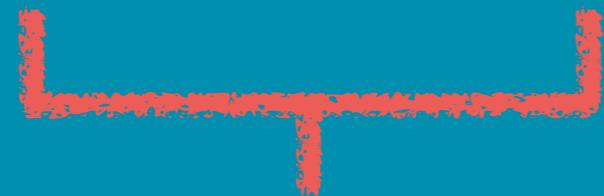


It worked!

Switched to master

Merge

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master  
Switched to branch 'master'  
~/fairy_tales (master)$ git merge jacob_grimmm/body
```



Incorporate **jacob_grimmm/body** into **master**

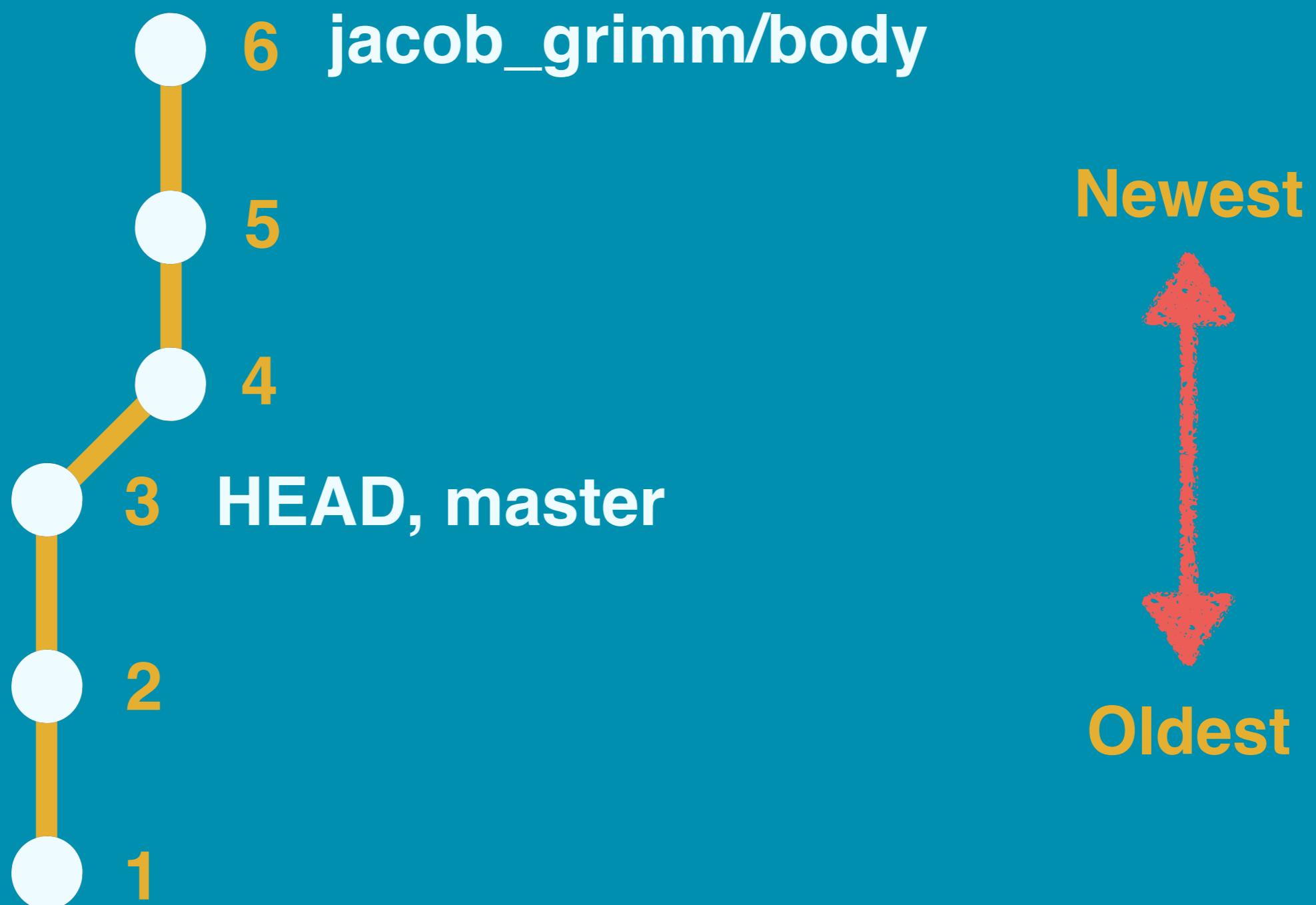
Merge

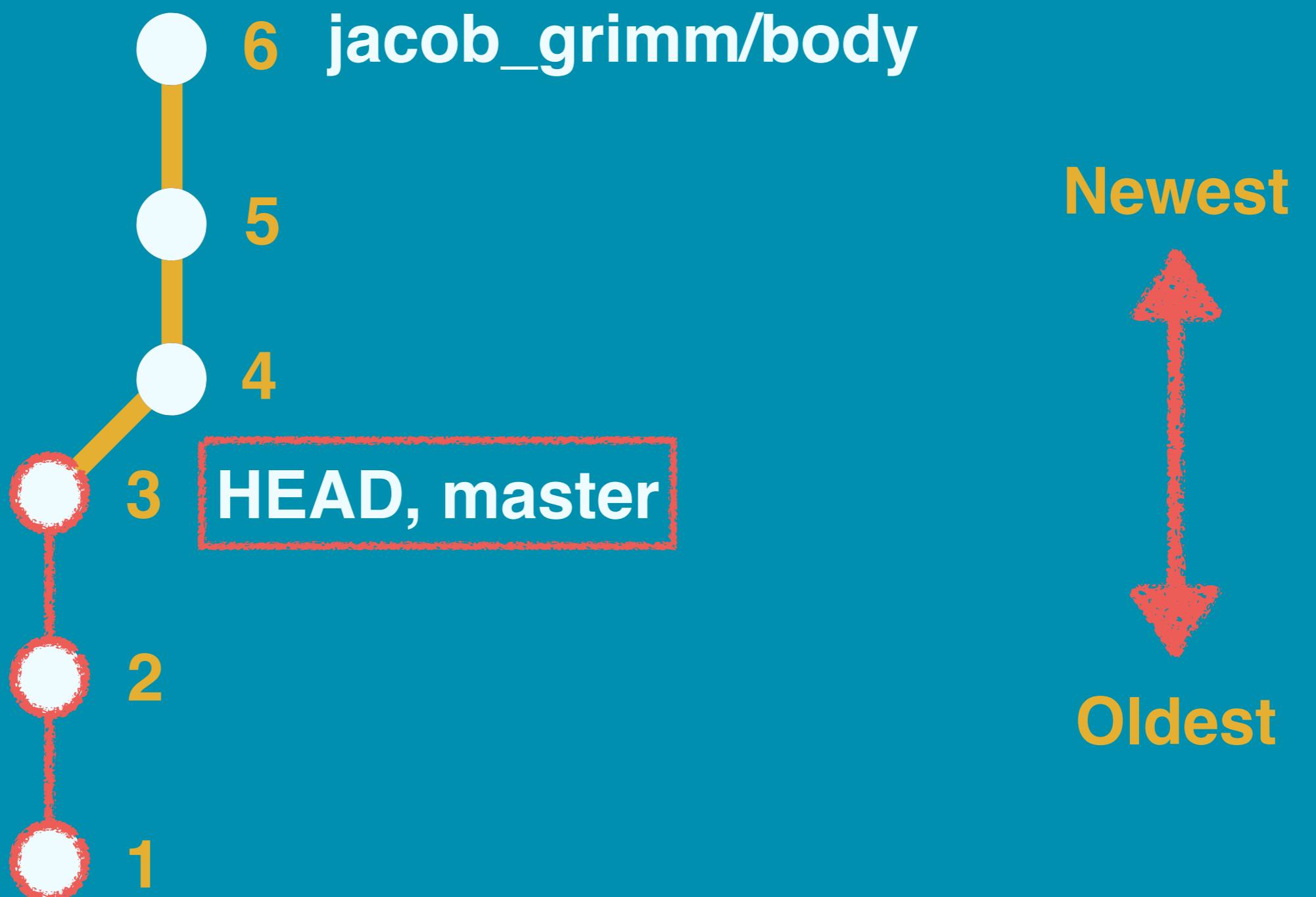
```
~/fairy_tales (jacob_grimmm/body)$ git checkout master  
Switched to branch 'master'  
~/fairy_tales (master)$ git merge jacob_grimmm/body
```

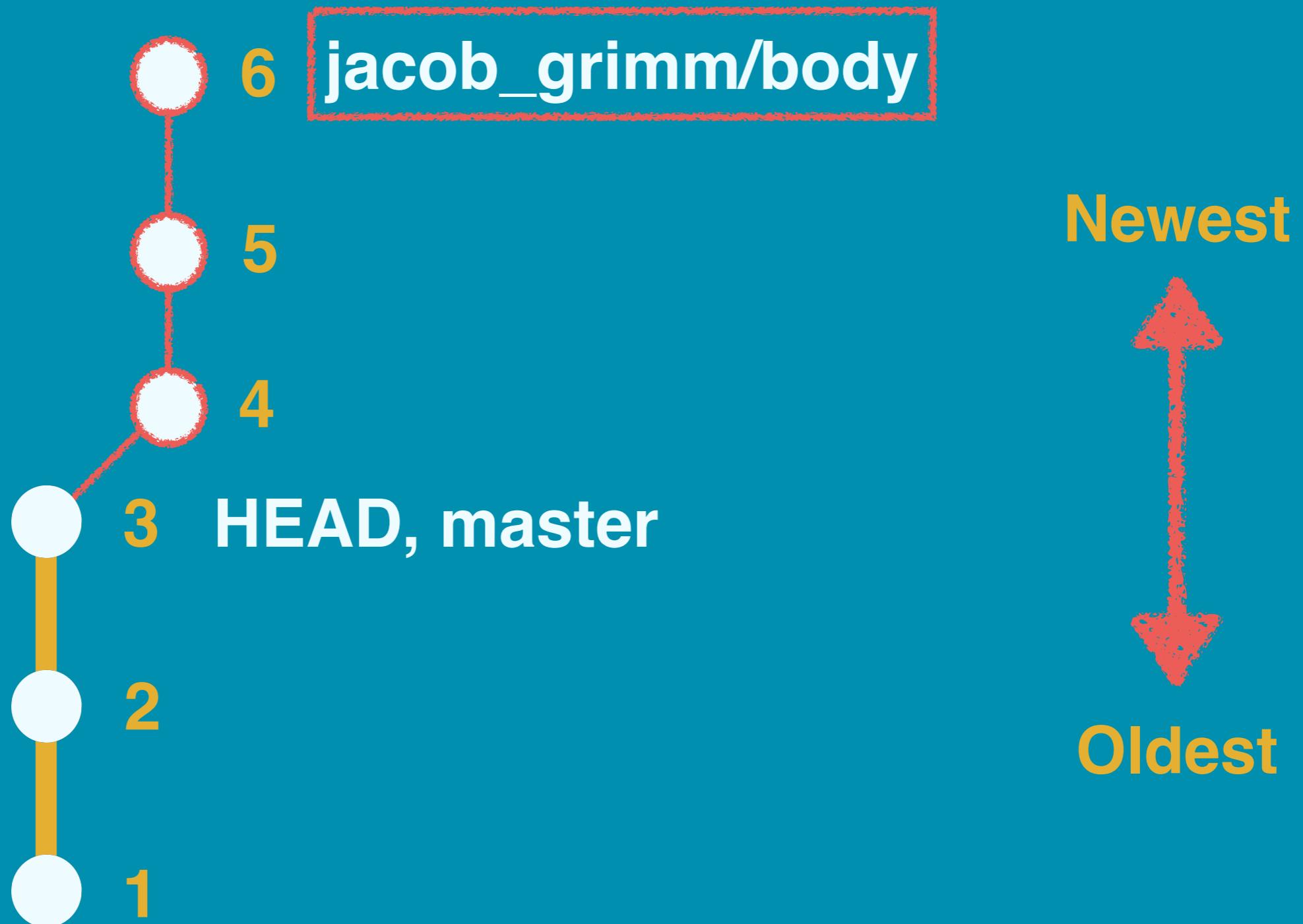


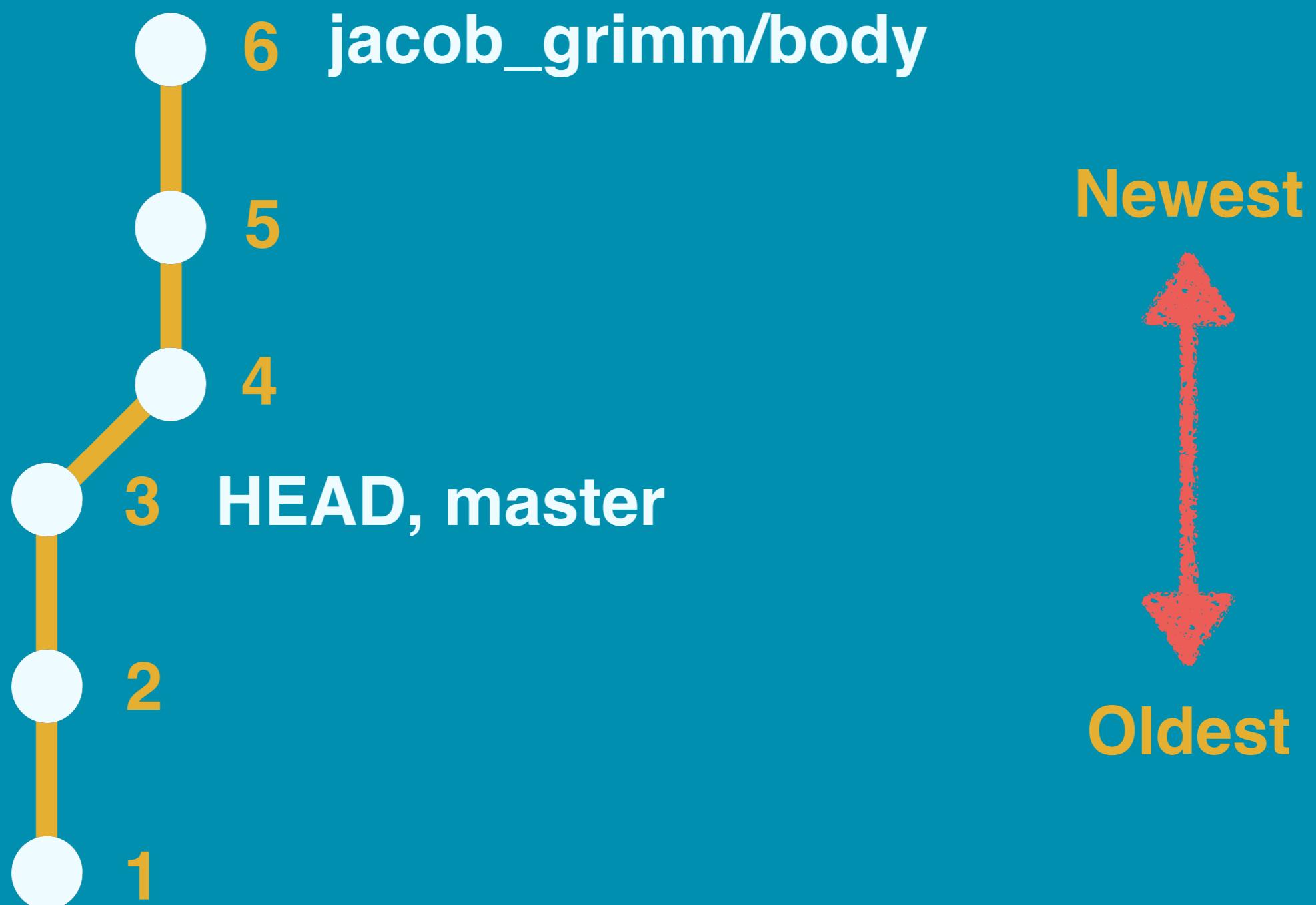
Branch name to incorporate into master

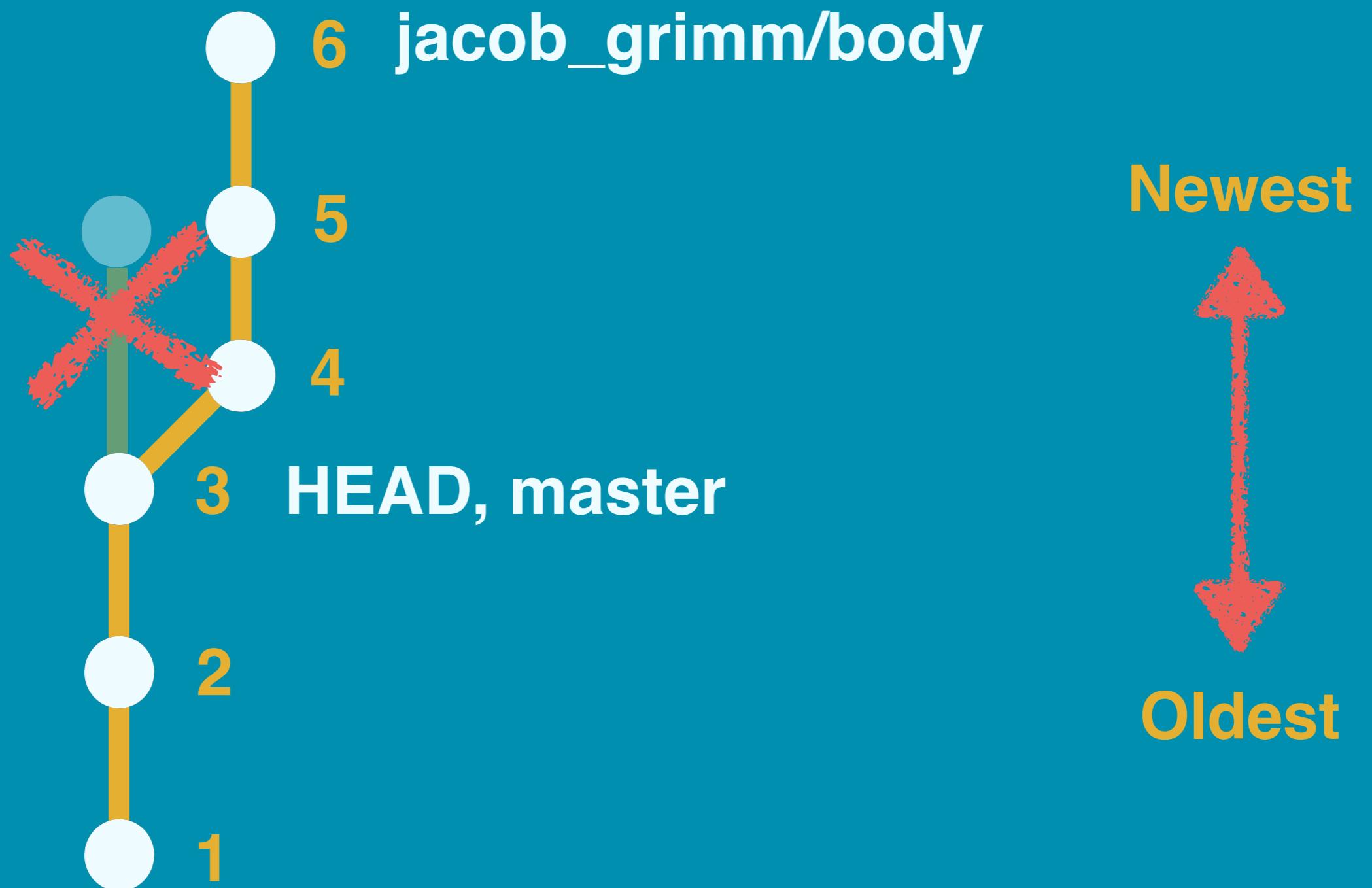
What will happen?
(theoretically)

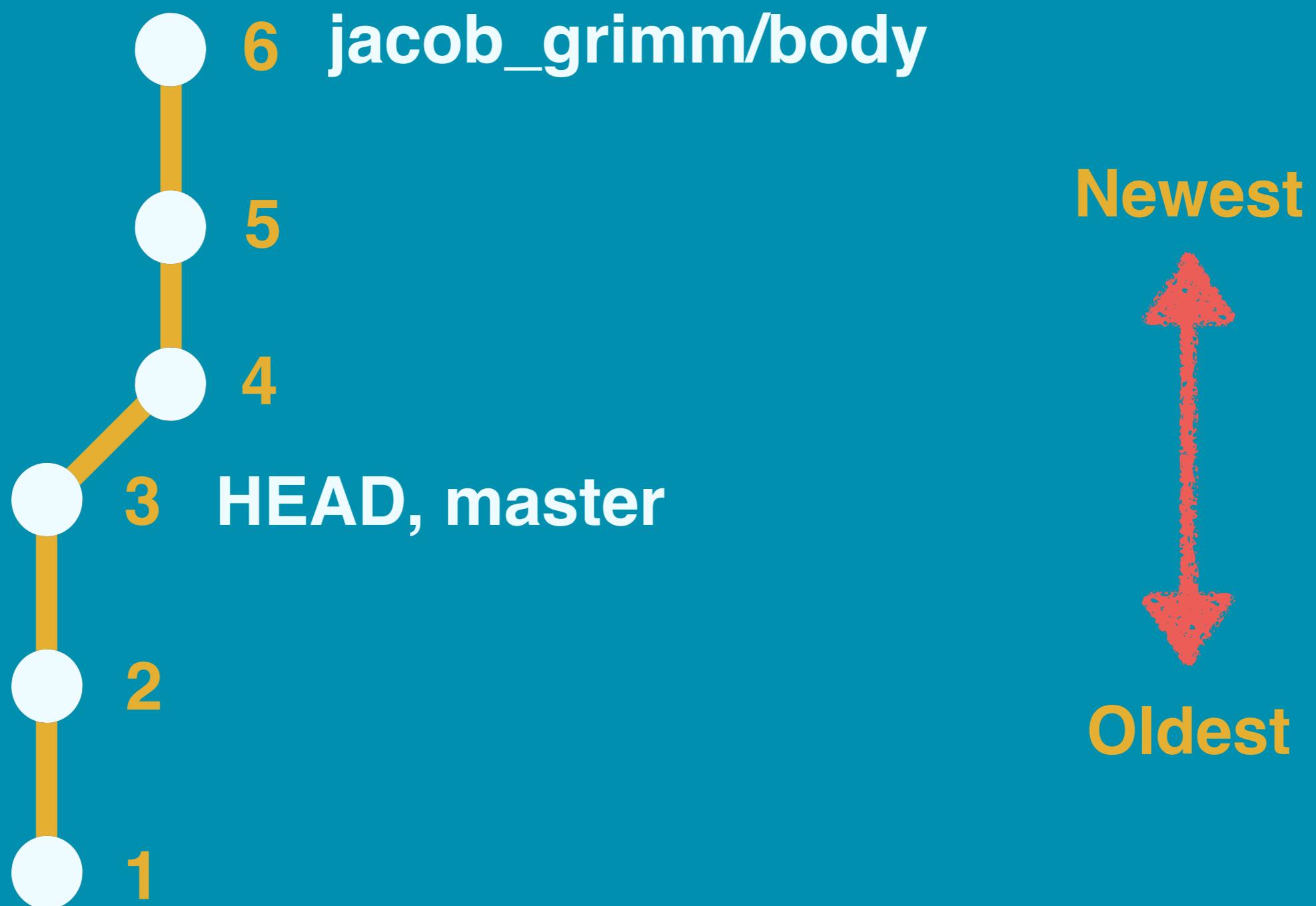
















6

5

4

3

2

1

Newest

Oldest

Merge

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
```

Merge

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
```



It worked!

Merge

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
```

Fast Forward merge strategy

Git will **Fast-forward** merge,
if possible.

Understanding git history

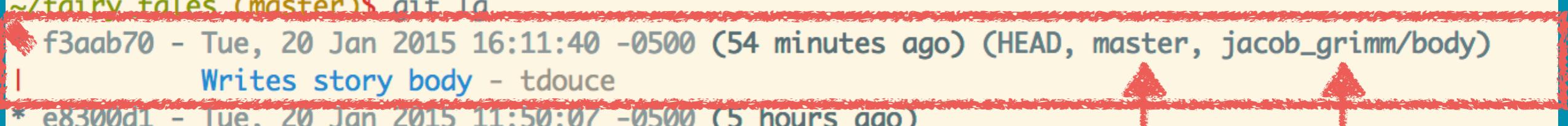


Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (54 minutes ago) (HEAD, master, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (5 hours ago)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git log
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (54 minutes ago) (HEAD, master, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (5 hours ago)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
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|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```



master and jacob_grimmm/body have commits

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (54 minutes ago) (HEAD, master, jacob_grimmm/body)
|   Writes story body - tdouce
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|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

```
graph TD; master[f3aab70] --> master[e8300d1]; master[e8300d1] --> master[ed04ae2]; master[ed04ae2] --> master[c58a5c5]; master[c58a5c5] --> master[7788ded]; jacob_grimmm_body[f3aab70] --> jacob_grimmm_body[e8300d1]
```

master and jacob_grimmm/body have commits

Log as graph

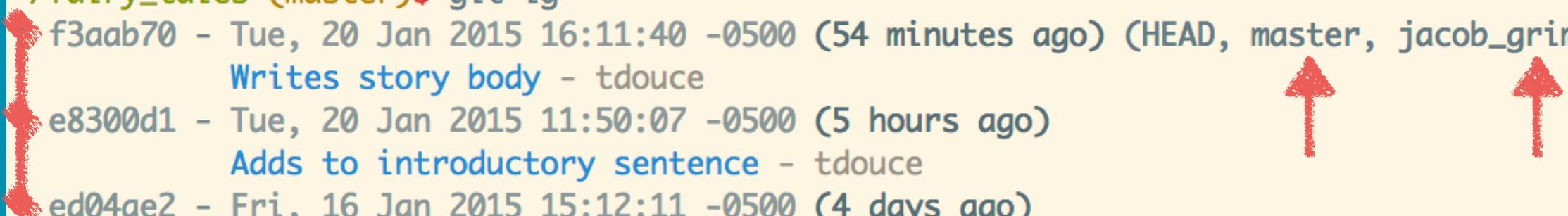
```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
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* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (54 minutes ago) (HEAD, master, jacob_grimmm/body)
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| e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (5 hours ago)
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|   Adds title and author - tdouce
| * 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|   Adds little_red_riding_hood.txt - tdouce
```

```
graph TD; f3aab70[f3aab70] --> e8300d1[e8300d1]; e8300d1 --> ed04ae2[ed04ae2]; e8300d1 --> c58a5c5[c58a5c5]; e8300d1 --> 7788ded[7788ded]
```

master and jacob_grimmm/body have commits

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
Fast-forward
  little_red_riding_hood.text | 161 ++++++
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~/fairy_tales (master)$ git lg
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master and jacob_grimmm/body have commits

Log as graph

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~/fairy_tales (jacob_grimmm/body)$ git checkout master
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Updating e8300d1..f3aab70
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master and jacob_grimmm/body have commits

Log as graph

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~/fairy_tales (jacob_grimmm/body)$ git checkout master
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7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
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```



master and jacob_grimmm/body have commits

What commits originated in
jacob_grimmm/body?

Log as graph

```
~/fairy_tales (jacob_grimmm/body)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git merge jacob_grimmm/body
Updating e8300d1..f3aab70
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|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

What commits originated in
jacob_grimmm/body?

↙(ツ)↗

Make it easy to determine
the commits that originated in
jacob_grimmm/body

Make it easy to determine
the commits that originated in
`jacob_grim/``body`

with merge bubbles

What is a merge bubble?

What is a merge bubble?

We'll see in a moment :)

First, Jacob must
undo the merge

Log as graph

```
~/fairy_tales (master)$ git lg
```

Log as graph

```
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* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grimmm/body)
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```

Find commit before merge

Log as graph

```
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* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bdy)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago)
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  Adds introductory sentence - tdouce
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  Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
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```

Find commit before merge

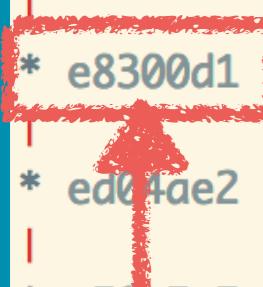
Log as graph

```
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  Adds to introductory sentence - tdouce
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|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



Copy sha to clipboard

Reset

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bbody)
|     Writes story body - tdouce
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|     Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
```



Move HEAD back to commit

Reset

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bbody)
|     Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago)
|     Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|     Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|     Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
```



Discard changes in commit

Reset

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bbody)
|     Writes story body - tdouce
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|     Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
```



Paste sha from clipboard

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bbody)
|     Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago)
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|     Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
HEAD is now at e8300d1 Adds to introductory sentence
```



It worked!

Log as graph

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
HEAD is now at e8300d1 Adds to introductory sentence
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (69 minutes ago) (jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago) (HEAD, master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bdy)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
HEAD is now at e8300d1 Adds to introductory sentence
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (69 minutes ago) (jacob_grim/bdy)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago) (HEAD, master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



Log as graph

```
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (68 minutes ago) (HEAD, master, jacob_grim/bdy)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
~/fairy_tales (master)$ git reset --hard e8300d1
HEAD is now at e8300d1 Adds to introductory sentence
~/fairy_tales (master)$ git lg
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (69 minutes ago) (jacob_grim/bdy)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (6 hours ago) (HEAD, master)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (4 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (4 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (4 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

As if merge
never happened

Again, incorporate
jacob_grimmm/body
into master

And, this time
create a merge bubble

Merge

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
```



Incorporate **jacob_grimmm/body** into **master**
and make a **merge bubble**

Merge

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
```



Branch to merge into master

Merge

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
```



Do not use Fast-forward strategy

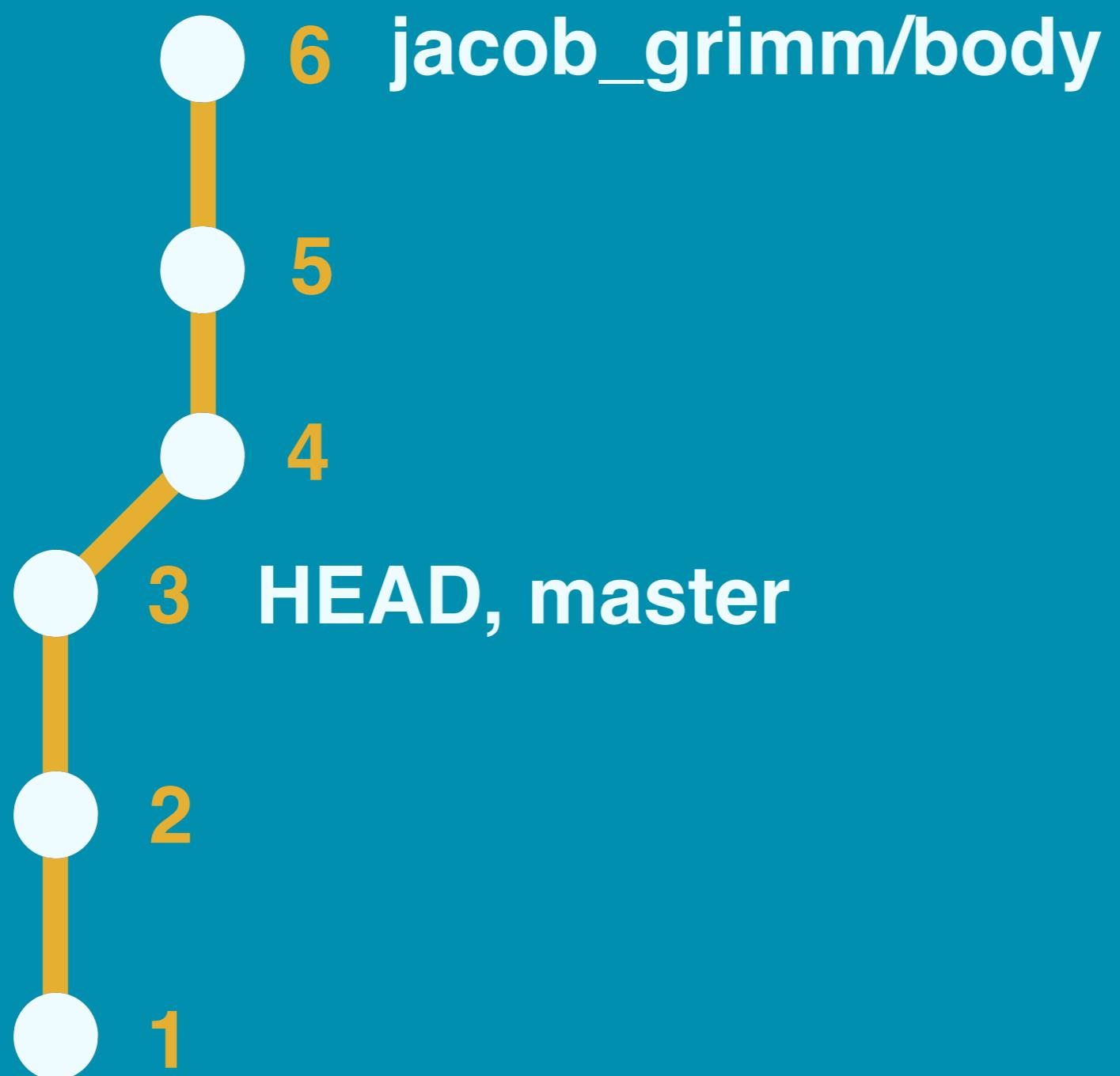
Merge

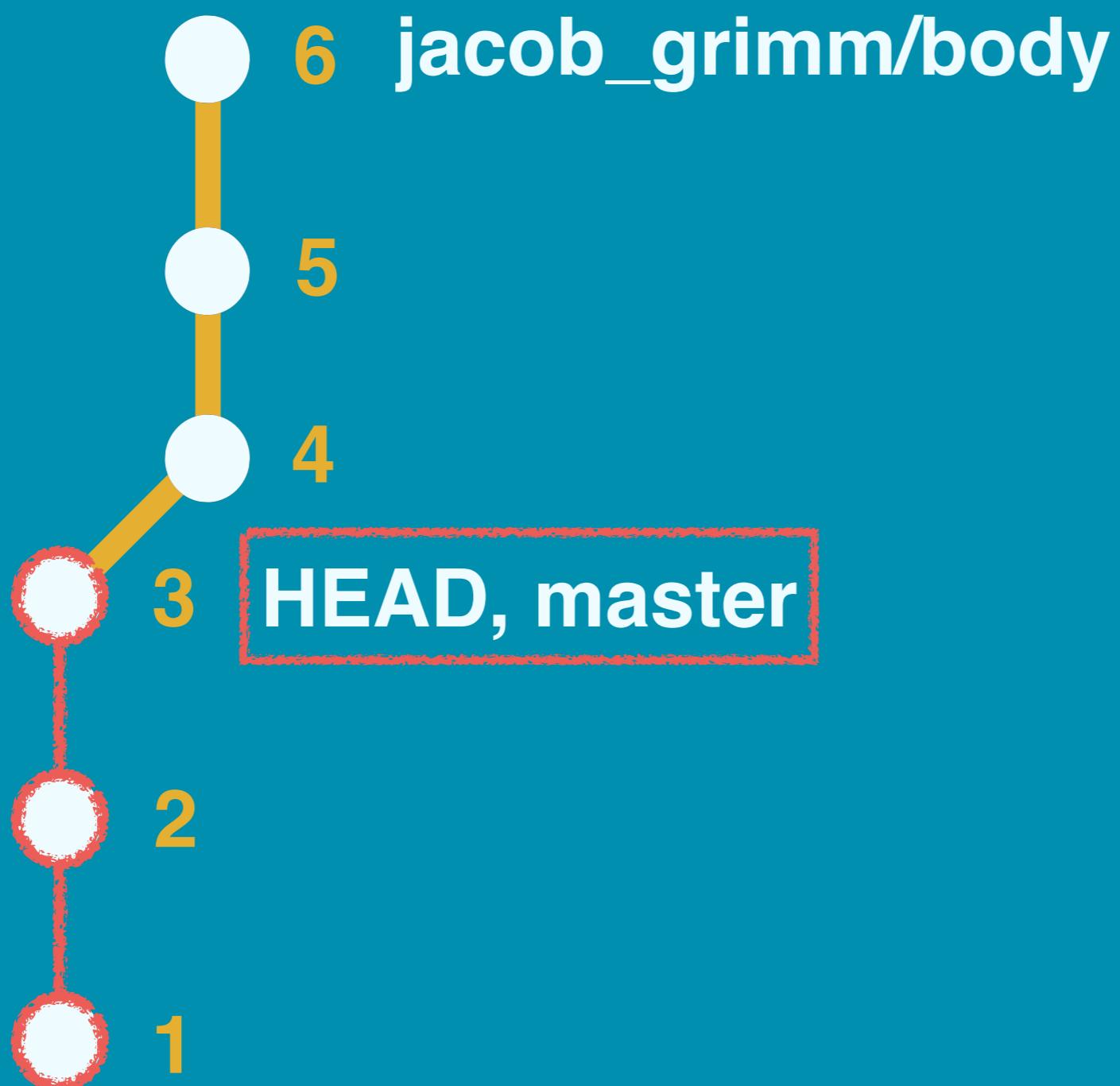
```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
```

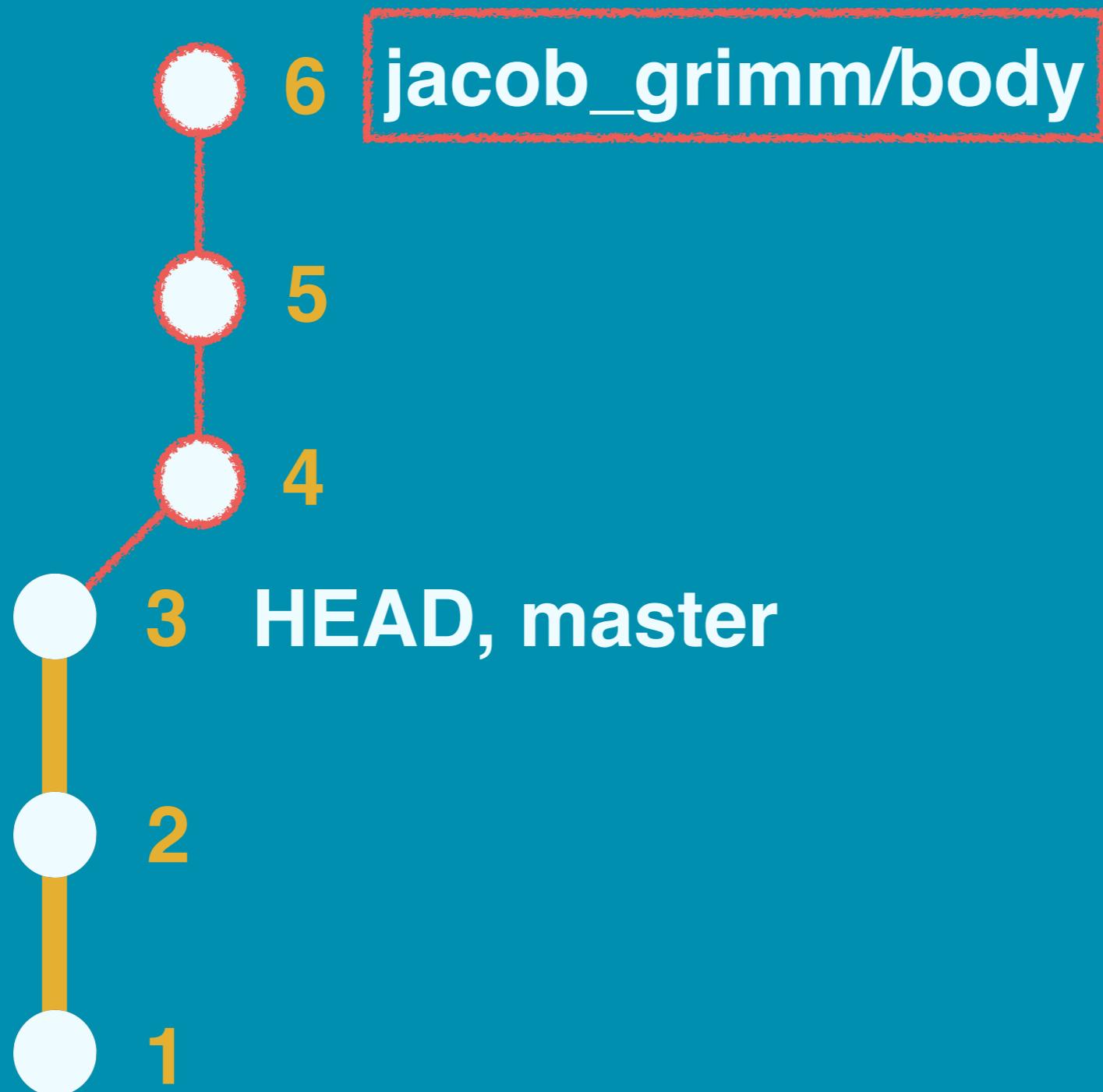


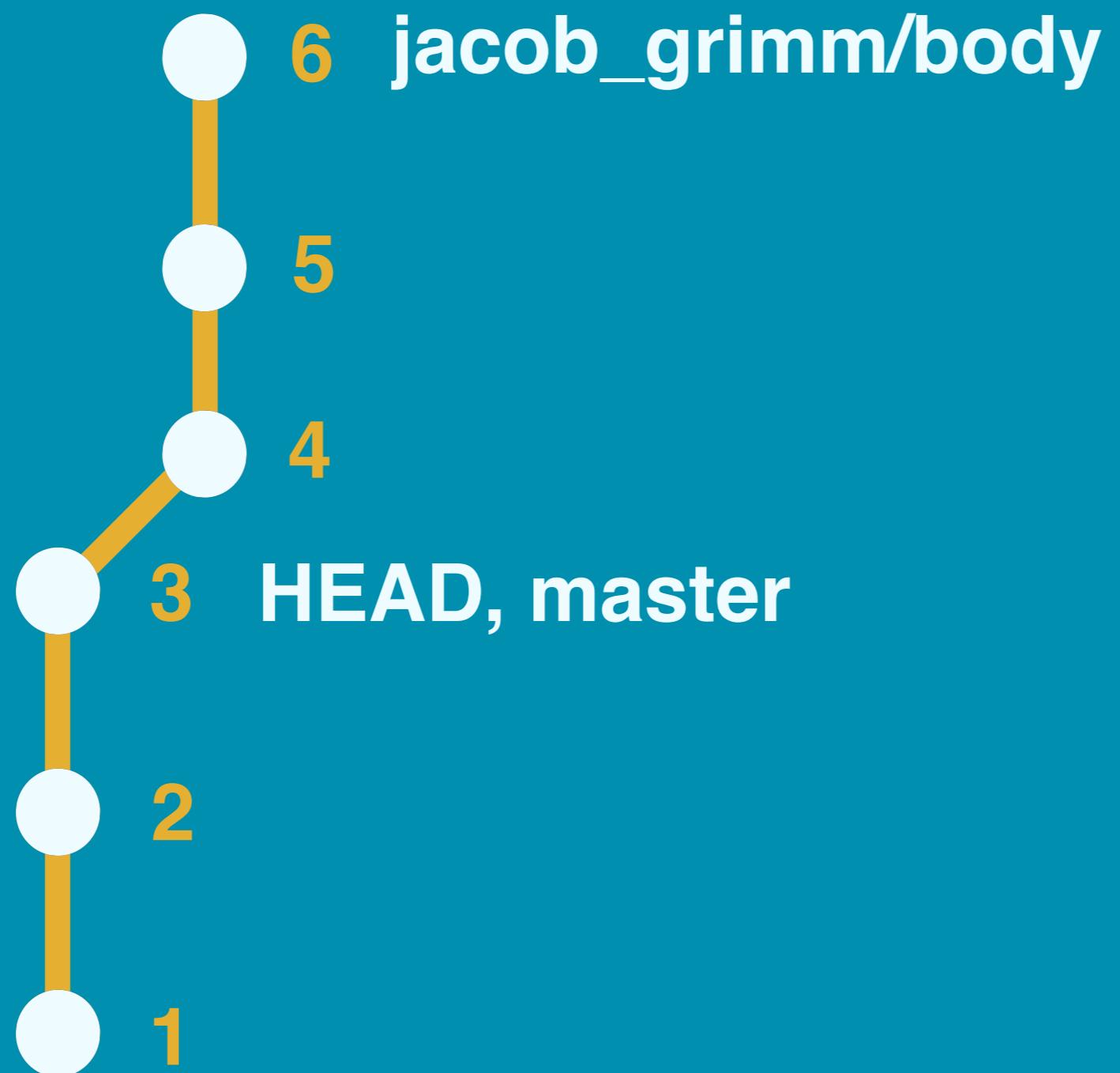
**Do not use Fast-forward strategy
Create a merge bubble!**

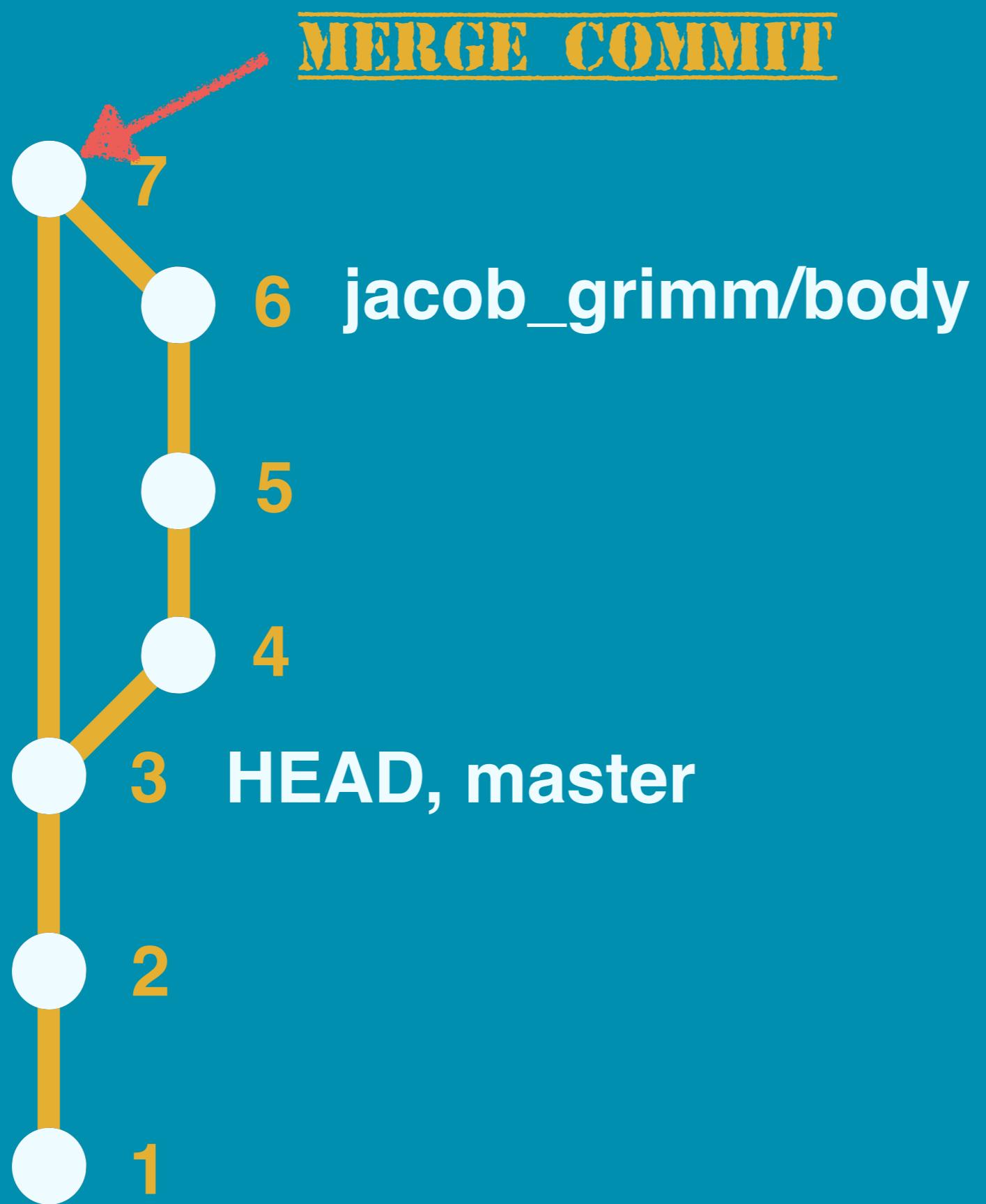
What will happen?
(theoretically)



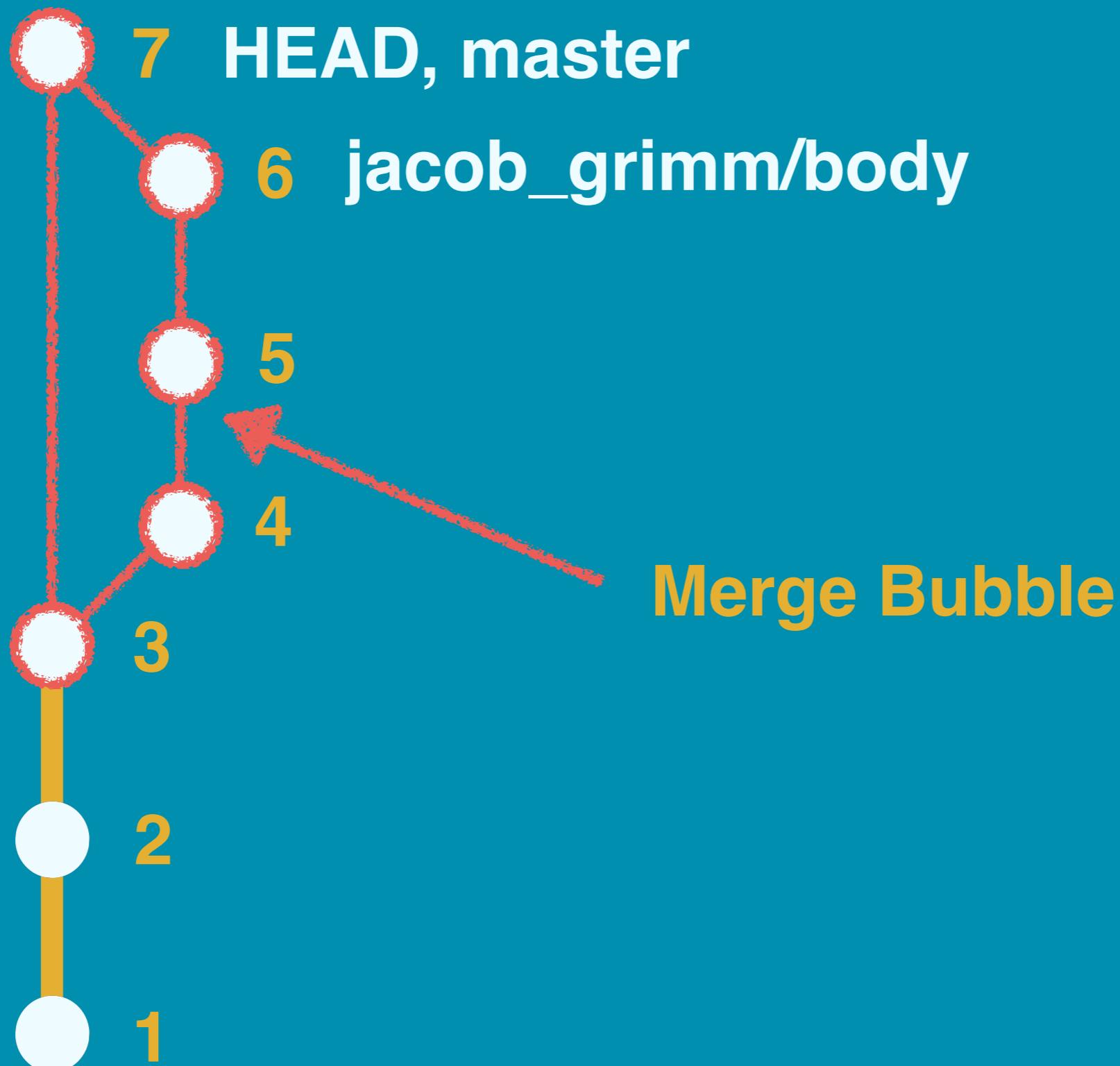


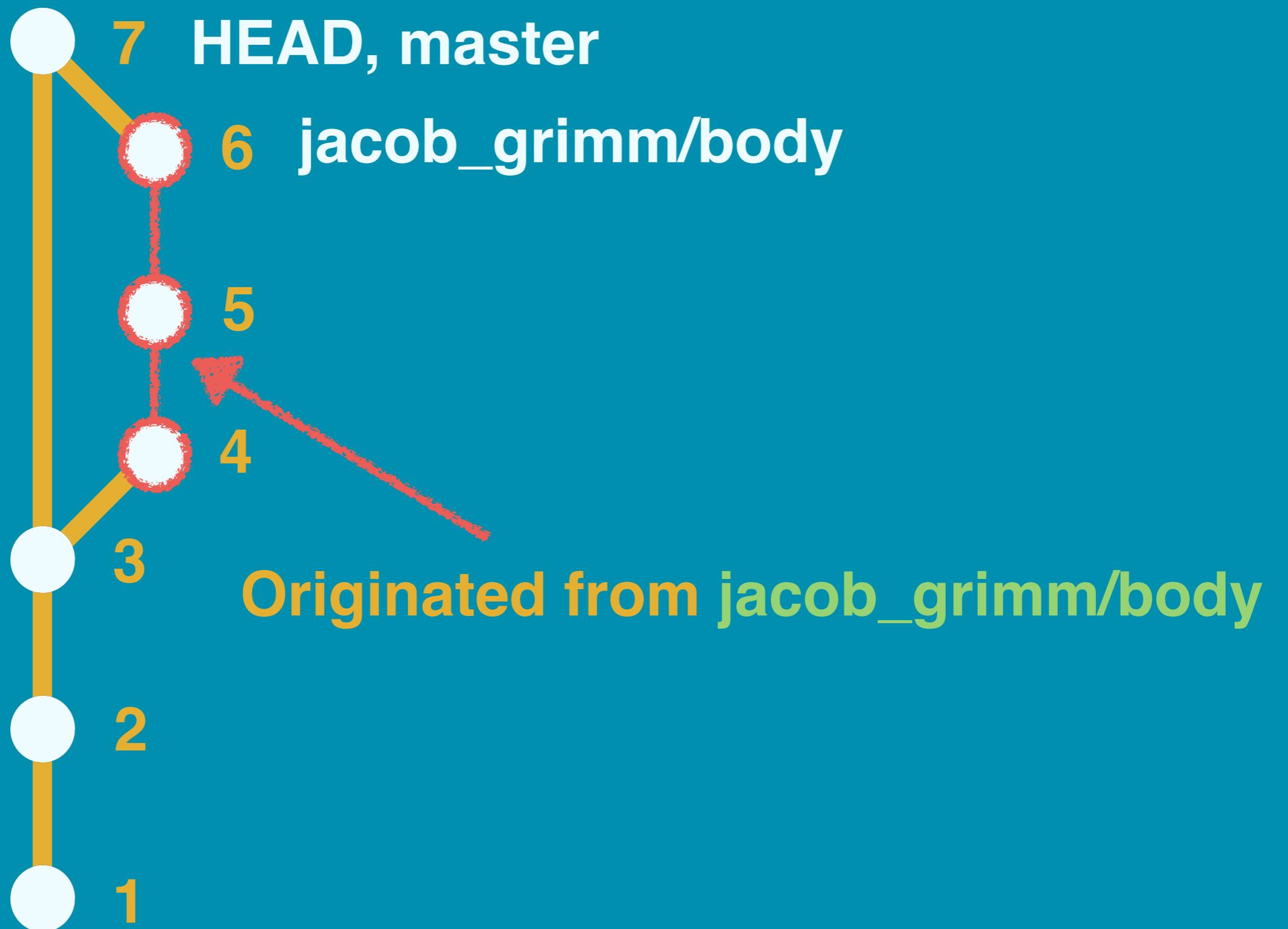












Merge with
Recursive strategy

Merge

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
```



```
1 Merge branch 'jacob_grimmm/body'  
2  
3 # Please enter a commit message to explain why this merge is necessary,  
4 # especially if it merges an updated upstream into a topic branch.  
5 #  
6 # Lines starting with '#' will be ignored, and an empty message aborts  
7 # the commit.  
~  
~  
~  
~  
~  
~  
~  
~  
~
```

auto populates merge commit message

```
1 Merge branch 'jacob_grimmm/body'  
2  
3 # Please enter a commit message to explain why this merge is necessary,  
4 # especially if it merges an updated upstream into a topic branch.  
5 #  
6 # Lines starting with '#' will be ignored, and an empty message aborts  
7 # the commit.  
~  
~  
~  
~  
~  
~  
~  
~  
~
```

save and close

Merge

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
Merge made by the 'recursive' strategy.
 little_red_riding_hood.text | 161 ++++++-----+
 1 file changed, 160 insertions(+), 1 deletion(-)
```

Merge

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
```

```
Merge made by the 'recursive' strategy.
```

```
little_red_riding_hood.text | 161 ++++++-----  
1 file changed, 160 insertions(+), 1 deletion(-)
```



It worked!

Merge

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.txt | 161 ++++++
                           1 file changed, 160 insertions(+), 1 deletion(-)
```

Merged with recursive strategy

Understanding git history



Log as graph

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
                               1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
```

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
                               1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
|\       Merge branch 'jacob_grimmm/body' - tdouce
| * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
|/       Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimme/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.txt
  ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
```

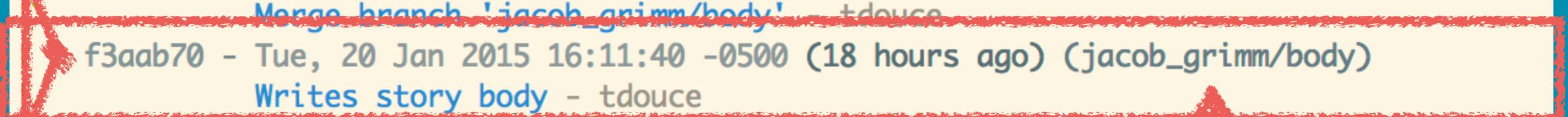
Merge bubble

```
~/fairy_tales (master)$ git lg
d49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
  Merge branch 'jacob_grimme/body' - tdouce
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimme/body)
  Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
  Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
  Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
  Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

git log --graph --oneline --decorate

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
  da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
    Merge branch 'jacob_grimmm/body' - tdouce
  f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
  e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
    Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



Originated from jacob_grimmm/body

Made it easy to
determine origin of commit

merge bubble == feature branch

Log as graph

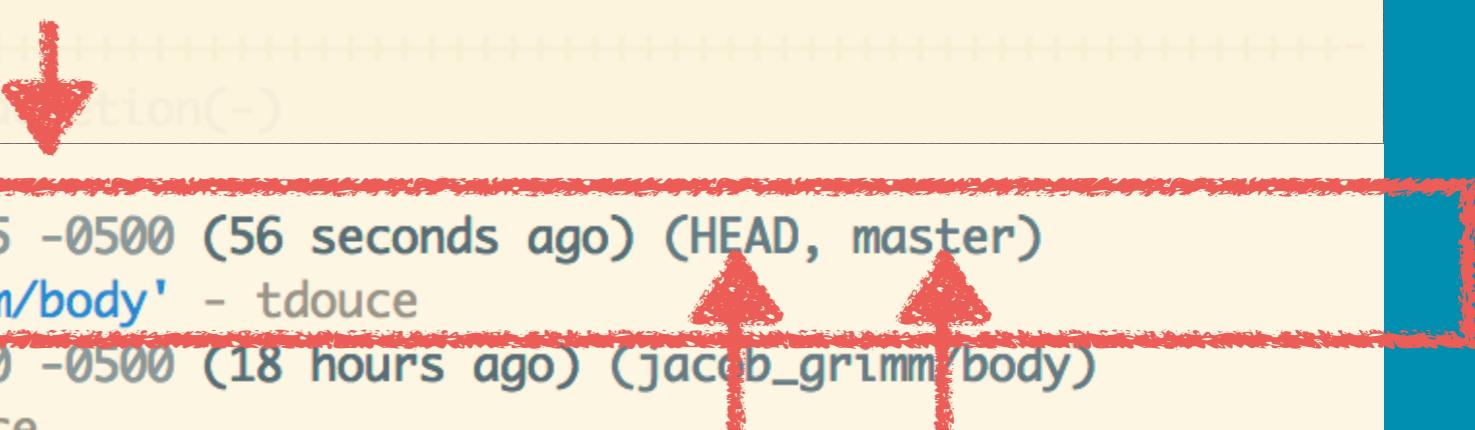
```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
```

```
~/fairy_tales (master)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
| \ Merge branch 'jacob_grim/body' - tdouce
| * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grim/body)
| /   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
|     Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|     Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
|     Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

HEAD and master are at commit

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grim/body -s recursive  
Merge made by the 'recursive' strategy.  
  little_red_riding_hood.txt | 161 +-----+-----+-----+  
  1 file changed, 160 insertions(+), 1 deletion(-)  
  
~/fairy_tales (master)$ git lg  
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)  
|\ \ Merge branch 'jacob_grim/body' - tdouce  
| * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grim/body)  
| /   Writes story body - tdouce  
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)  
|     Adds to introductory sentence - tdouce  
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)  
|     Adds introductory sentence - tdouce  
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)  
|     Adds title and author - tdouce  
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)  
    Adds little_red_riding_hood.txt - tdouce
```



HEAD and master are at commit

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
```

```
~/fairy_tales (master)$ git lg
  da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
  | \ Merge branch 'jacob_grim/body' - tdouce
  * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grim/body)
  | /   Writes story body - tdouce
  * e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
  |     Adds to introductory sentence - tdouce
  * ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
  |     Adds introductory sentence - tdouce
  * c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
  |     Adds title and author - tdouce
  * 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

master has commits

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
|   Merge branch 'jacob_grimmm/body' - tdouce
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
|   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



master has commits

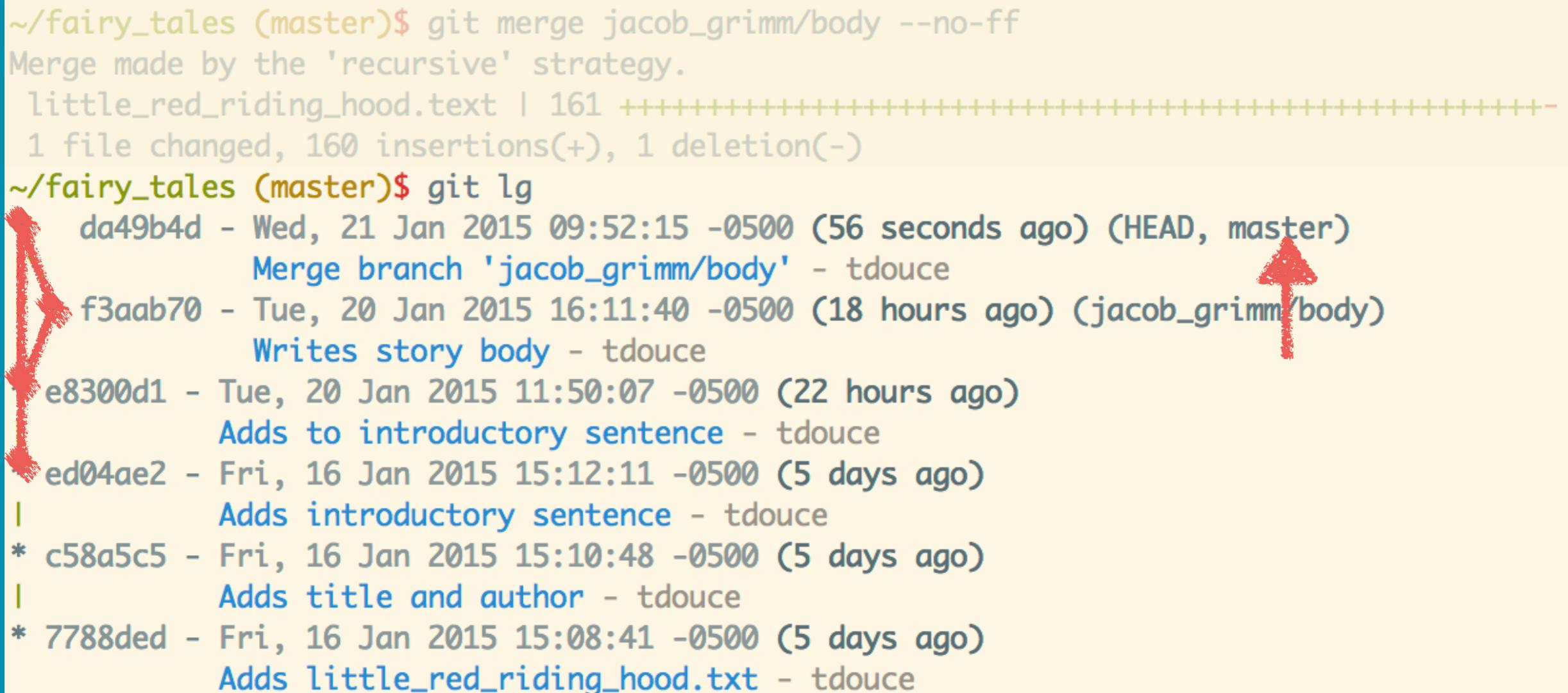
Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
  Merge branch 'jacob_grimmm/body' - tdouce
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
  Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
  Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
  Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
  Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

master has commits

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grim/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
  Merge branch 'jacob_grim/body' - tdouce
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grim/branch)
  Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
  Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
  Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
  Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
  Adds little_red_riding_hood.txt - tdouce
```



master has commits

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg


da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
  Merge branch 'jacob_grimmm/body' - tdouce
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
  Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
  Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
  Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
  Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
  Adds little_red_riding_hood.txt - tdouce
```

master has commits

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
  da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
    Merge branch 'jacob_grimmm/body' - tdouce
  f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
  e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
    Adds to introductory sentence - tdouce
  ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
  c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
  7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```



master has commits

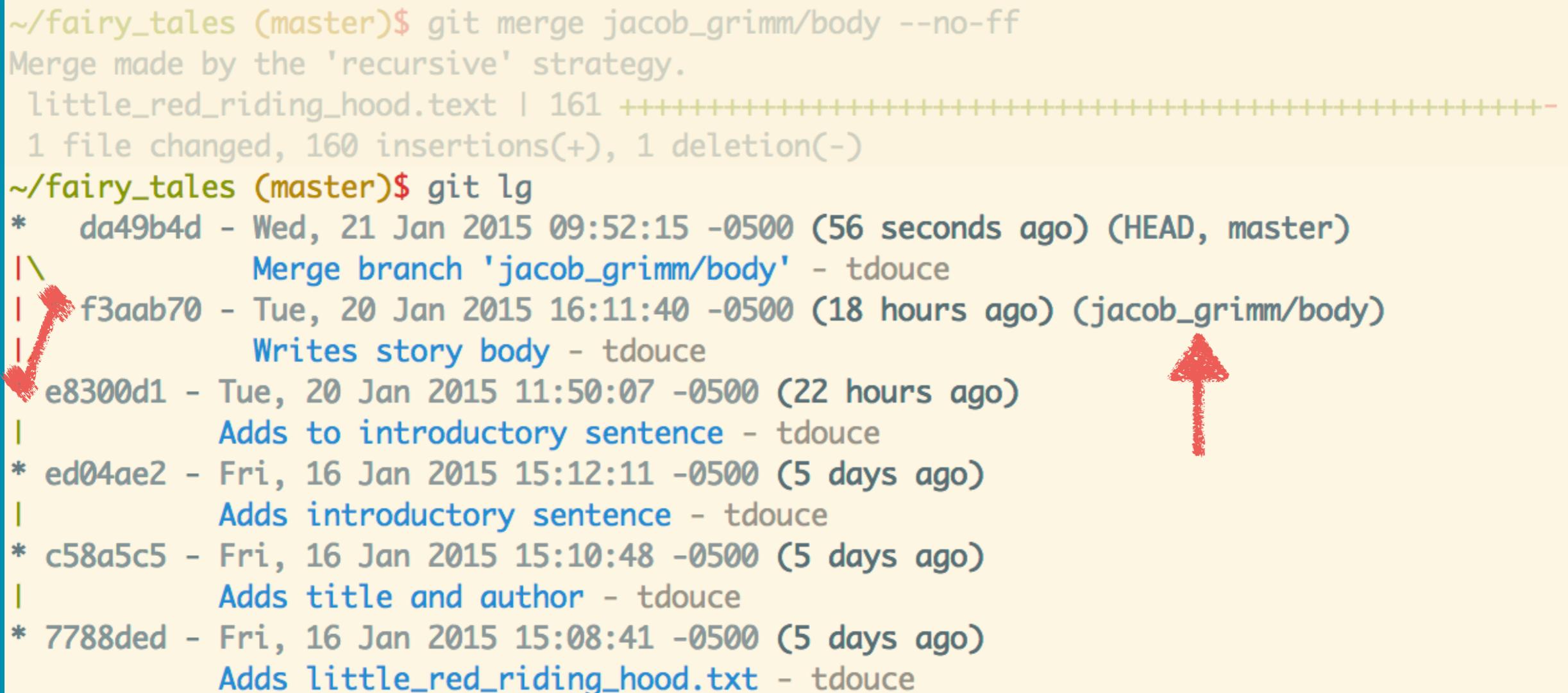
Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
|   Merge branch 'jacob_grimmm/body' into tdocce
|   f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
|       Writes story body - tdocce
|       ↑
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
|       Adds to introductory sentence - tdocce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|       Adds introductory sentence - tdocce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
|       Adds title and author - tdocce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
|       Adds little_red_riding_hood.txt - tdocce
```

jacob_grimmm/body has commits

Log as graph

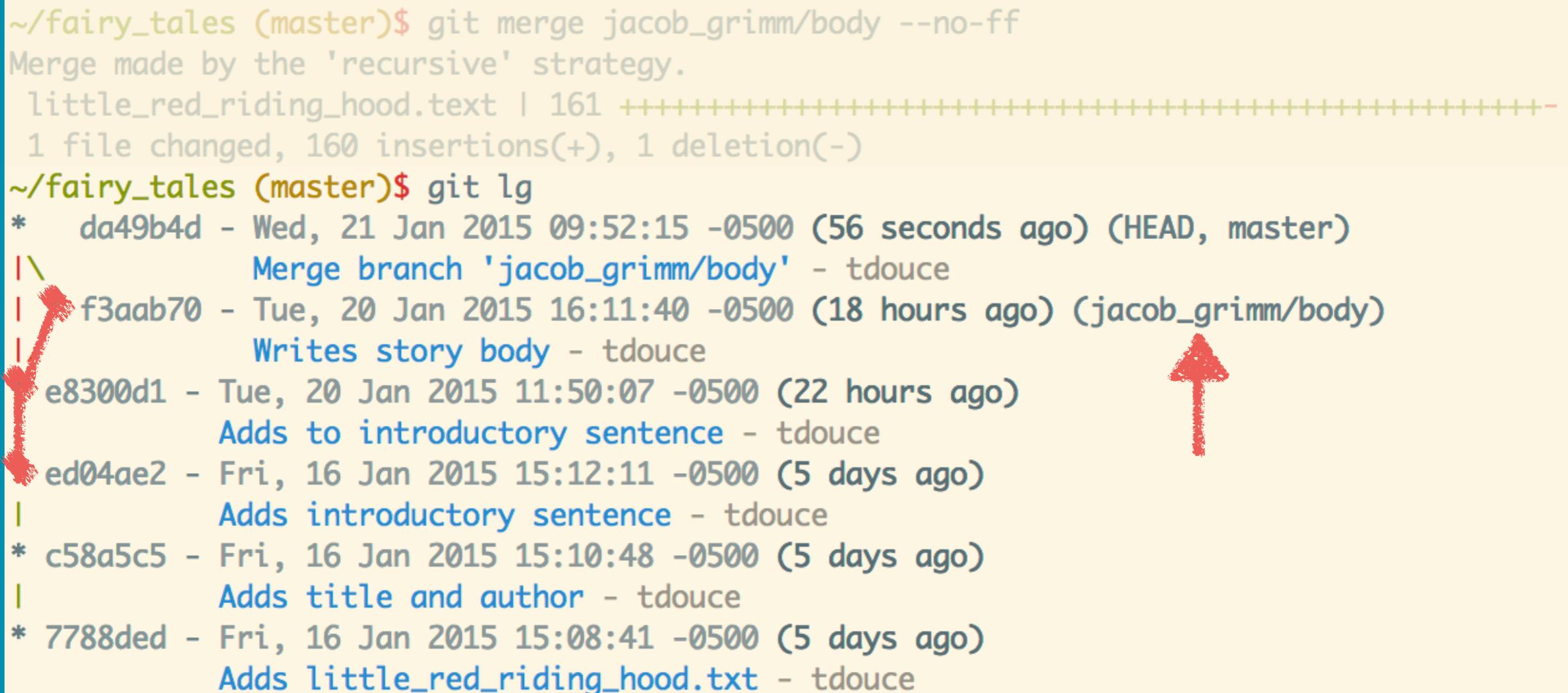
```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
|   Merge branch 'jacob_grimmm/body' - tdouce
|   f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
|       Writes story body - tdouce
|   e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
|       Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|       Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
|       Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
|   Merge branch 'jacob_grimmm/body' - tdouce
|   f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
|       Writes story body - tdouce
|   e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (22 hours ago)
|       Adds to introductory sentence - tdouce
|   ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|       Adds introductory sentence - tdouce
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|       Adds title and author - tdouce
*   7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
|       Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body has commits

Log as graph

```
~/fairy_tales (master)$ git merge jacob_grimmm/body --no-ff
Merge made by the 'recursive' strategy.
  little_red_riding_hood.text | 161 ++++++
  1 file changed, 160 insertions(+), 1 deletion(-)
~/fairy_tales (master)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (56 seconds ago) (HEAD, master)
|   Merge branch 'jacob_grimmm/body' - tdouce
|   f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (18 hours ago) (jacob_grimmm/body)
|       Writes story body - tdouce
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jacob_grimmm/body has commits

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  Adds title and author - tdouce
7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
  Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/body does NOT have merge commit

Work Flow #6

No Fast Forward merge strategy

Work Flow #6

No Fast Forward merge strategy

Use when merging feature branches

No Fast Forward merge strategy

Use when merging feature branches

Easily determine from which
feature branch a commit originated

Wilhelm Grimm

JEALOUS

Wilhelm Grimm

JEALOUS



Wilhelm Grimm

JEALOUS



How to collaborate with someone across the world?



How to collaborate with someone across the world?



Remotes



GitLab

Remotes



Create repo on GitHub (remote)

A screenshot of a GitHub repository page for 'jgrimm/fairy_tales'. The page includes a navigation bar with links to 'Explore', 'Gist', 'Blog', and 'Help'. The user profile 'jgrimm' is shown with 0 stars and 0 issues. A red arrow points from the top left towards the repository name 'jgrimm/fairy_tales'. The main content area contains sections for 'Quick setup' (with options for 'Set up in Desktop', 'HTTP', or 'SSH'), command-line instructions for creating a new repository, and instructions for pushing an existing repository. On the right side, there are links for 'Code', 'Issues', 'Pull Requests', 'Wiki', 'Pulse', 'Graphs', and 'Settings'.

This repository Search

Explore Gist Blog Help

jgrimm + 0 0 0

jgrimm / fairy_tales

Watch 0 Star 0

Quick setup — if you've done this kind of thing before

Set up in Desktop or **HTTP** **SSH** git@github.com:tdouce/fairy_tales.git

We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).

...or create a new repository on the command line

```
touch README.md  
git init  
git add README.md  
git commit -m "first commit"  
git remote add origin git@github.com:tdouce/fairy_tales.git  
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin git@github.com:tdouce/fairy_tales.git  
git push -u origin master
```

Code Issues 0 Pull Requests 0 Wiki Pulse Graphs Settings

Create repo on GitHub (remote)

This screenshot shows a GitHub repository page for `jgrimm/fairy_tales`. The top navigation bar includes links for `Explore`, `Gist`, `Blog`, and `Help`. The user profile `jgrimm` is shown with options to `Watch` and `Star` the repository. The repository name `jgrimm/fairy_tales` is displayed above a note about quick setup.

Quick setup — if you've done this kind of thing before

`Set up in Desktop` or `HTTP` `SSH` `git@github.com:tdouce/fairy_tales.git`

We recommend every repository include a `README`, `LICENSE`, and `.gitignore`.

...or create a new repository on the command line

```
touch README.md  
git init  
git add README.md  
git commit -m "first commit"  
git remote add origin git@github.com:tdouce/fairy_tales.git  
git push -u origin master
```

copy to clipboard

...or push an existing repository from the command line

```
git remote add origin git@github.com:tdouce/fairy_tales.git  
git push -u origin master
```

The right sidebar contains links for `Code`, `Issues` (0), `Pull Requests` (0), `Wiki`, `Pulse`, `Graphs`, and `Settings`.

Remotes

```
~/fairy_tales (master)$ git remote
```



Display all remotes configured with local repo

Remotes

```
~/fairy_tales (master)$ git remote
```

None configured

Remotes

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git
```



Add GitHub as a remote for local repo

Remotes

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git
```



How we will refer to GitHub locally (shortcode)

Remotes

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git
```



Url associated with remote (GitHub)

Remotes

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git
```



Paste url from clipboard

Remotes

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git  
~/fairy_tales (master)$ git remote
```



Display all remotes configured with local repo

Remotes

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git  
~/fairy_tales (master)$ git remote  
origin
```



We configured a remote!

Move code to remote

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git  
~/fairy_tales (master)$ git remote  
origin  
~/fairy_tales (master)$ git push origin master
```



Move code from local repo to remote repo

Move code to remote

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git  
~/fairy_tales (master)$ git remote  
origin  
~/fairy_tales (master)$ git push origin master
```



Name of remote (GitHub)

Move code to remote

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git  
~/fairy_tales (master)$ git remote  
origin  
~/fairy_tales (master)$ git push origin master
```

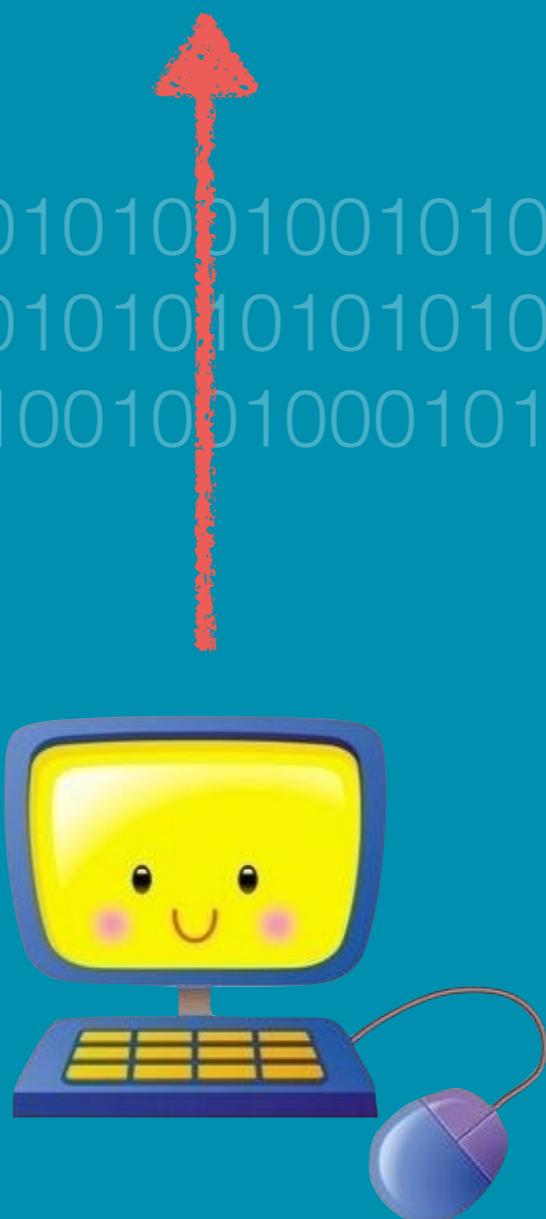


Name of branch





011101001010010010100100101
000100101010101010101011010
111010010010010001010101010



Move code to remote

```
~/fairy_tales (master)$ git remote
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git
~/fairy_tales (master)$ git remote
origin
~/fairy_tales (master)$ git push origin master
Counting objects: 16, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (15/15), done.
Writing objects: 100% (16/16), 4.39 KiB | 0 bytes/s, done.
Total 16 (delta 3), reused 0 (delta 0)
To git@github.com:tdouce/fairy_tales.git
 * [new branch]      master -> master
```

Move code to remote

```
~/fairy_tales (master)$ git remote  
~/fairy_tales (master)$ git remote add origin git@github.com:tdouce/fairy_tales.git  
~/fairy_tales (master)$ git remote  
origin  
~/fairy_tales (master)$ git push origin master  
Counting objects: 16, done.  
Delta compression using up to 8 threads.  
Compressing objects: 100% (15/15), done.  
Writing objects: 100% (16/16), 4.39 KiB | 0 bytes/s, done.  
Total 16 (delta 3), reused 0 (delta 0)  
To git@github.com:tdouce/fairy_tales.git  
 * [new branch] master -> master
```



It worked!

GitHub (remote)

 [jgrimm/fairy_tales](#) Watch ▾ 0

Demonstration repo for "Git Workflow: Little Red Riding Hood and the Big Bad Ogre" — [Edit](#)

 6 commits  1 branch  0 releases  1 contributor

 [jgrimm](#)  branch: [master](#) [▼](#) [fairy_tales](#) / [+](#) 

Merge branch 'jacob_grimme/body'

 [tdouce](#) authored 3 hours ago latest commit da49b4dd60 

 [little_red_riding_hood.text](#) Writes story body 21 hours ago

Help people interested in this repository understand your project by adding a README! [Add a README](#)



Understanding git history



Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
```

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (4 hours ago) (HEAD, origin/master, master)
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|       Merge branch 'jacob_grimmm/body' - tdouce
| * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (21 hours ago) (jacob_grimmm/body)
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|       Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales (jacob_grimmm/bia_bare)$ git log
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (4 hours ago) (HEAD, origin/master, master)
  Merge branch 'jacob_grimmm/body' - tdouce
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (21 hours ago) (jacob_grimmm/body)
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```

origin/master and master have commits

What is origin/master?

What is origin/master?
master branch on remote

What is origin/master?
master branch on remote

Remember: We aliased
GitHub as origin

Log as graph

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~/fairy_tales (jacob_grimmm/bia_bare)$ git log
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (4 hours ago) (HEAD, origin/master, master)
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```

origin/master and master have commits

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jacob_grimmm/body has commits

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jacob_grimmm/body has commits

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jacob_grimmm/body has commits

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```

jacob_grimmm/body has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
*   da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (4 hours ago) (HEAD, origin/master, master)
    Merge branch 'jacob_grimmm/body' - tdouce
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|     Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/body has commits

Jacob writes the

THE BIG BAD AGRE

ending

Create feature branch

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre
```



Create branch and switch to it

Create feature branch

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre
```

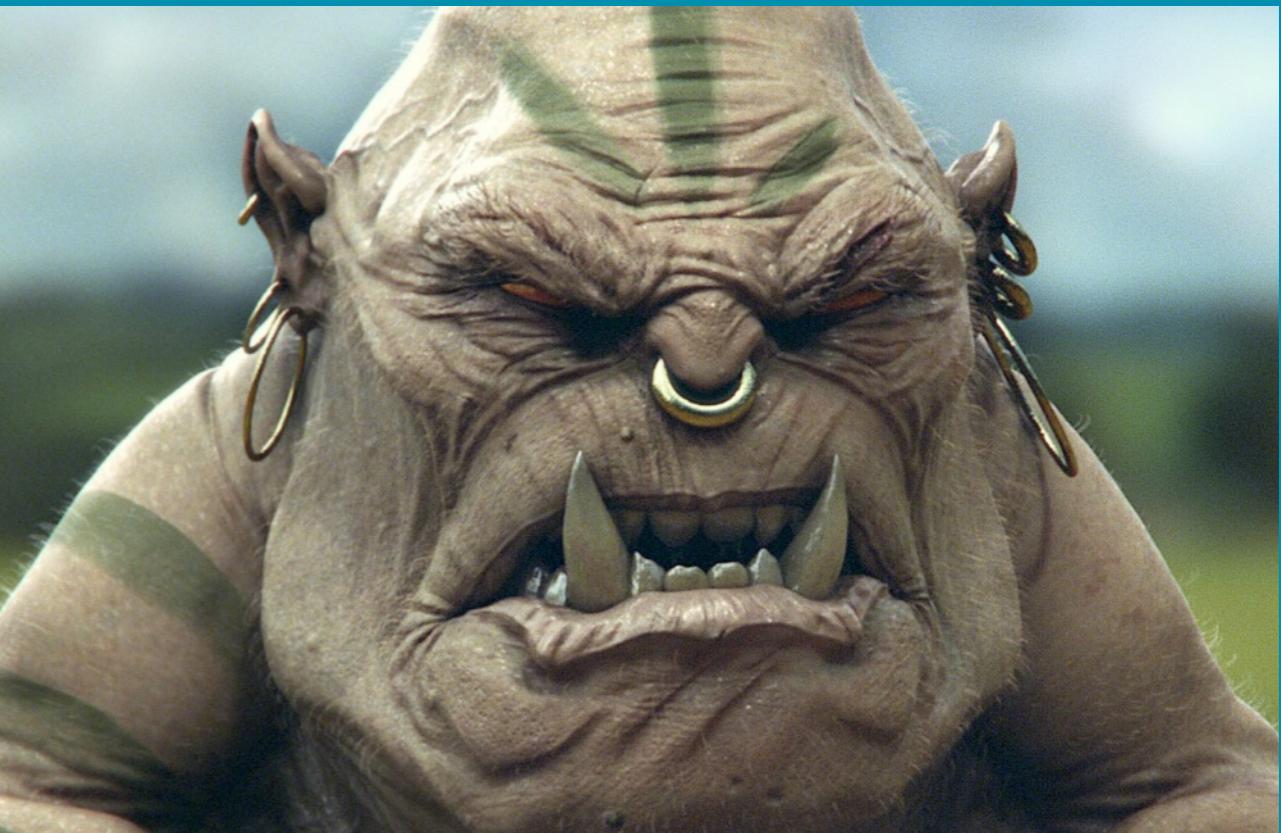
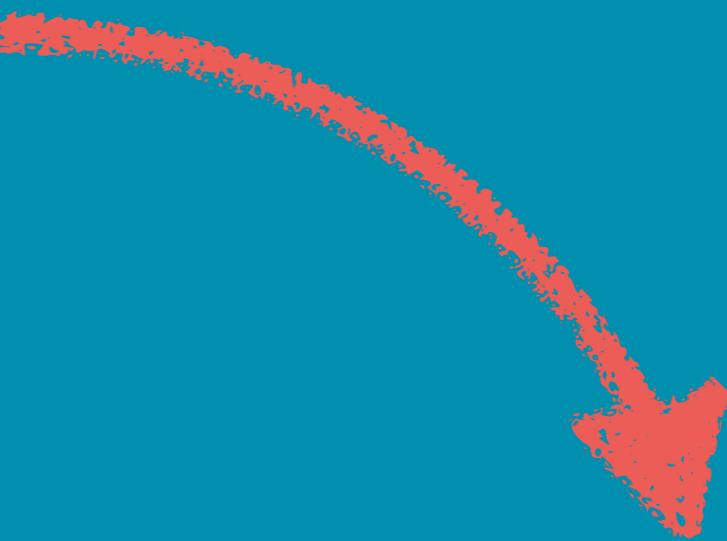


Name of branch

JACOB_GRIMM/BIG_BAD_OGRE

Create feature branch

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre  
Switched to a new branch 'jacob_grimmm/big_bad_ogre'
```



20
21 The grandmother lived out in the wood, half a league from the village, and
22 just as Little Red Riding Hood entered the wood, a wolf met her. Red Riding
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.
24
25 'Good day, Little Red Riding Hood,' said he.
26
27 'Thank you kindly, wolf.'
28
29 'Whither away so early, Little Red Riding Hood?'
30

open

little_red_riding_hood.txt

Replace ‘wolf’ with ‘ogre’

```
20  
21 The grandmother lived out in the wood, half a league from the village, and  
22 just as Little Red Riding Hood entered the wood, a wolf met her. Red Riding  
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.  
24  
25 'Good day, Little Red Riding Hood,' said he.  
26  
27 'Thank you kindly, wolf.'  
28  
29 'Whither away so early, Little Red Riding Hood?'  
30
```

little_red_riding_hood.txt

Replace ‘wolf’ with ‘ogre’

```
20  
21 The grandmother lived out in the wood, half a league from the village, and  
22 just as Little Red Riding Hood entered the wood, a wolf met her. Red Riding  
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.  
24  
25 'Good day, Little Red Riding Hood,' said he.  
26  
27 'Thank you kindly, wolf.'  
28  
29 'Whither away so early, Little Red Riding Hood?'  
30
```

little_red_riding_hood.txt

Replace ‘wolf’ with ‘ogre’

20
21 The grandmother lived out in the wood, half a league from the village, and
22 just as Little Red Riding Hood entered the wood, a [redacted] met her. Red Riding
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.
24
25 'Good day, Little Red Riding Hood,' said he.
26
27 'Thank you kindly, [redacted].'
28
29 'Whither away so early, Little Red Riding Hood?'

little_red_riding_hood.txt

Replace ‘wolf’ with ‘ogre’

20
21 The grandmother lived out in the wood, half a league from the village, and
22 just as Little Red Riding Hood entered the wood, a **ogre** met her. Red Riding
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.
24
25 'Good day, Little Red Riding Hood,' said he.
26
27 'Thank you kindly, **ogre**.'
28
29 'Whither away so early, Little Red Riding Hood?'
30

little_red_riding_hood.txt

Replace ‘wolf’ with ‘ogre’

20
21 The grandmother lived out in the wood, half a league from the village, and
22 just as Little Red Riding Hood entered the wood, a **ogre** met her. Red Riding
23 Hood did not know what a wicked creature he was, and was not at all afraid of him.
24
25 'Good day, Little Red Riding Hood,' said he.
26
27 'Thank you kindly, **ogre**.'
28
29 'Whither away so early, Little Red Riding Hood?'
30

save and close

little_red_riding_hood.txt

Status

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre
Switched to a new branch 'jacob_grimmm/big_bad_ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git status
```

Modified

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre
Switched to a new branch 'jacob_grimmm/big_bad_ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git status
On branch jacob_grimmm/big_bad_ogre
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

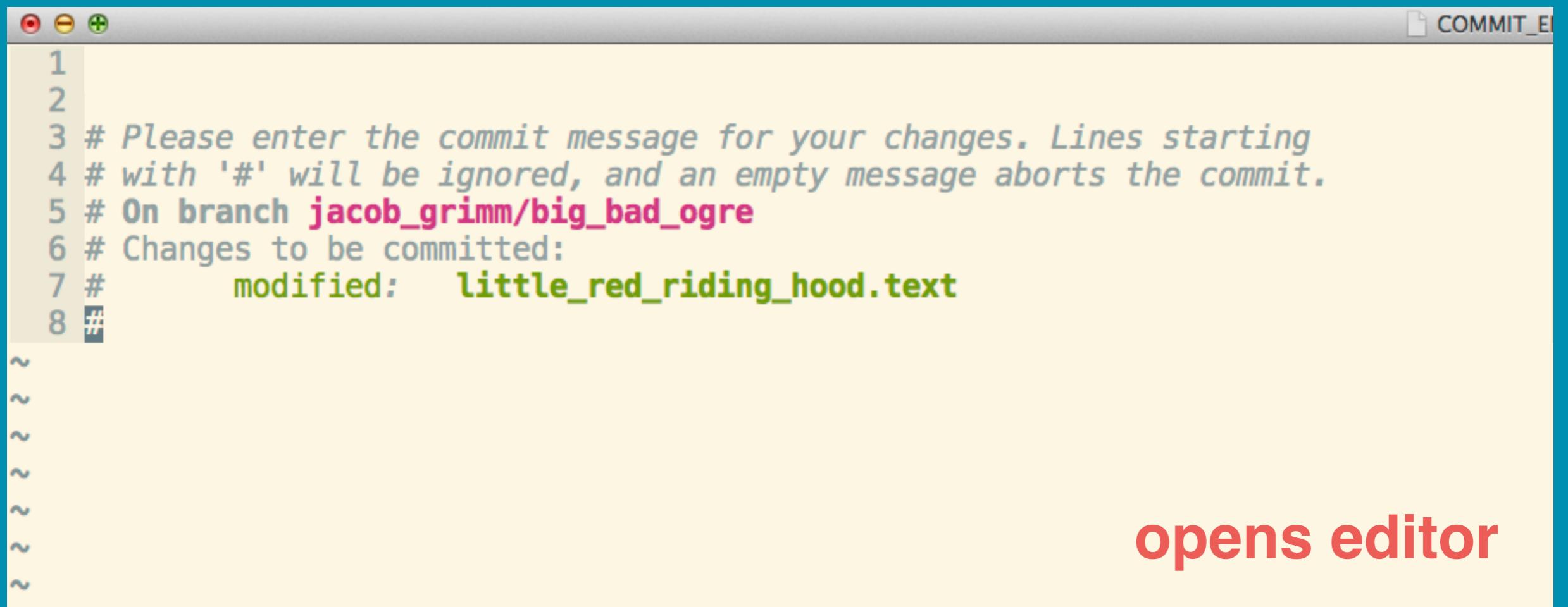
no changes added to commit (use "git add" and/or "git commit -a")
```

Commit

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre
Switched to a new branch 'jacob_grimmm/big_bad_ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git status
On branch jacob_grimmm/big_bad_ogre
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

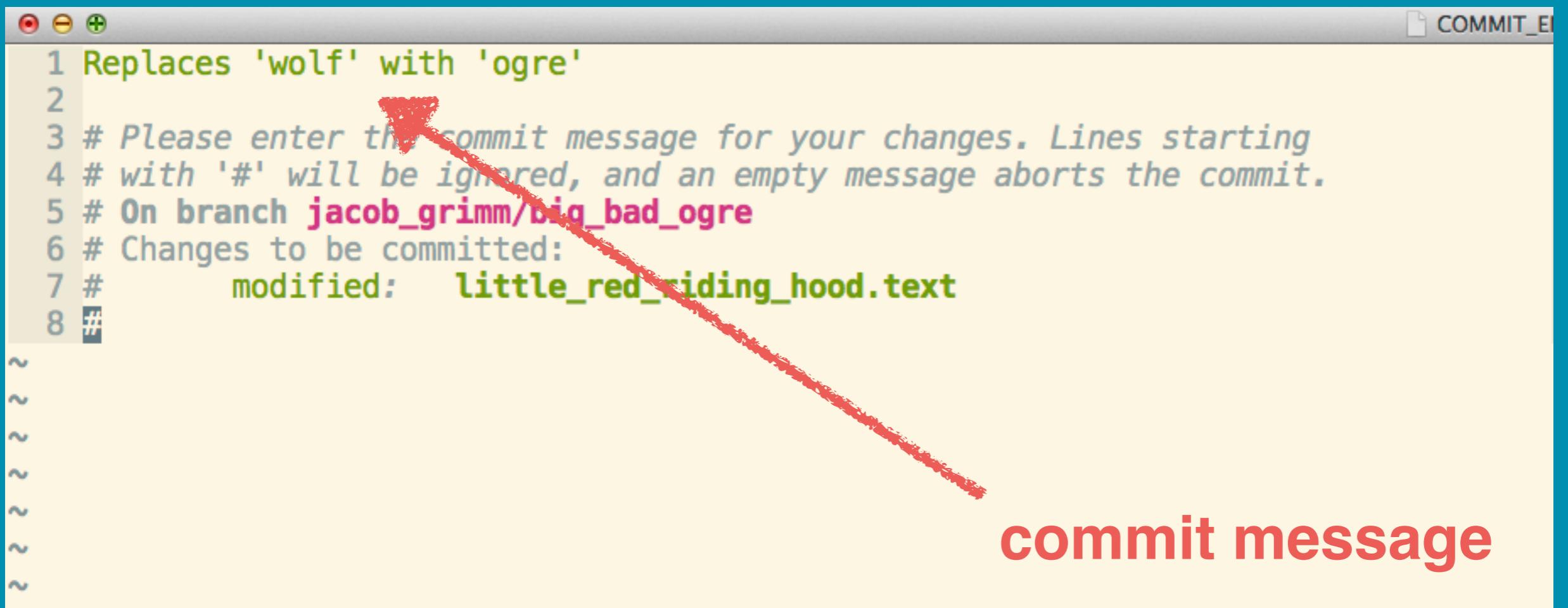
no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git commit -a
```



A screenshot of a terminal window titled "COMMIT_EDITORTIMEOUT". The window contains a commit message with line numbers 1 through 8. Lines 1 and 2 are blank. Line 3 starts with "# Please enter the commit message for your changes. Lines starting with '#' will be ignored, and an empty message aborts the commit.". Line 4 continues this instruction. Line 5 contains "# On branch jacob_grimmm/big_bad_ogre". Line 6 contains "# Changes to be committed:". Line 7 contains "# modified: little_red_riding_hood.text". Line 8 contains "#". Below the commit message, there are seven tilde (~) characters.

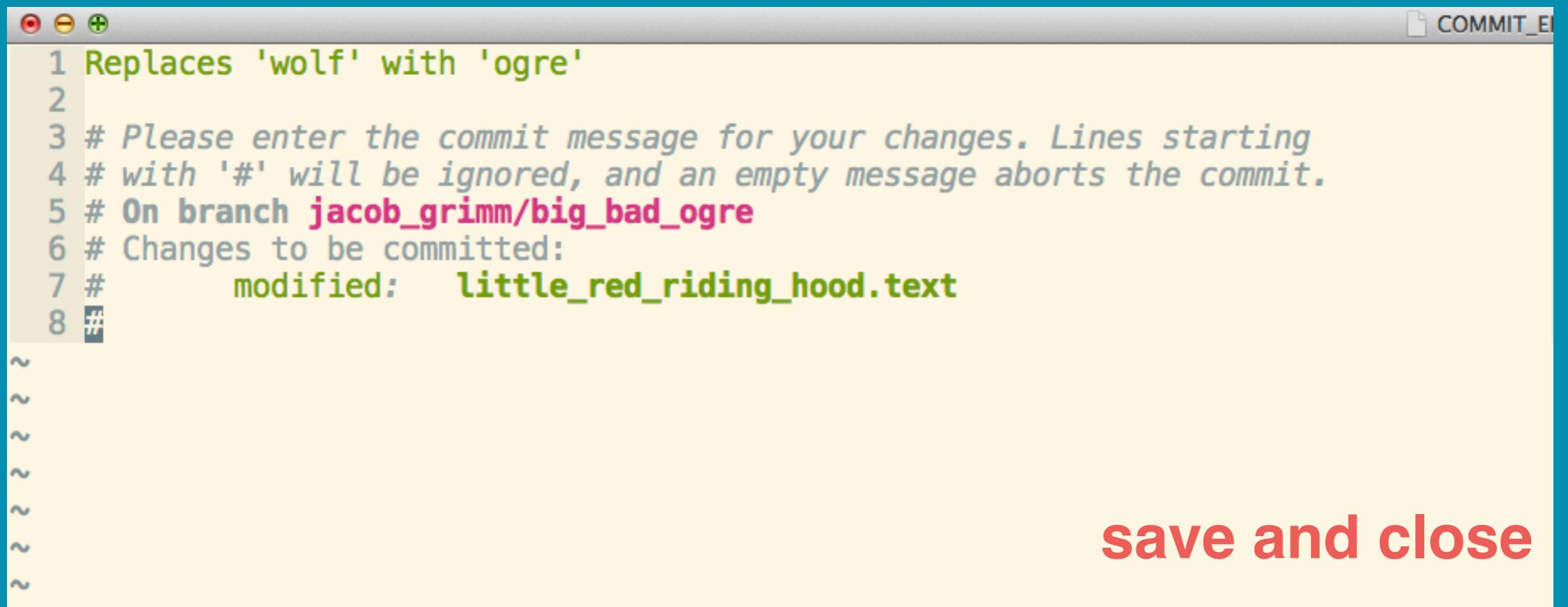
```
1  
2  
3 # Please enter the commit message for your changes. Lines starting  
4 # with '#' will be ignored, and an empty message aborts the commit.  
5 # On branch jacob_grimmm/big_bad_ogre  
6 # Changes to be committed:  
7 #       modified: little_red_riding_hood.text  
8 #  
~  
~  
~  
~  
~  
~  
~
```

opens editor



```
1 Replaces 'wolf' with 'ogre'  
2  
3 # Please enter the commit message for your changes. Lines starting  
4 # with '#' will be ignored, and an empty message aborts the commit.  
5 # On branch jacob_grimmm/big_bad_ogre  
6 # Changes to be committed:  
7 #       modified: little_red_riding_hood.text  
8 #  
~  
~  
~  
~  
~  
~  
~
```

commit message



```
1 Replaces 'wolf' with 'ogre'
2
3 # Please enter the commit message for your changes. Lines starting
4 # with '#' will be ignored, and an empty message aborts the commit.
5 # On branch jacob_grimmm/big_bad_ogre
6 # Changes to be committed:
7 #       modified:  little_red_riding_hood.text
8 #
```

~
~
~
~
~
~
~

save and close

Commit

```
~/fairy_tales (master)$ git checkout -b jacob_grimmm/big_bad_ogre
Switched to a new branch 'jacob_grimmm/big_bad_ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git status
On branch jacob_grimmm/big_bad_ogre
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   little_red_riding_hood.text

no changes added to commit (use "git add" and/or "git commit -a")
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git commit -a
[jacob_grimmm/big_bad_ogre e0a5099] Replaces 'wolf' with 'ogre'
 1 file changed, 18 insertions(+), 18 deletions(-)
```

While Jacob was busy writing

JACOB_GRIMM / BIG_BAD_OGRE

170 lines (124 sloc) | 7.86 kb

Rav

```
1 Title: Little Red Riding Hood
2 Author: Jacob Grimm
3
4 A long time ago, in a galaxy far, far away...
5
6 It is a period of civil war, Rebel spaceships, striking from a hidden base,
7 have won their first victory against the evil Galactic Empire. Also,
8 once upon a time there was a dear little girl who was loved by everyone who
9 looked at her, but most of all her grandmother, and there was nothing that
10 she would not have given to the child. Once she gave her a little riding hood
11 of red velvet, which suited her so well that she would never wear anything
12 else; so she was always called 'Little Red Riding Hood.'
13
```

Wilhelm added to origin/master (GitHub)

Jacob



it!

Jacob needs to update his
master with origin/master

Switch to master

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git checkout master
```

Switch to master

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git checkout master  
Switched to branch 'master'
```

Move code from Remote to Local

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git checkout master  
Switched to branch 'master'  
~/fairy_tales (master)$ git pull origin master
```



Move code from remote repo to local repo

Move code from Remote to Local

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git checkout master  
Switched to branch 'master'  
~/fairy_tales (master)$ git pull origin master
```



Name of remote

Move code from Remote to Local

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git checkout master  
Switched to branch 'master'  
~/fairy_tales (master)$ git pull origin master
```

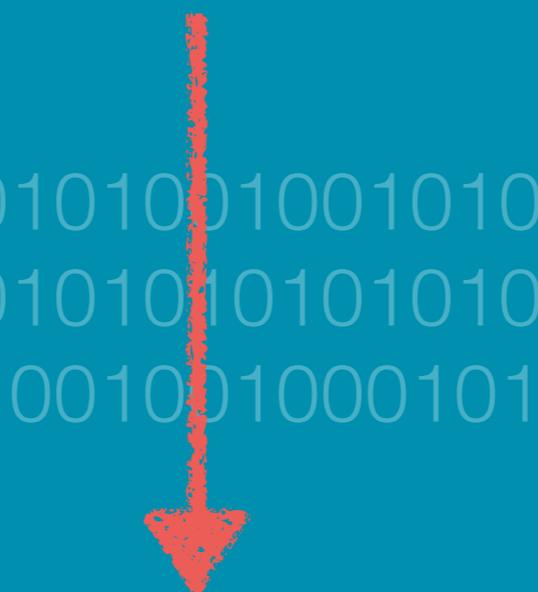


Name of branch





011101001010010010100100101
000100101010101010101011010
111010010010010001010101010



Move code from Remote to Local

```
~/fairy_tales (jacob_grim/bad_ogre)$ git checkout master
Switched to branch 'master'
~/fairy_tales (master)$ git pull origin master
remote: Counting objects: 3, done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0)
Unpacking objects: 100% (3/3), done.
From github.com:tdouce/fairy_tales
 * branch           master      -> FETCH_HEAD
   da49b4d..dddf5a2  master      -> origin/master
Updating da49b4d..dddf5a2
Fast-forward
  little_red_riding_hood.text | 6 +-----
  1 file changed, 5 insertions(+), 1 deletion(-)
```



It worked!

Understanding git history



Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
```

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
* 447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
|   Replaces 'wolf' with 'ogre' - tdouce
* dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
|   Adds Galactic Empire backstory - Travis Douce
* da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
|   Merge branch 'jacob_grimmm/body' - tdouce
| * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
| /   Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
|   Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
|   Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
|   Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
|   Adds little_red_riding_hood.txt - tdouce
```

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master  
First, rewinding head to replay your work on top of it...  
Applying: Replaces 'wolf' with 'ogre'
```

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git log  
447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)  
|     Replaces 'wolf' with 'ogre' - tdouce  
* dddat5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)  
|     Adds Galactic Empire backstory - Travis Douce  
* da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)  
|     Merge branch 'jacob_grimmm/body' - tdouce  
| * f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)  
| /     Writes story body - tdouce  
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)  
|     Adds to introductory sentence - tdouce  
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)  
|     Adds introductory sentence - tdouce  
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)  
|     Adds title and author - tdouce  
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)  
|     Adds little_red_riding_hood.txt - tdouce
```



jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
 447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
  dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
* da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
    Merge branch 'jacob_grimmm/body' - tdouce
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
    Merge branch 'jacob_grimmm/body' - tdouce
* f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
 447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
  dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
  da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
    Merge branch 'jacob_grimmm/body' - tdouce
  f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
* e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
 447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
  dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
  da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
    Merge branch 'jacob_grimmm/body' - tdouce
  f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
  e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
* ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
 447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
  dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
  da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
    Merge branch 'jacob_grimmm/body' - tdouce
  f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
  e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
  ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
* c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
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f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
* 7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

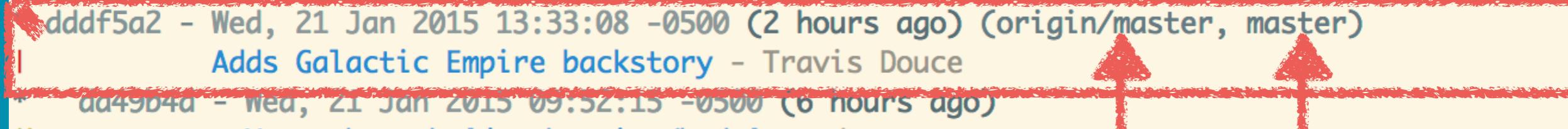
Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
    Replaces 'wolf' with 'ogre' - tdouce
dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
    Adds Galactic Empire backstory - Travis Douce
da49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
    Merge branch 'jacob_grimmm/body' - tdouce
f3aab70 - Tue, 20 Jan 2015 16:11:40 -0500 (23 hours ago) (jacob_grimmm/body)
    Writes story body - tdouce
e8300d1 - Tue, 20 Jan 2015 11:50:07 -0500 (28 hours ago)
    Adds to introductory sentence - tdouce
ed04ae2 - Fri, 16 Jan 2015 15:12:11 -0500 (5 days ago)
    Adds introductory sentence - tdouce
c58a5c5 - Fri, 16 Jan 2015 15:10:48 -0500 (5 days ago)
    Adds title and author - tdouce
7788ded - Fri, 16 Jan 2015 15:08:41 -0500 (5 days ago)
    Adds little_red_riding_hood.txt - tdouce
```

jacob_grimmm/big_bad_ogre has commits

Log as graph

```
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git rebase master
First, rewinding head to replay your work on top of it...
Applying: Replaces 'wolf' with 'ogre'
~/fairy_tales (jacob_grimmm/big_bad_ogre)$ git lg
* 447e955 - Wed, 21 Jan 2015 13:18:41 -0500 (2 hours ago) (HEAD, jacob_grimmm/big_bad_ogre)
|   Replaces 'wolf' with 'ogre' - tdouce
| dddf5a2 - Wed, 21 Jan 2015 13:33:08 -0500 (2 hours ago) (origin/master, master)
|   Adds Galactic Empire backstory - Travis Douce
| * dd49b4d - Wed, 21 Jan 2015 09:52:15 -0500 (6 hours ago)
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jacob_grimmm/body has commits

Jacob finished

JACOB_GRIMM / THE BIG_BAD_OGRE

Jacob finished

JACOB_GRIMM / THE BIG_BAD_OGRE

and hates it.

Jacob finished

JACOB_GRIMM / THE BIG_BAD_OGRE

and hates it.

He never merged
into master.

Little Red Riding Hood

and

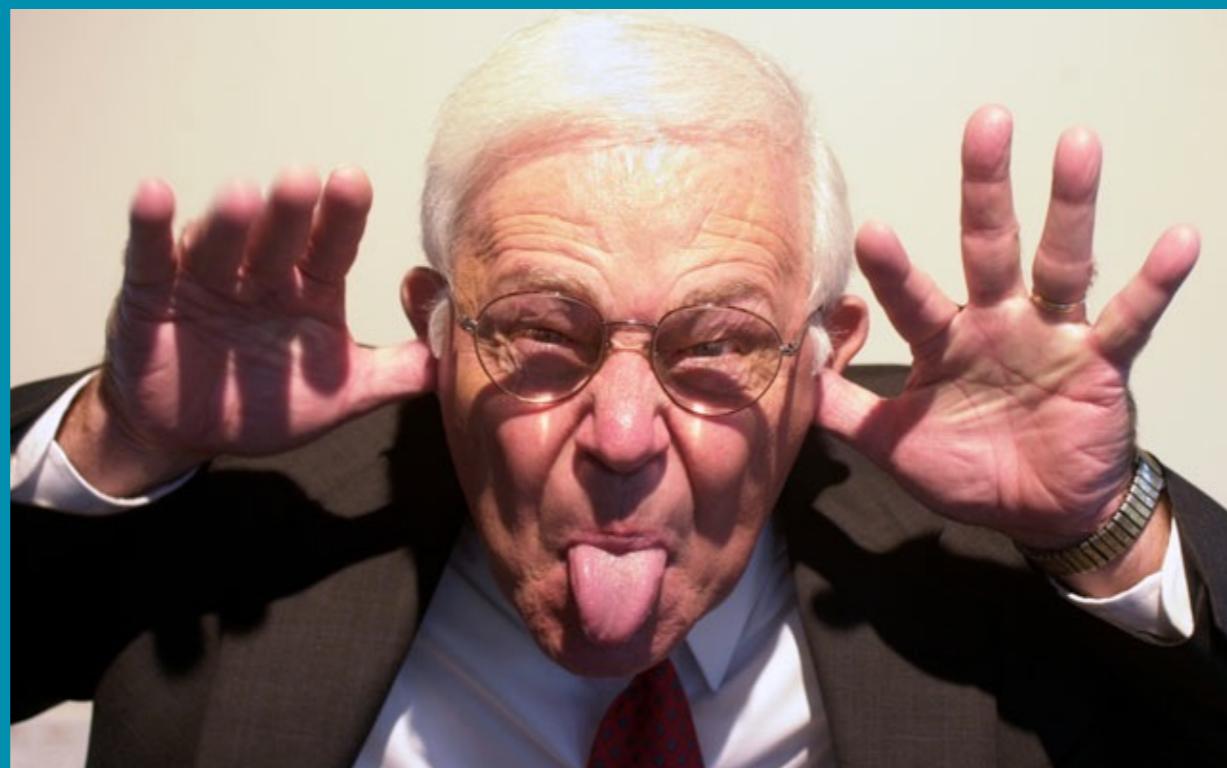
THE BIG_BAD_OGRE

lost with time.

170 lines (124 sloc) | 7.878 kb

R

```
1 Title: Little Red Riding Hood
2 Author: Wilhelm Grimm and Jacob Grimm
3
4 A long time ago, in a galaxy far, far away...
5
6 It is a period of civil war, Rebel spaceships, striking from a hidden base,
7 have won their first victory against the evil Galactic Empire. Also,
8 once upon a time there was a dear little girl who was loved by everyone who
9 looked at her, but most of all her grandmother, and there was nothing that
10 she would not have given to the child. Once she gave her a little riding hood
11 of red velvet, which suited her so well that she would never wear anything
12 else; so she was always called 'Little Red Riding Hood.'
13
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What is Git?

What is Git?

Create repo

What is Git?
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Basic workflow

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Understanding history

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Merge

Remotes

Resources

Install Git

<http://git-scm.com/book/en/v2/Getting-Started-Installing-Git>

<http://kj-prince.com/code/install-git-mac-osx-homebrew/>

Git Pro

<http://git-scm.com/book/en/v2>

Bash Completion

<https://github.com/bobthecow/git-flow-completion/wiki/Install-Bash-git-completion>

<https://conra.dk/2013/01/18/git-on-osx.html>

Display git branch name in prompt

<http://stackoverflow.com/questions/17333531/how-can-i-display-the-current-branch-and-folder-path-in-terminal>

Git Workflow Videos with Andy Lindeman

<http://vimeo.com/33166064>

<http://vimeo.com/33165748>

Well formed commit messages

<http://tbaggery.com/2008/04/19/a-note-about-git-commit-messages.html>

<http://robots.thoughtbot.com/5-useful-tips-for-a-better-commit-message>