

The Git Parable

Johan Herland

<johanh@opera.com>



The Git Parable

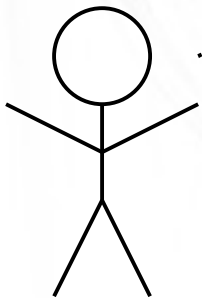
- Shamelessly stolen from Tom Preston-Werner
<http://tom.preston-werner.com/2009/05/19/the-git-parable.html>
- I'm lazy...
- Also: Best introduction to Git I've found so far

The Git Parable

- Git - simple & powerful

The Git Parable

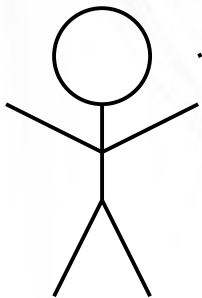
- Git - simple & powerful



```
git init  
git add ...  
git commit ...  
git branch ...  
git checkout ...  
git tag ...  
git diff ...  
git log ...  
git remote ...  
git fetch ...  
git pull ...  
git push ...  
...
```

The Git Parable

- Git - simple & powerful

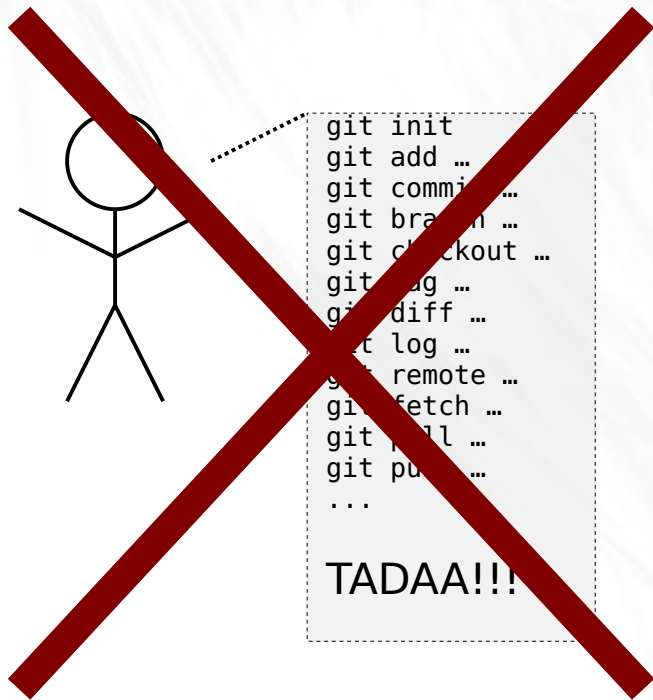


```
git init  
git add ...  
git commit ...  
git branch ...  
git checkout ...  
git tag ...  
git diff ...  
git log ...  
git remote ...  
git fetch ...  
git pull ...  
git push ...  
...
```

TADAA!!!

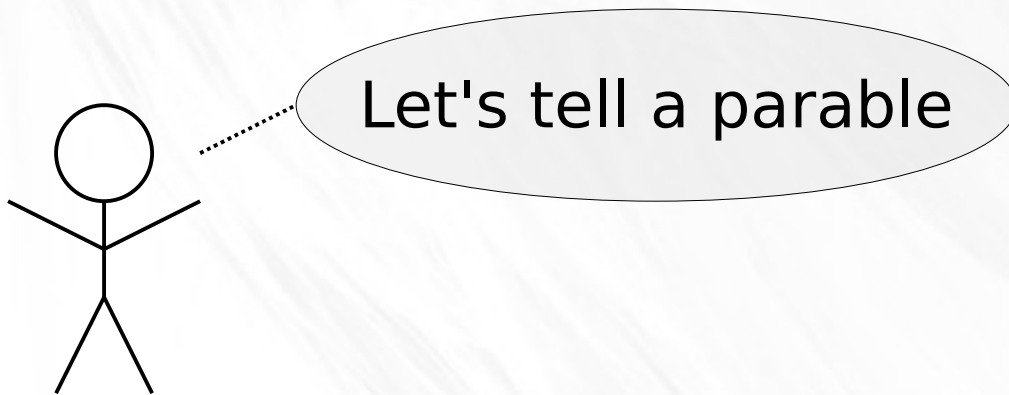
The Git Parable

- Git - simple & powerful



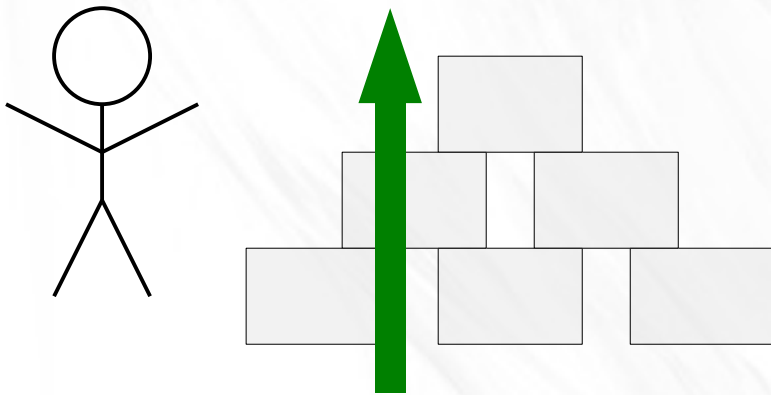
The Git Parable

- Git - simple & powerful



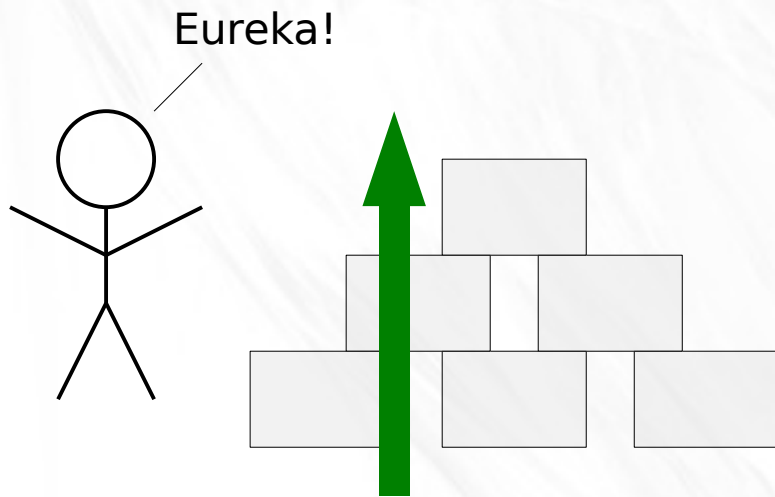
The Git Parable

- Git - simple & powerful



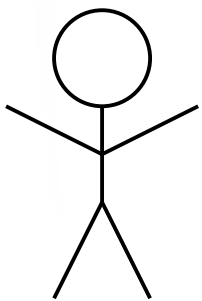
The Git Parable

- Git - simple & powerful



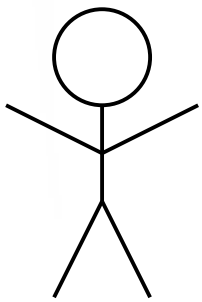
The Parable

- A simple computer
 - A text editor
 - A few filesystem commands



The Parable

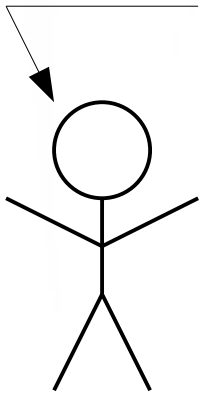
- Write a large software program



The Parable

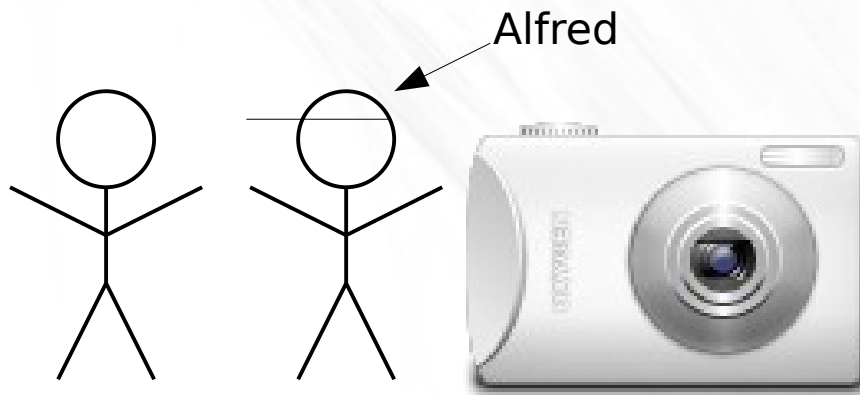
- Write a large software program
- Invent some method to keep track of versions
 - retrieve code that you changed/deleted

Responsible!



Snapshots

- Alfred, the photographer



Snapshots

- Alfred, the photographer



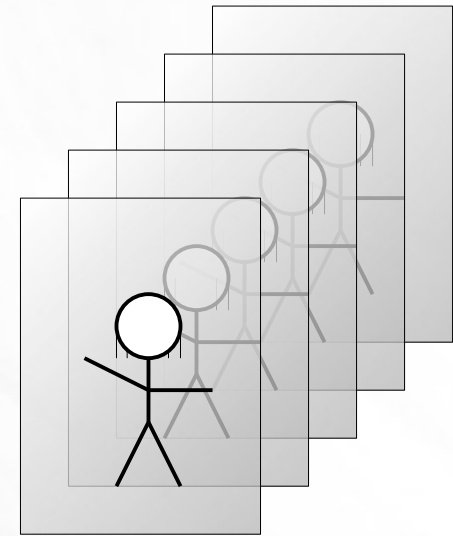
Snapshots

- Alfred, the photographer
- Hazel and her daughter



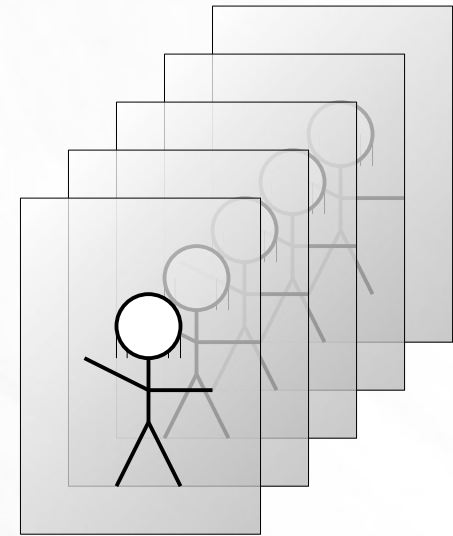
Snapshots

- Alfred, the photographer
- Hazel and her daughter
 - Remember what the daughter was like at each different stage



Snapshots

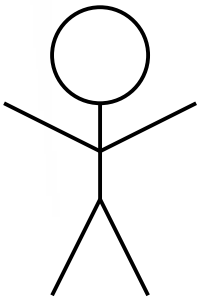
- Alfred, the photographer
- Hazel and her daughter
 - Remember what the daughter was like at each different stage



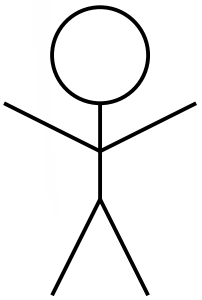
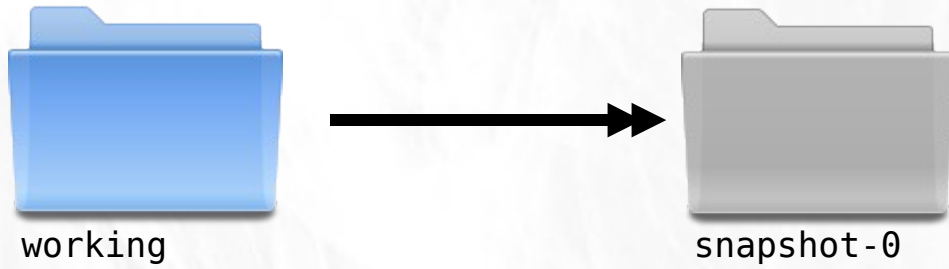
Snapshots



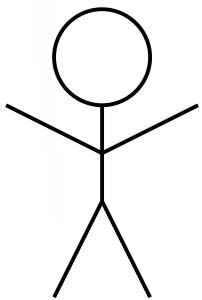
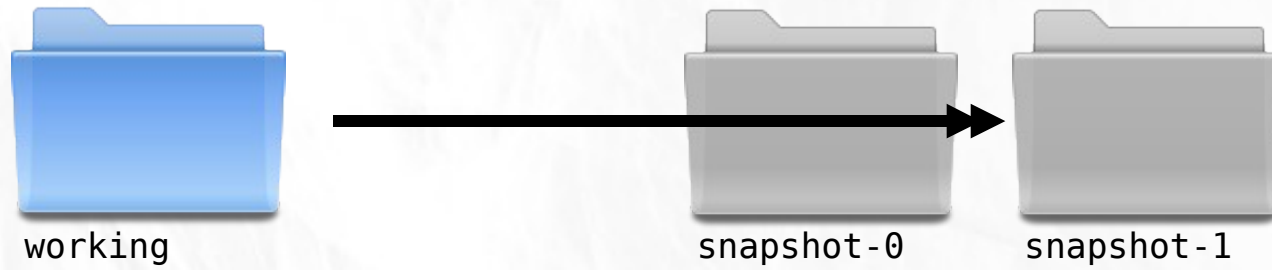
working



Snapshots



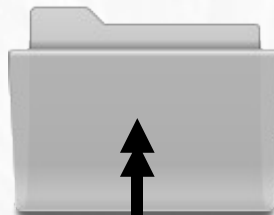
Snapshots



Snapshots



working



snapshot-0



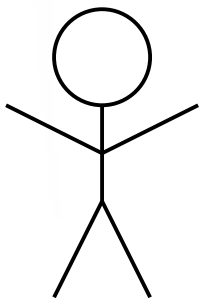
snapshot-1



message



message



2009-05-20 12:34:56

Initial version

2009-05-21 23:45:01

Introduced a new foo,
and reset the bar to
xyzyz.

Branches



working



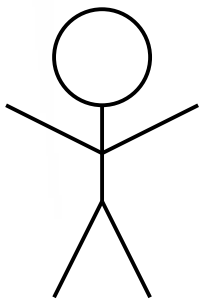
snapshot-0



snapshot-1



snapshot-99



Branches



working



snapshot-0



snapshot-1

...

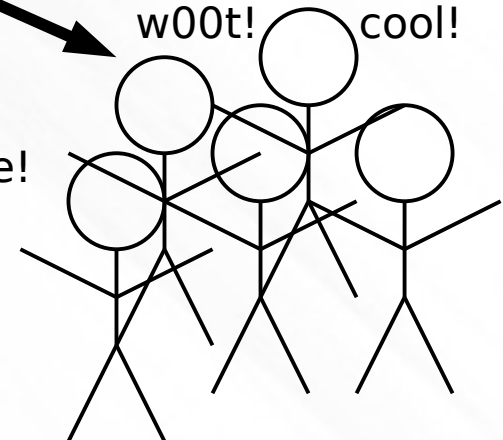
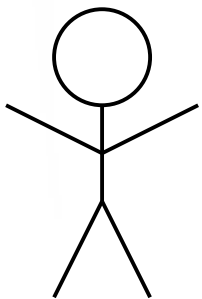


snapshot-99



w00t! cool!

nice!



Branches



working



snapshot-0



snapshot-1

...

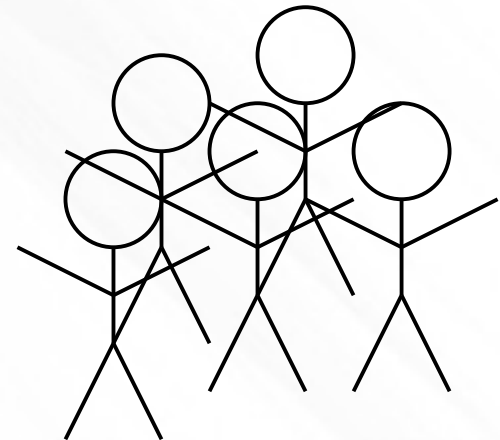
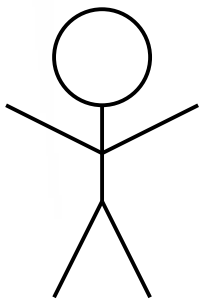


snapshot-99

...



snapshot-109



Branches



working



snapshot-0



snapshot-1

...



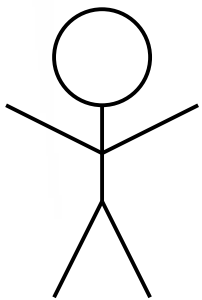
snapshot-99

...

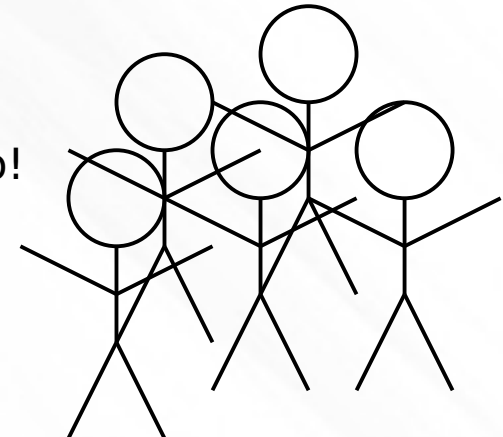


snapshot-109

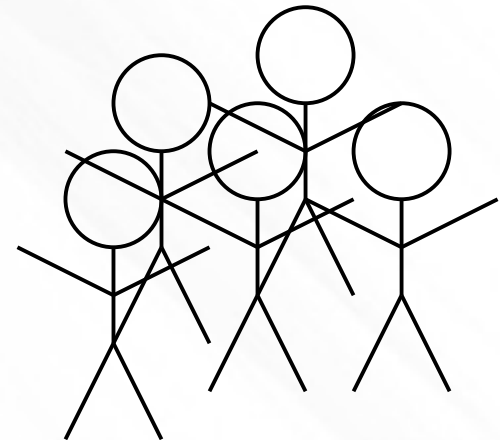
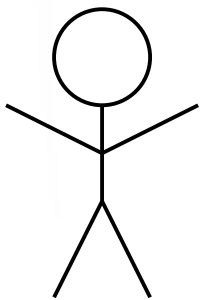
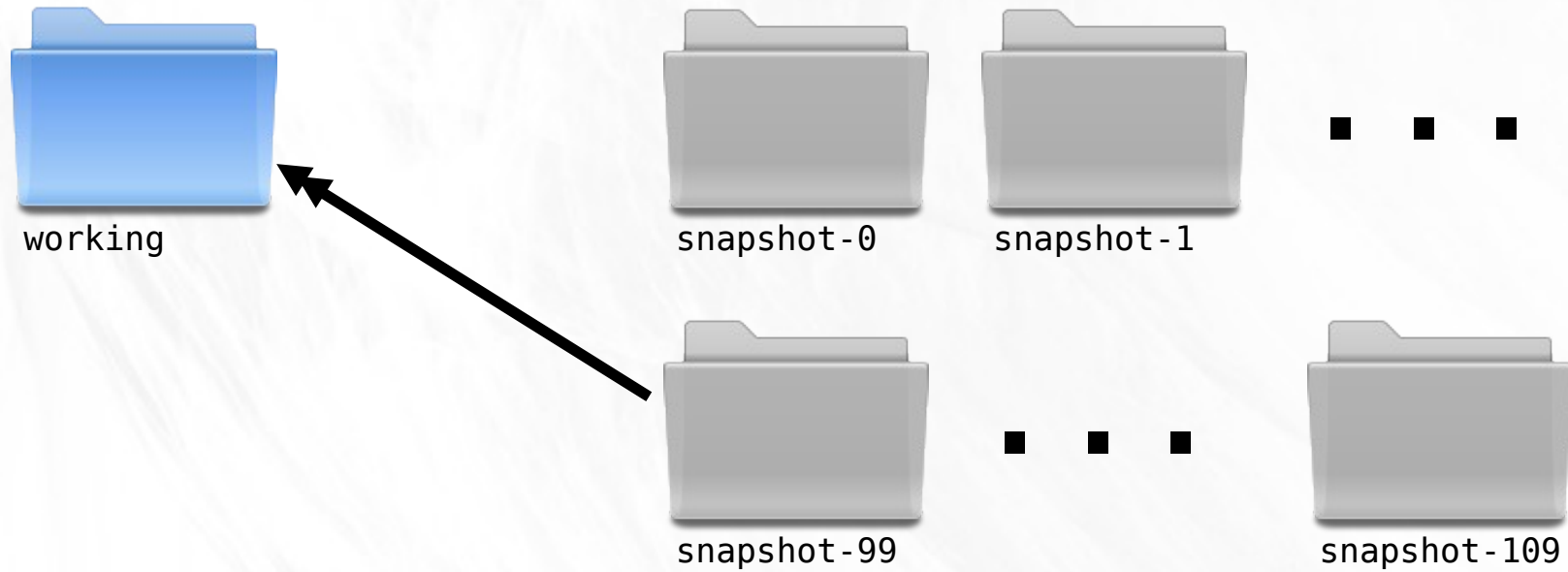
Does not work!



Boo!



Branches



Branches



working



snapshot-0



snapshot-1

■ ■ ■

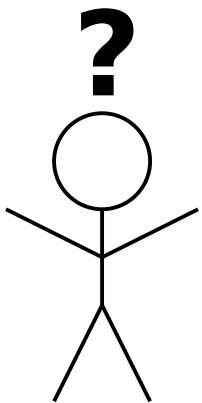


snapshot-99

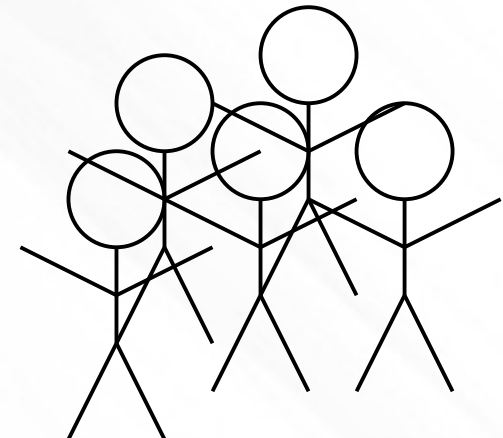
■ ■ ■



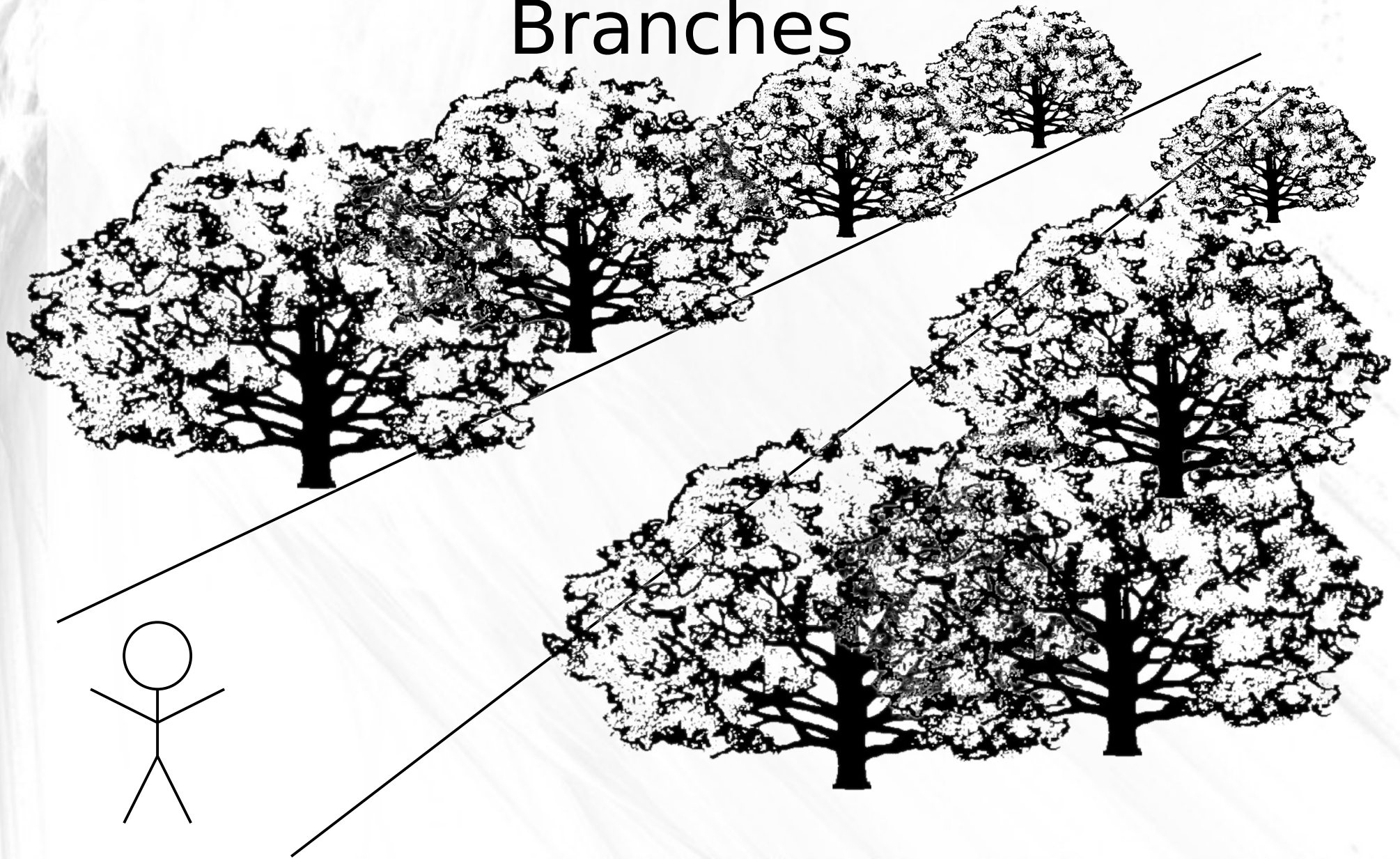
snapshot-109



snapshot-110



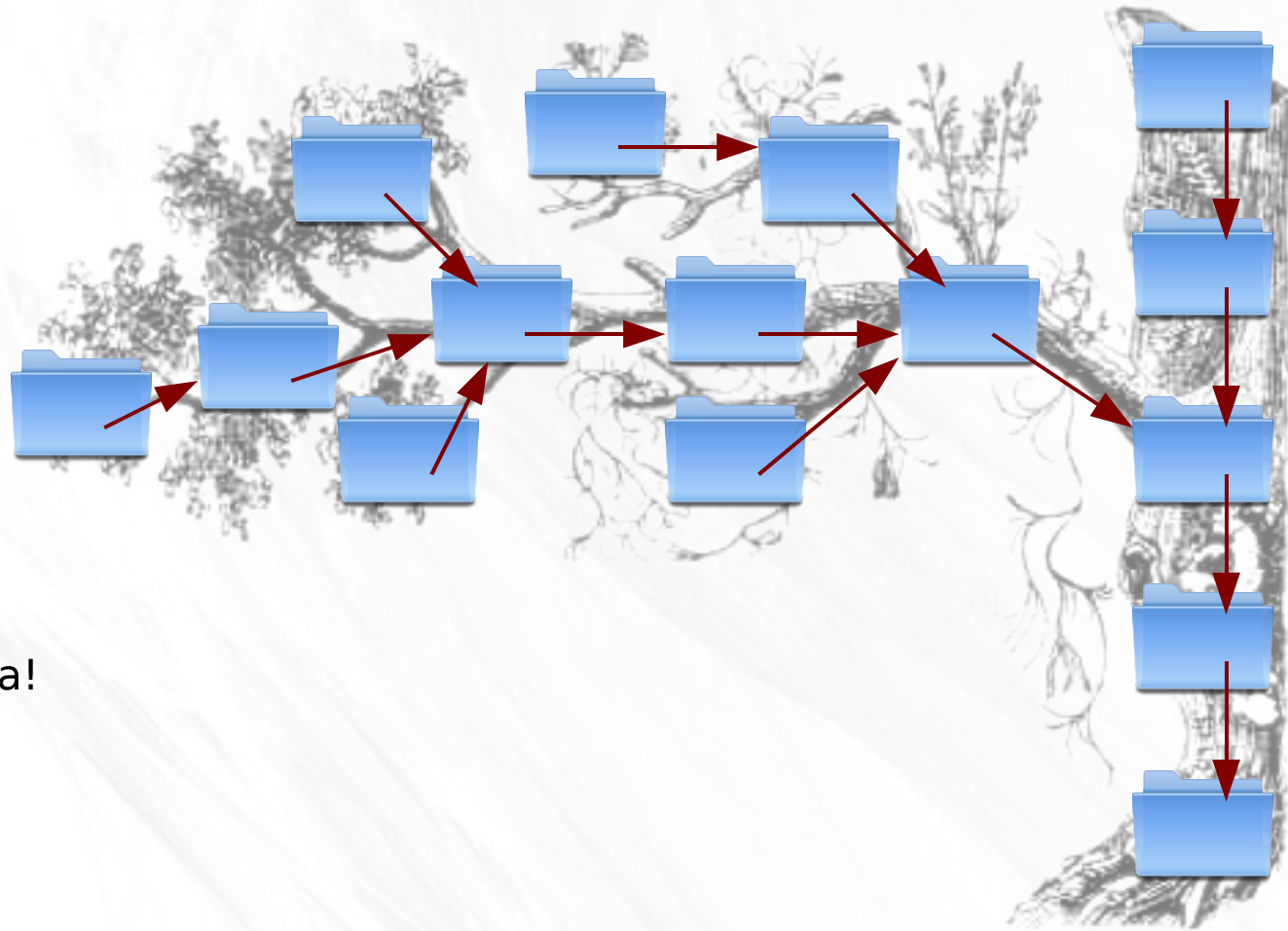
Branches



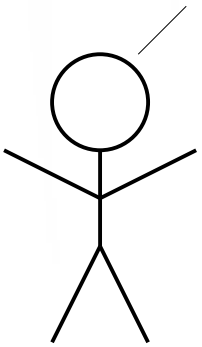
Branches



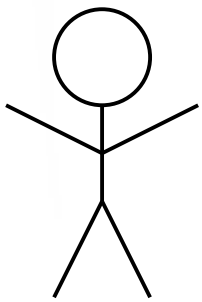
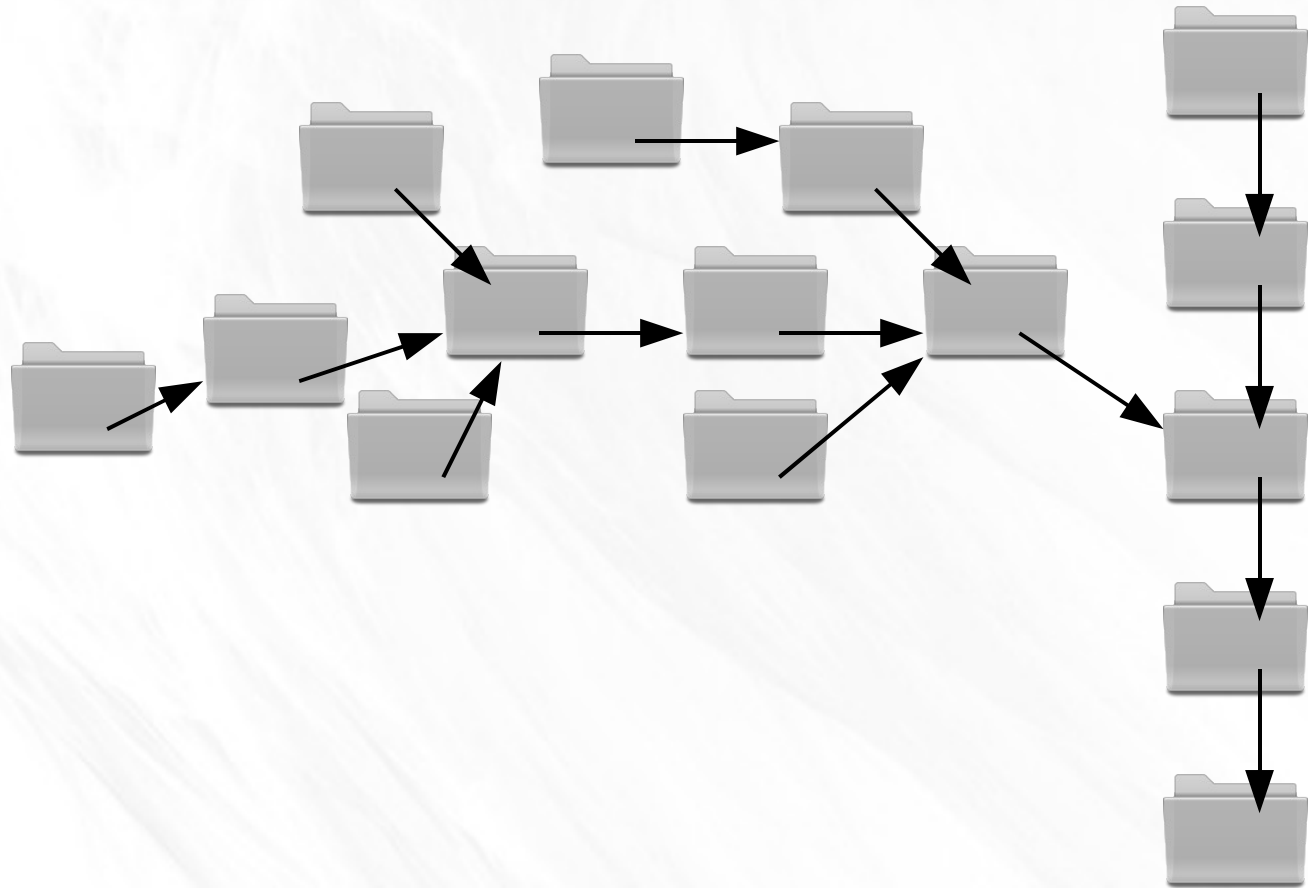
Branches



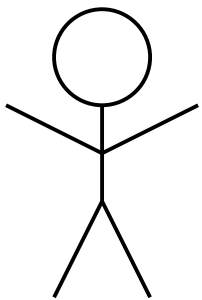
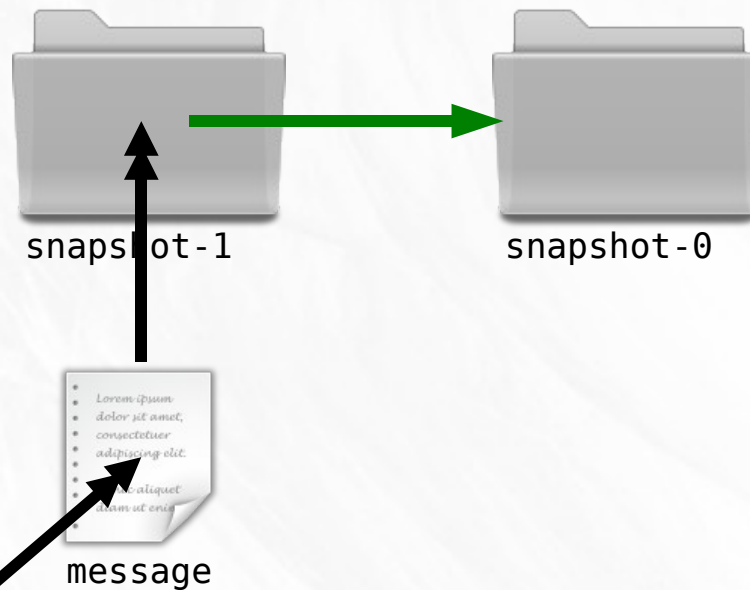
Eureka!



Branches



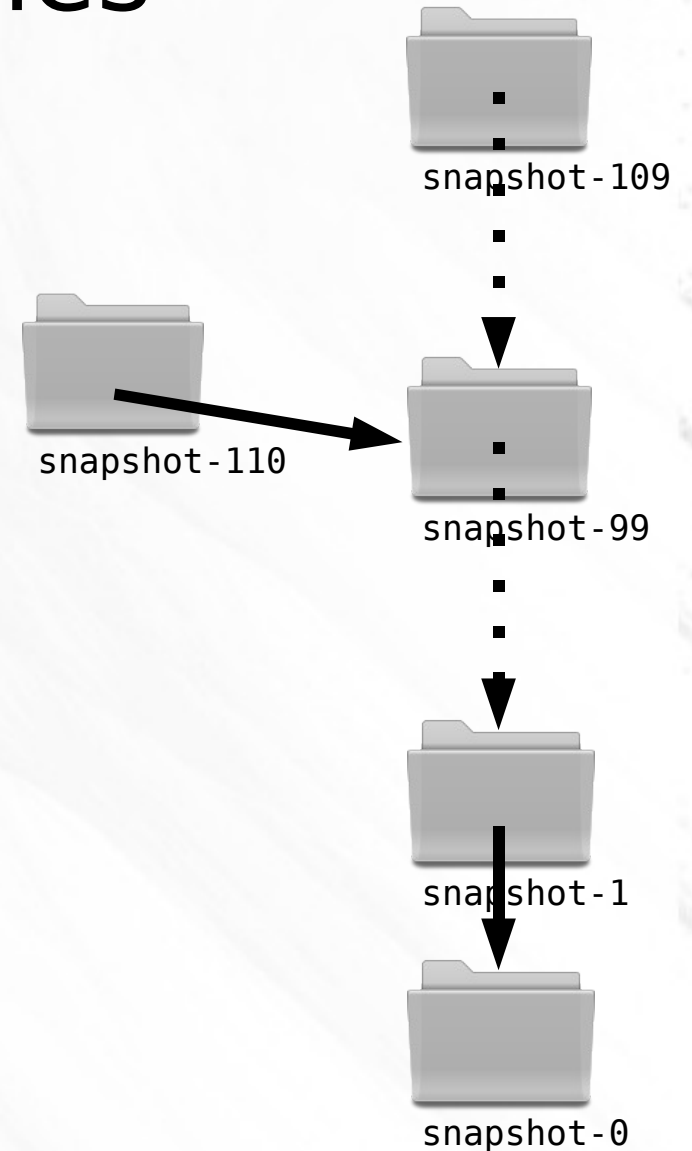
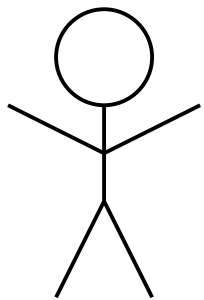
Branches



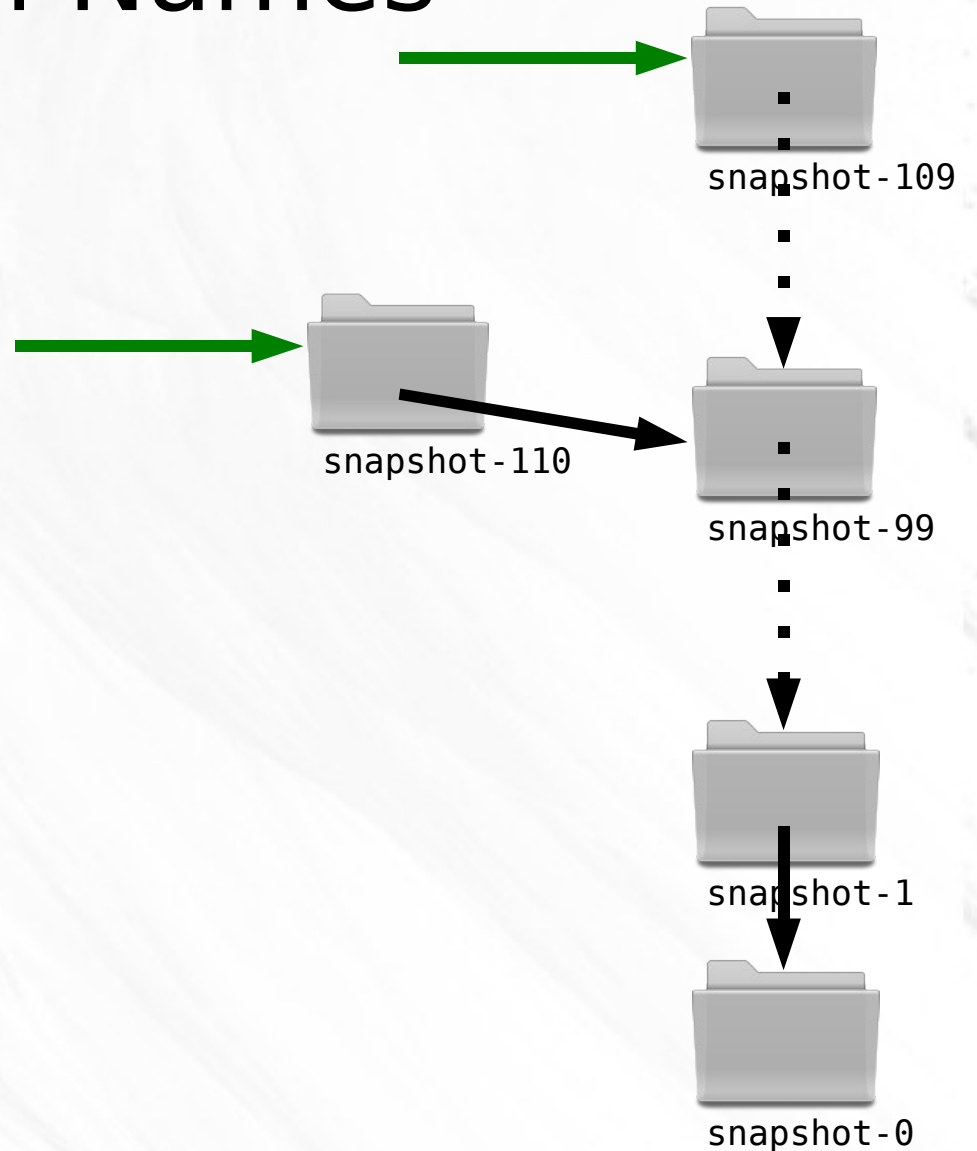
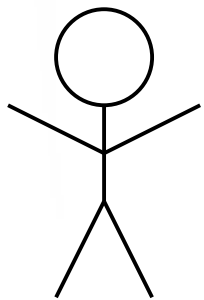
2009-05-21 23:45:01
parent: snapshot-0

Introduced a new foo,
and reset the bar to
xyzyz.

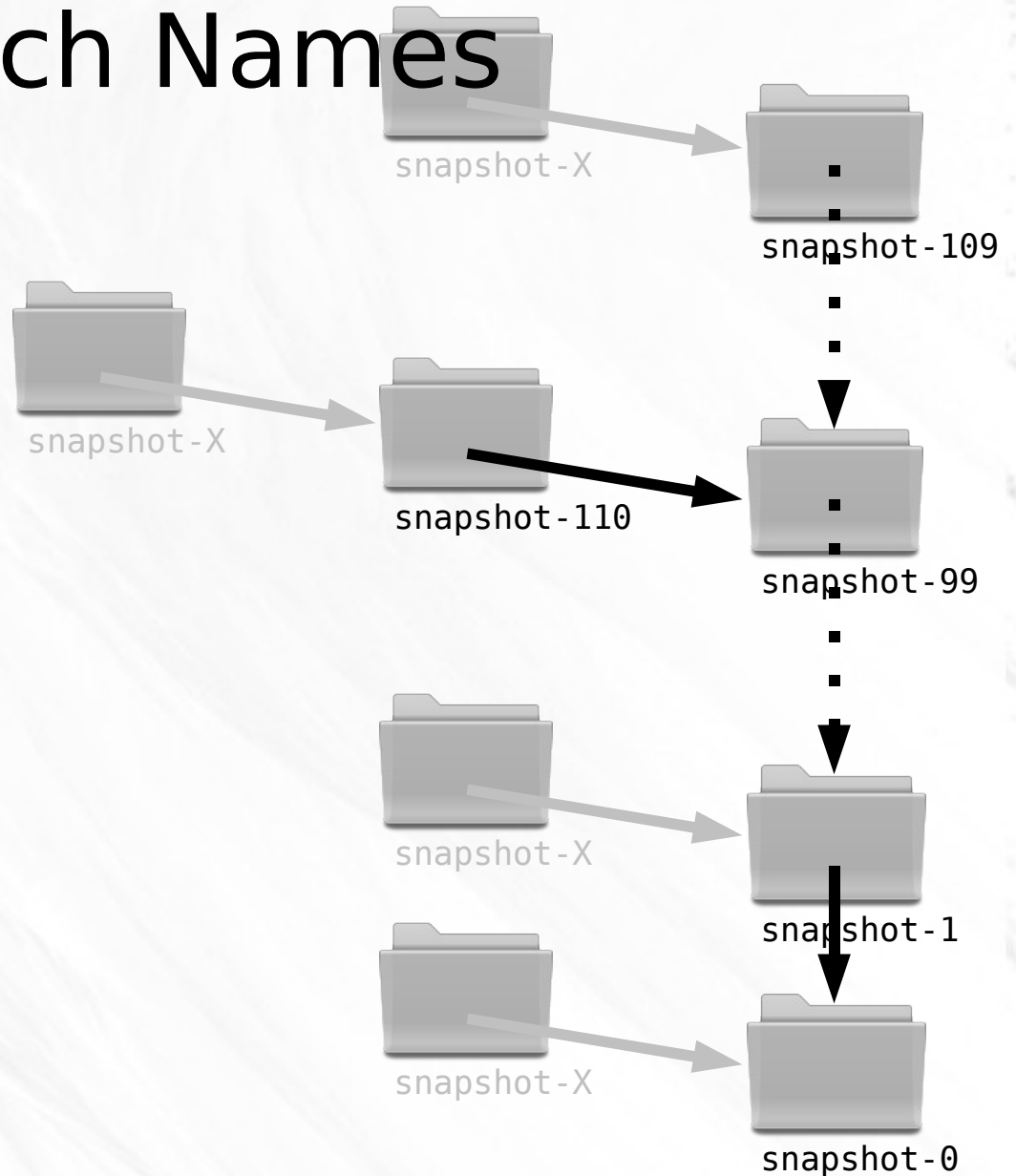
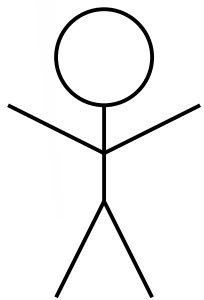
Branch Names



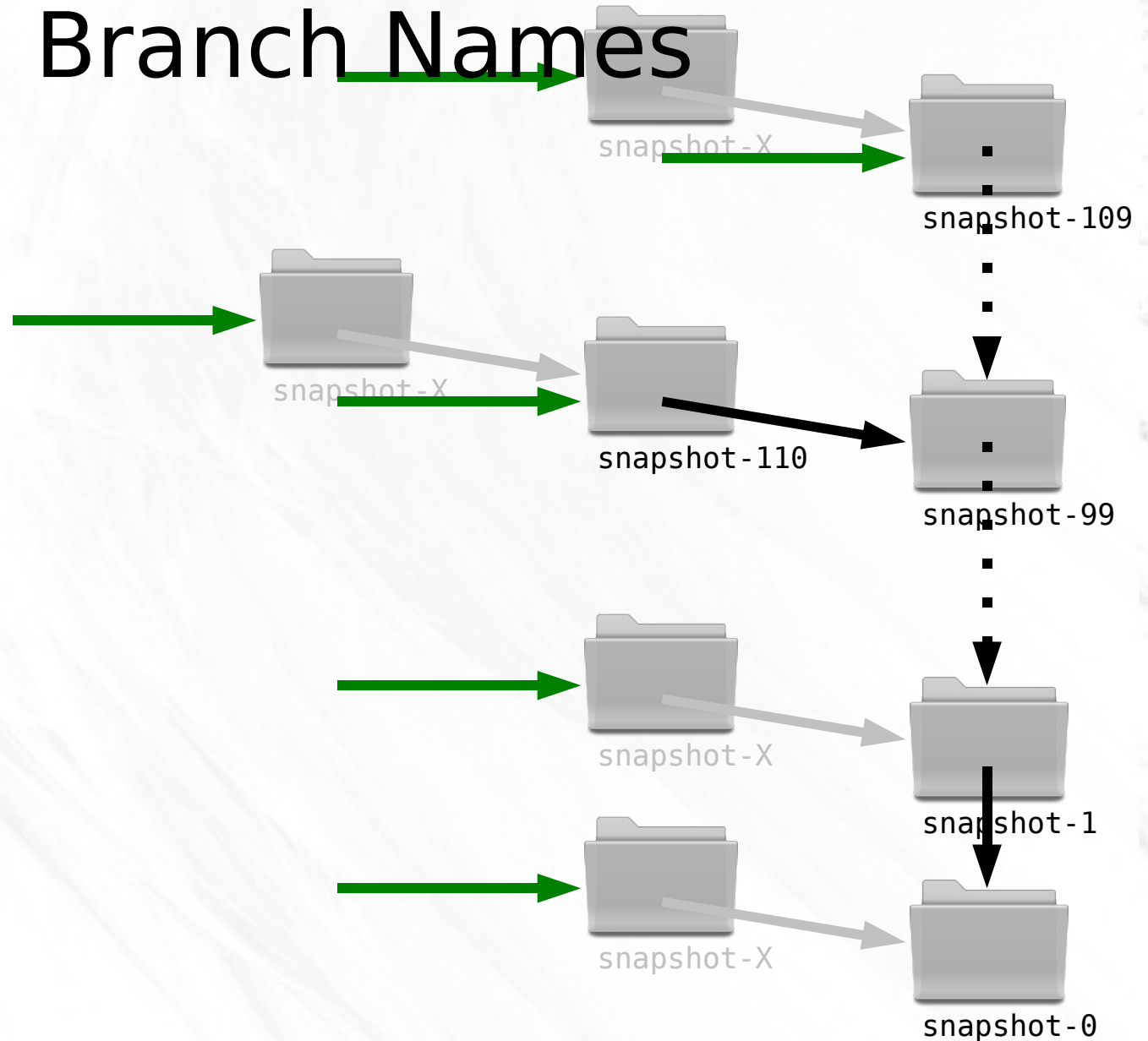
Branch Names



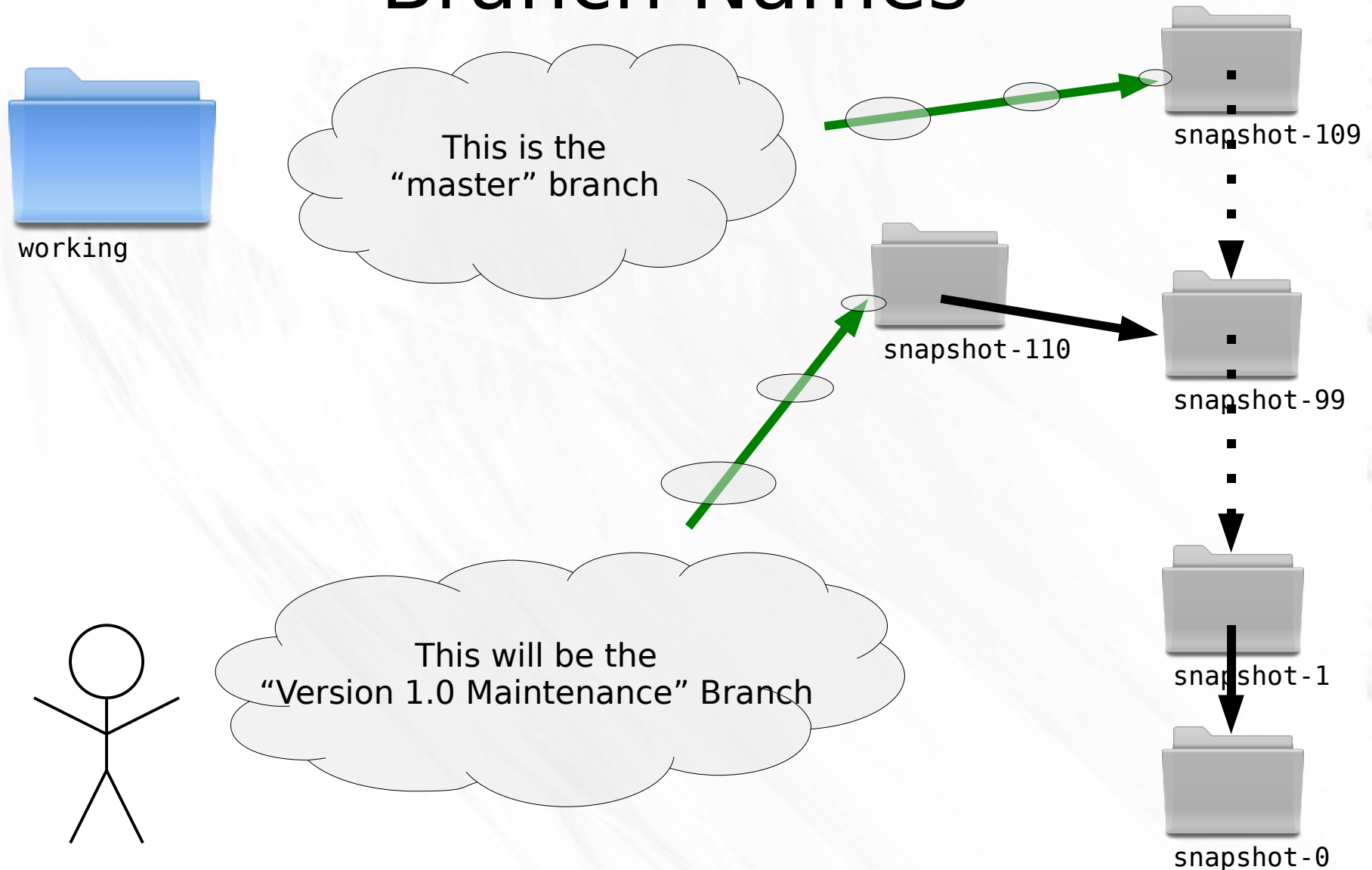
Branch Names



Branch Names



Branch Names



Branch Names

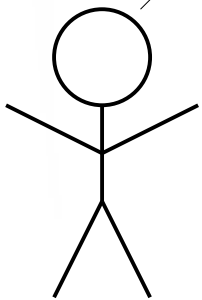


This is the
“master” branch.
It contains:
snapshot-109
snapshot-108
snapshot-107

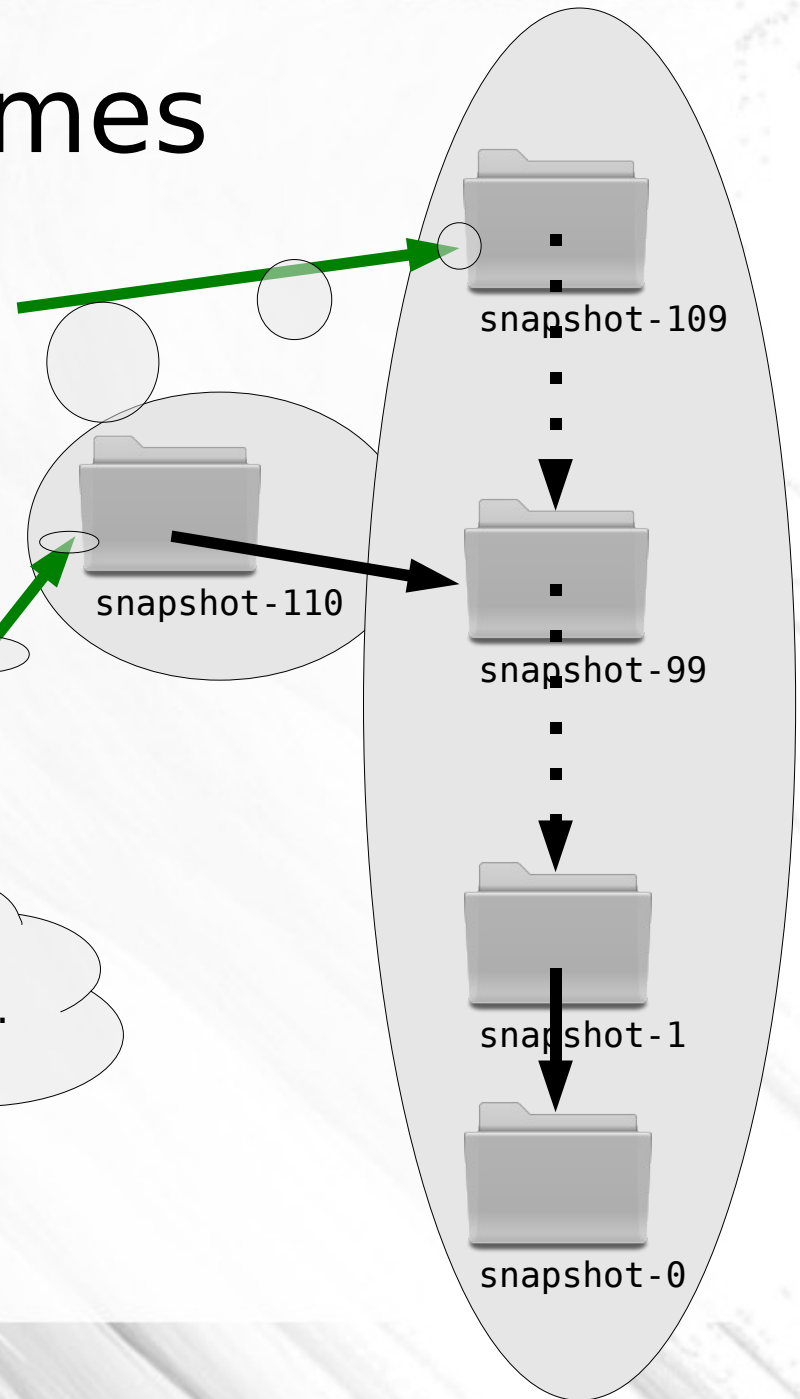
...
snapshot-99

...
snapshot-1
snapshot-0

Phew!



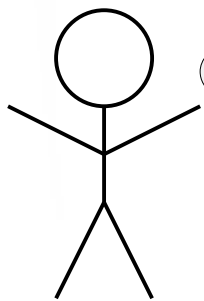
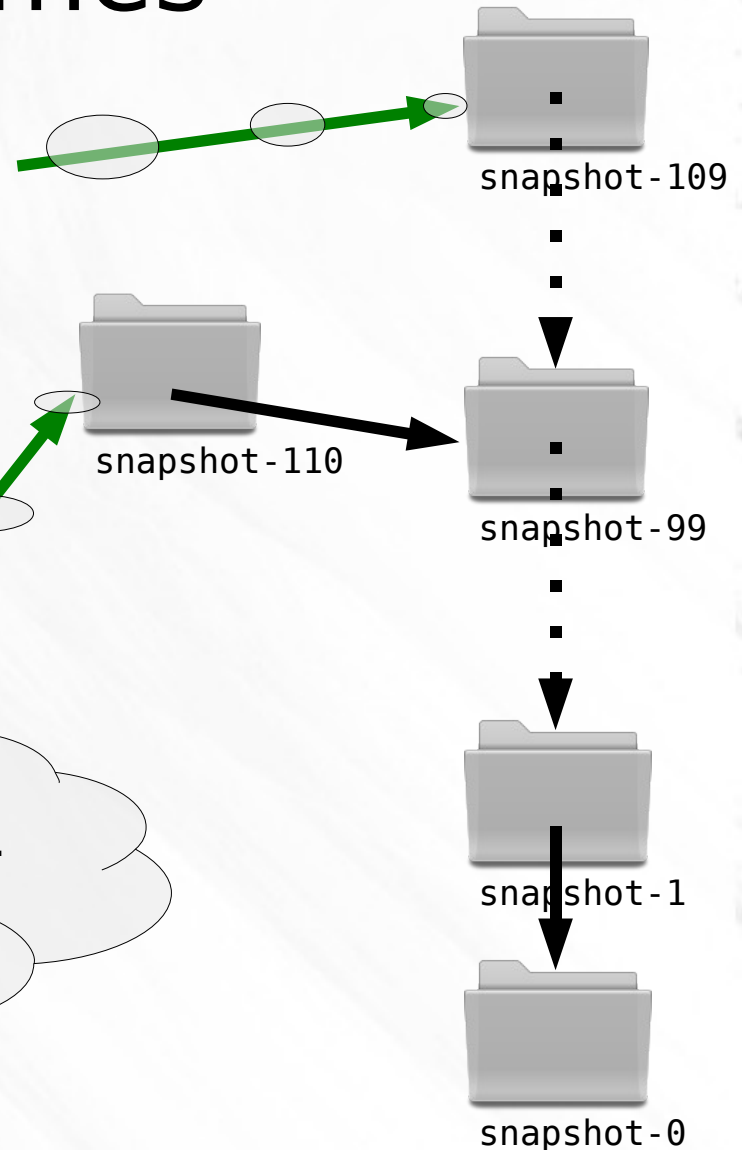
This is the
“Version 1.0 Maintenance” Branch.
It contains:
snapshot-110



Branch Names

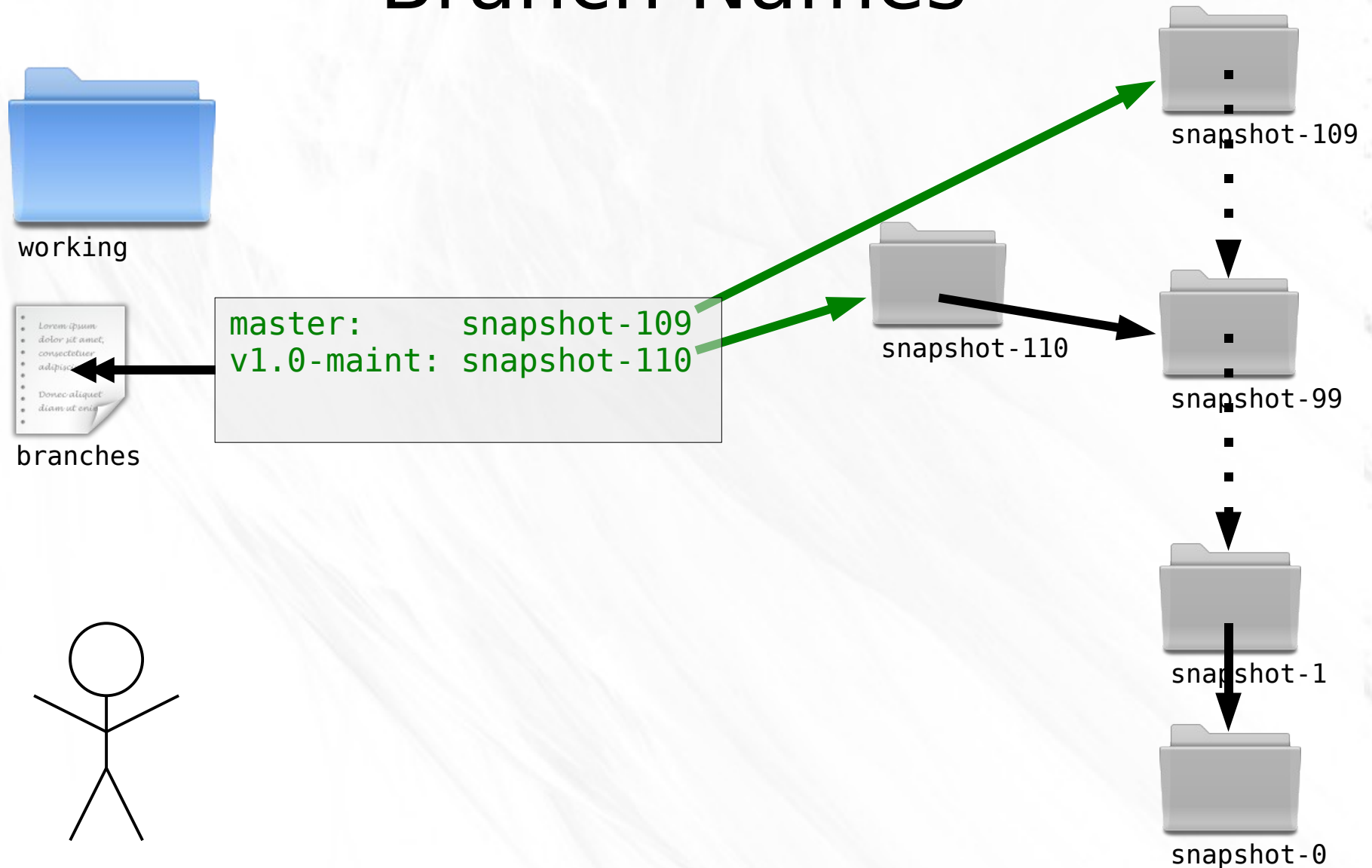


This is the
“master” branch.
It contains:
snapshot-109
(and its ancestors)

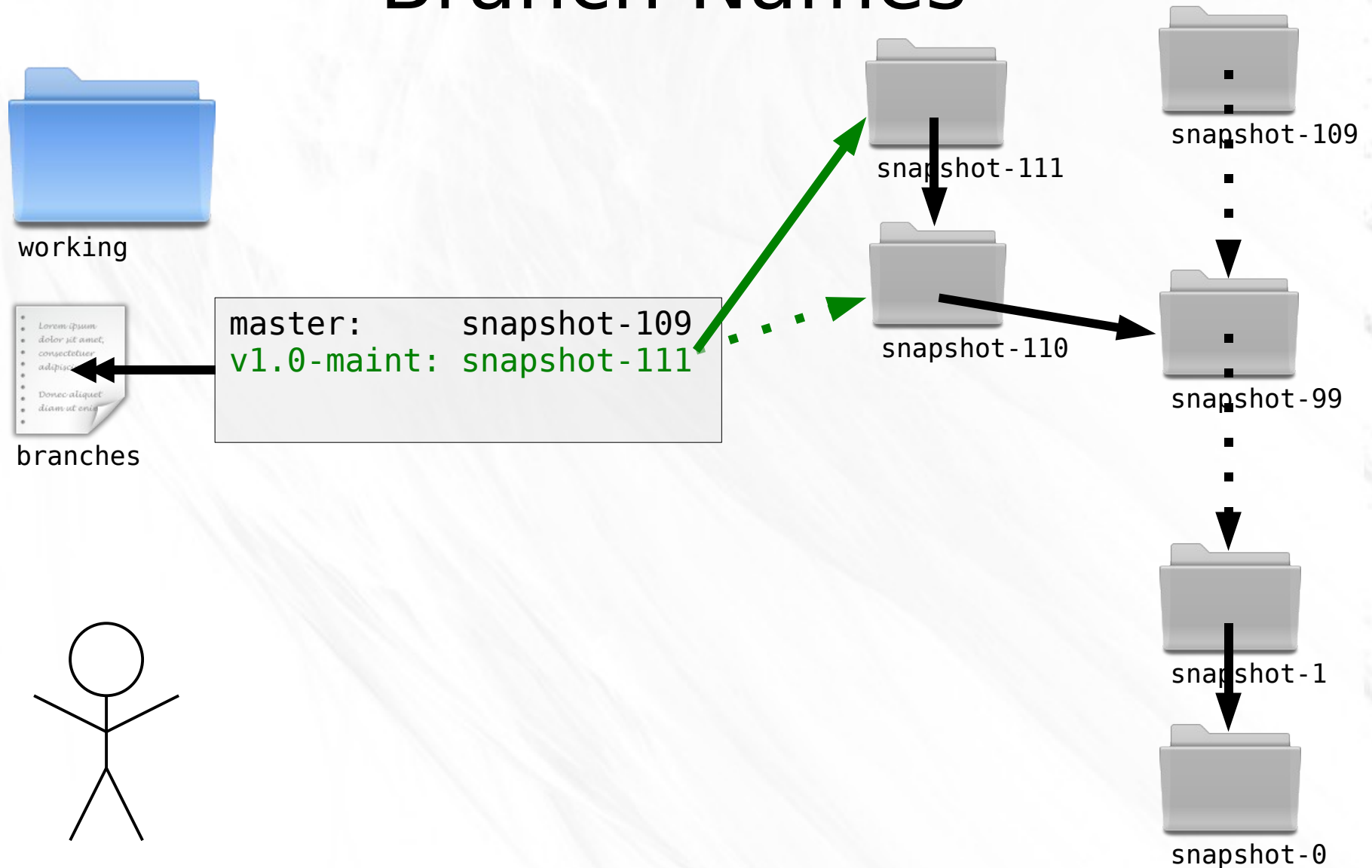


This is the
“Version 1.0 Maintenance” Branch.
It contains:
snapshot-110
(and its ancestors)

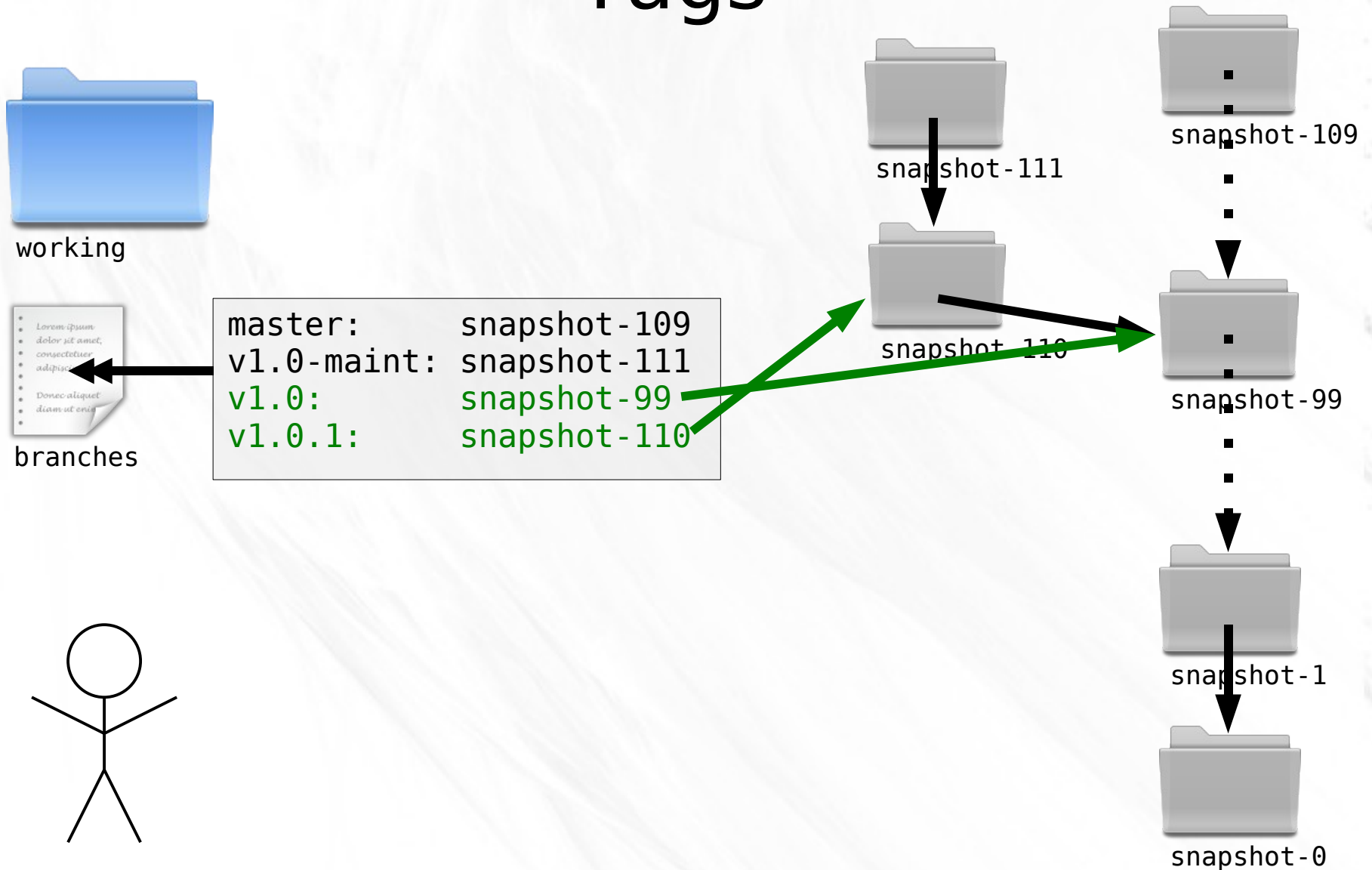
Branch Names



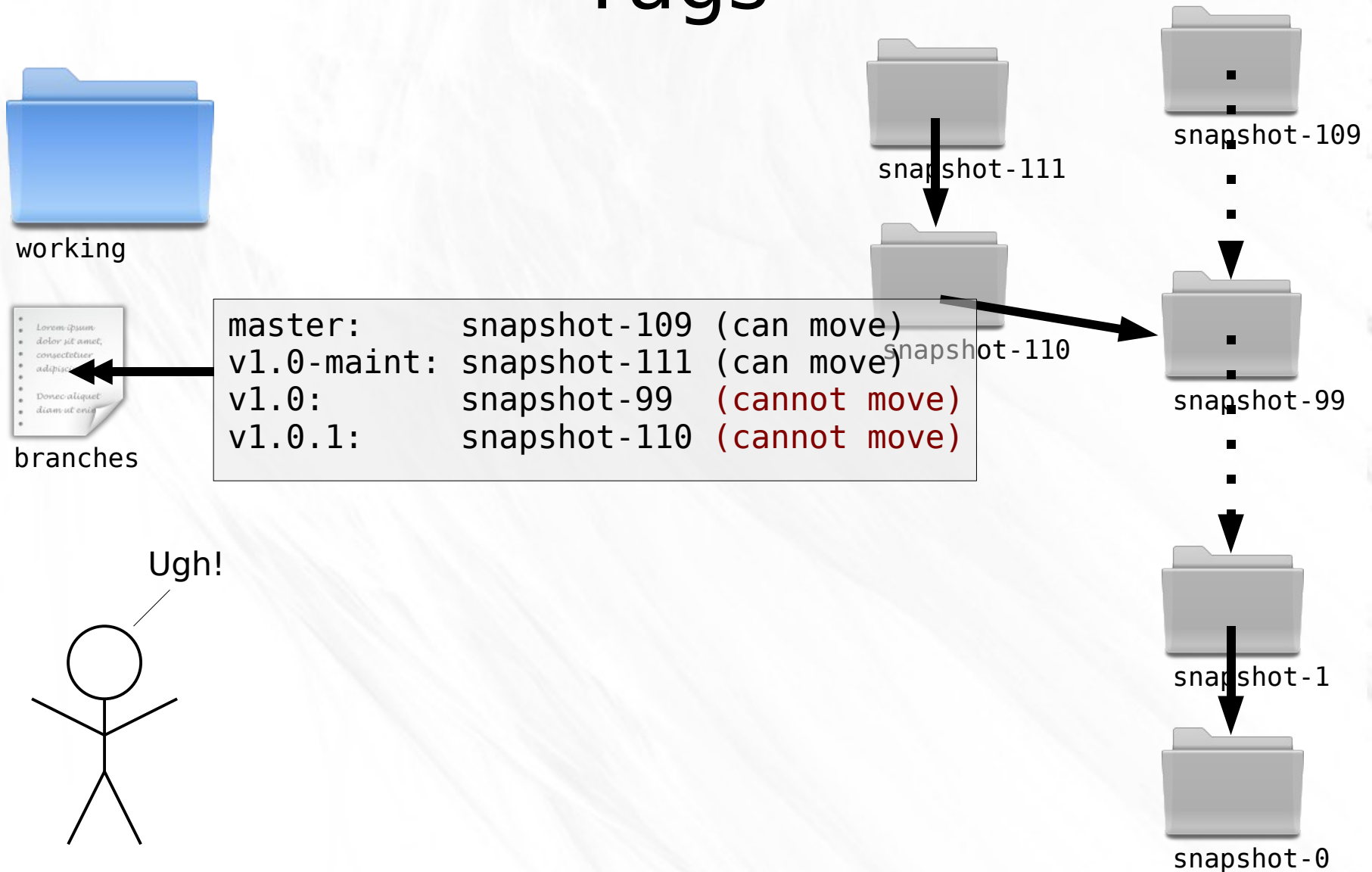
Branch Names



Tags



Tags



Tags



working



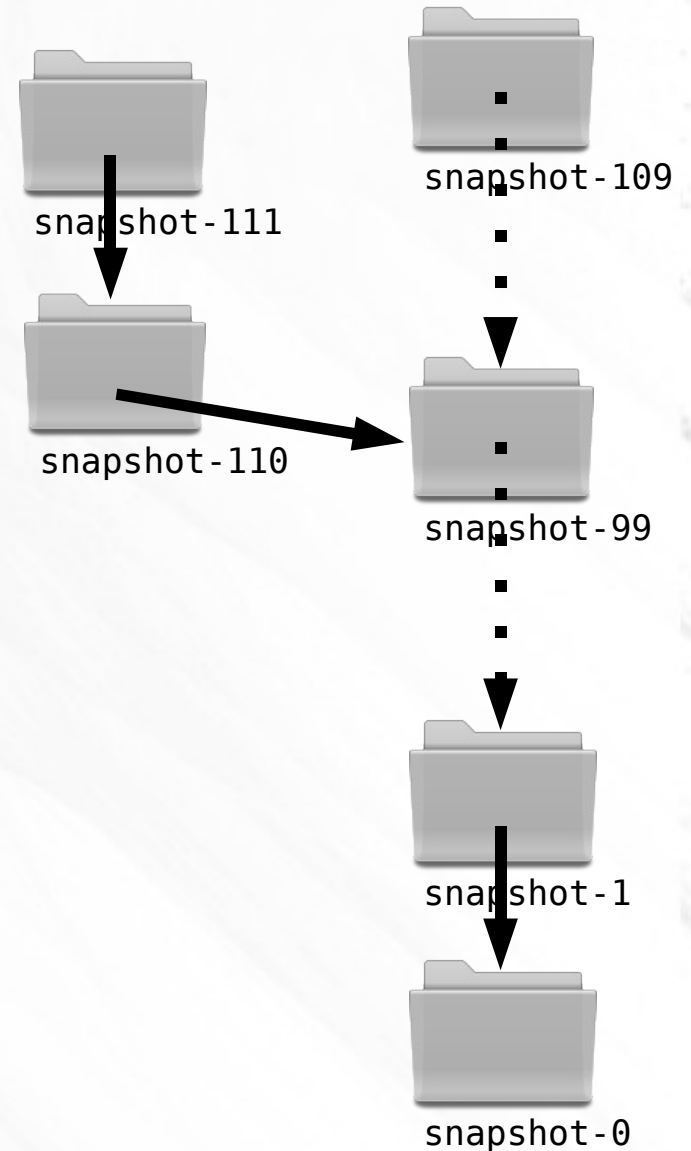
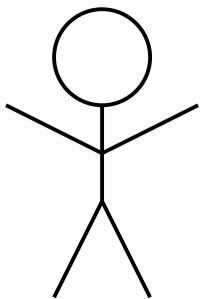
branches



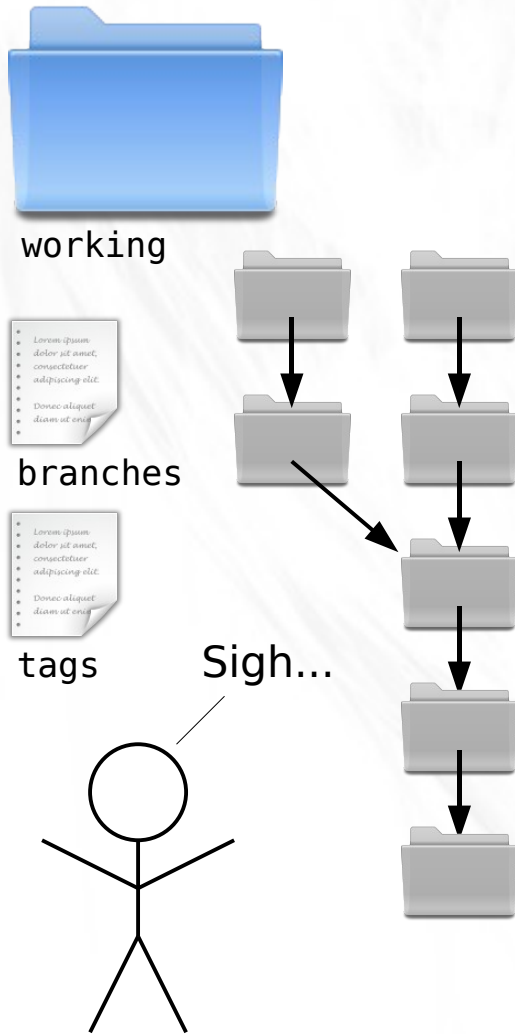
tags

master: snapshot-109
v1.0-maint: snapshot-111

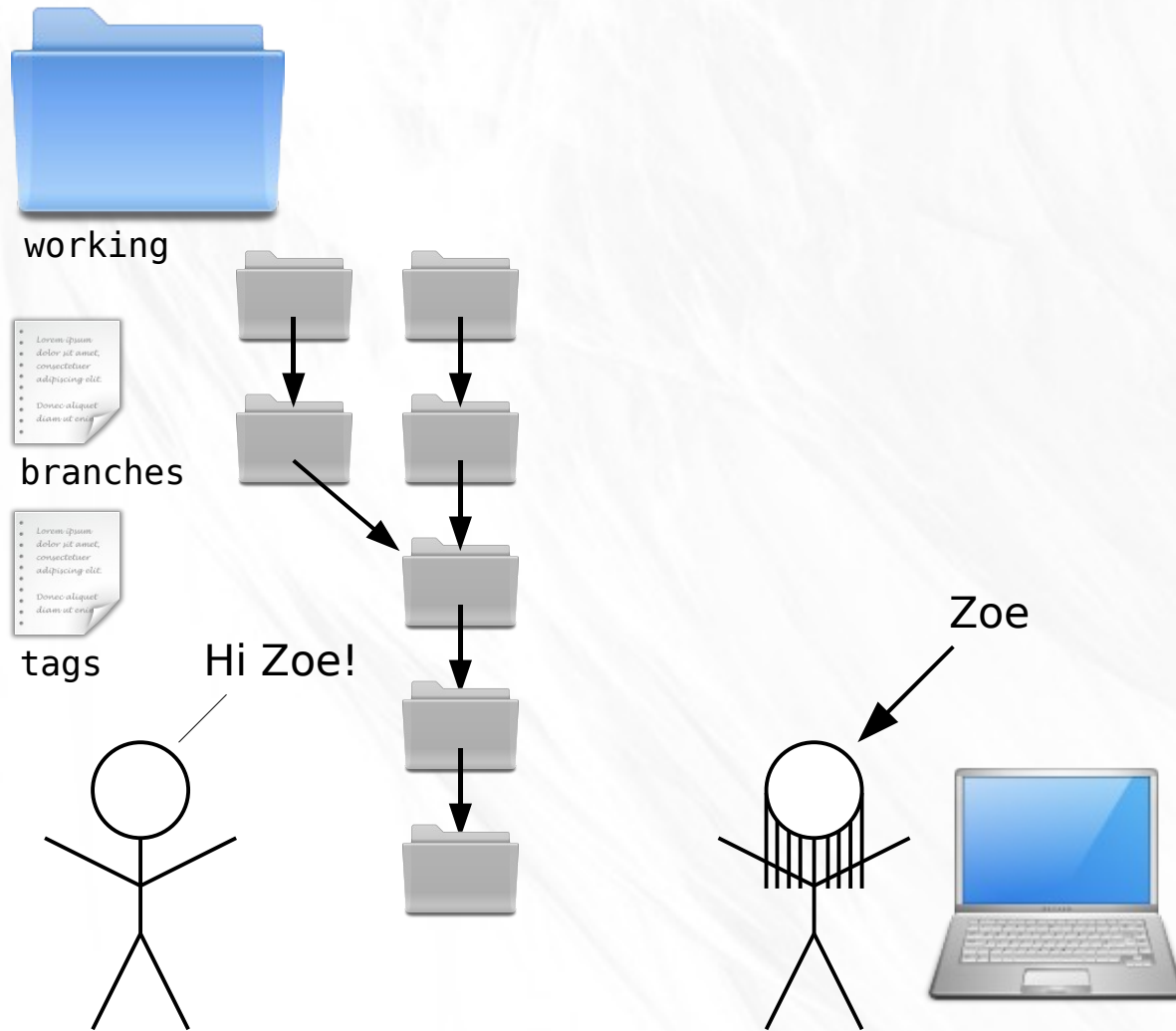
v1.0: snapshot-99
v1.0.1: snapshot-110



Distributed



Distributed



Distributed



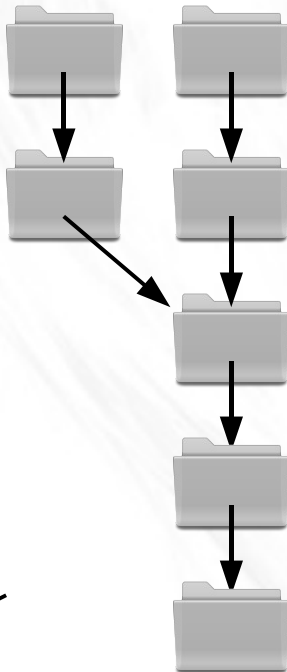
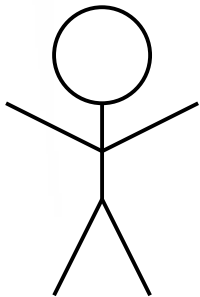
working



branches



tags



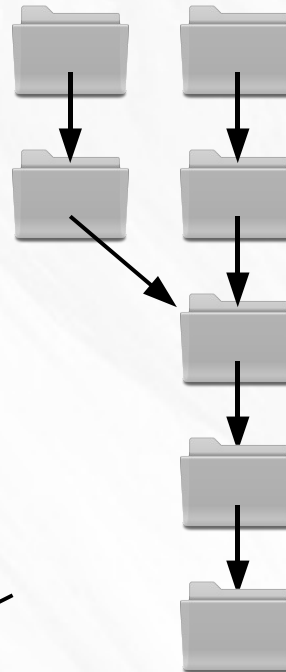
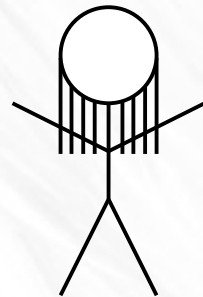
working



branches



tags



Distributed



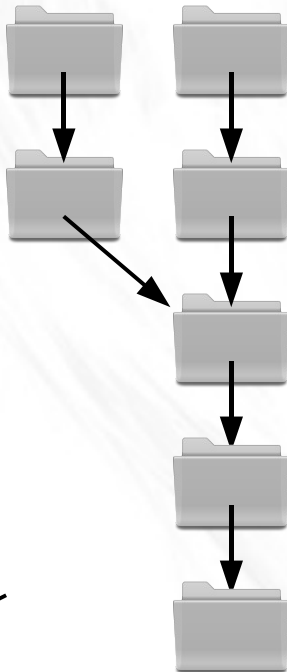
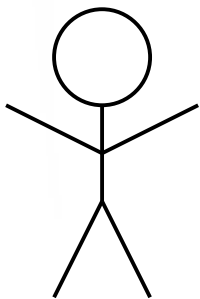
working



branches



tags



working

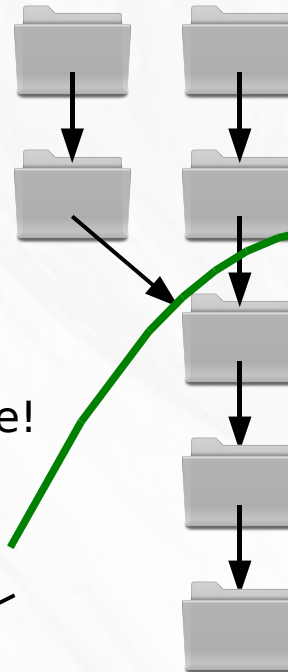
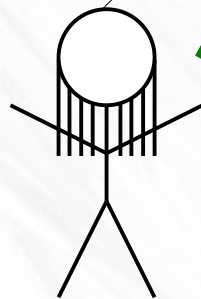


branches

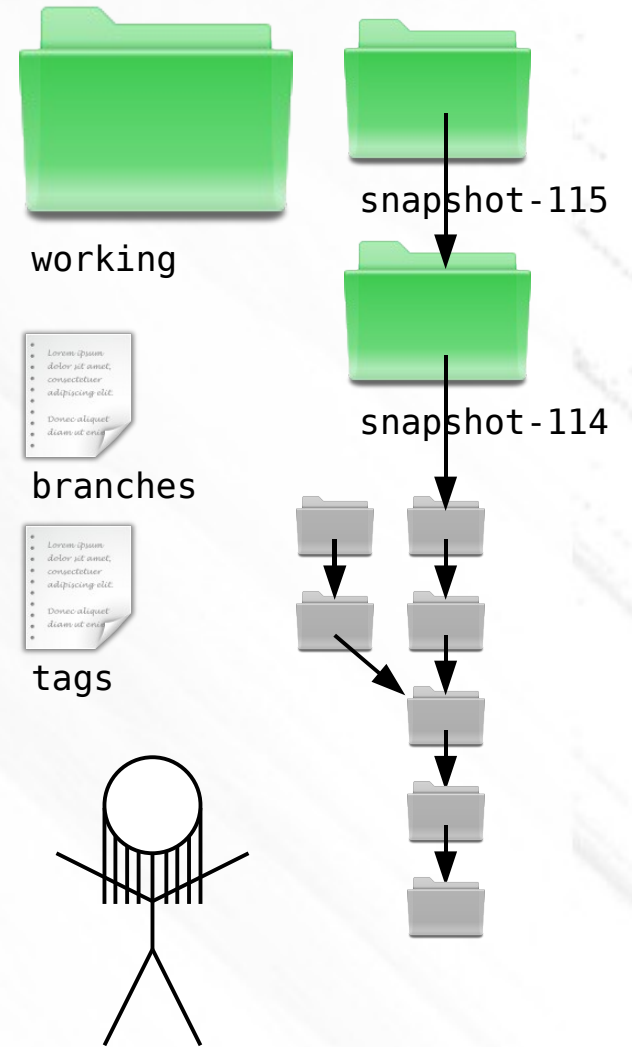
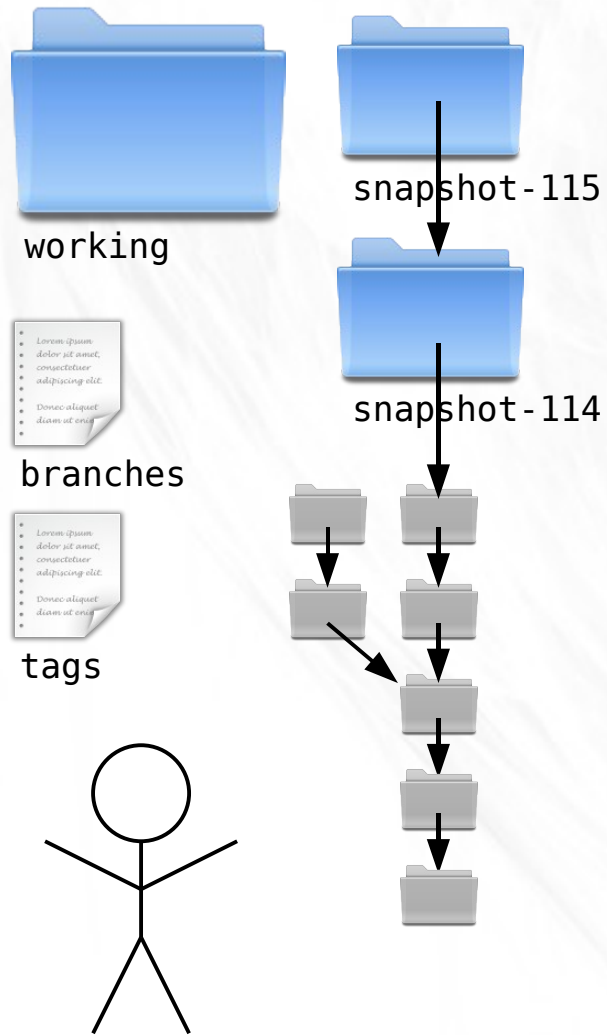


tags

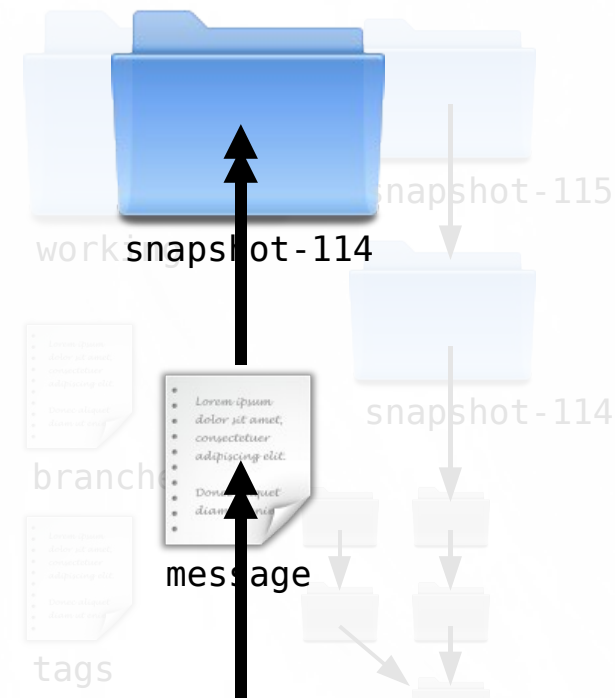
Bye!



Distributed

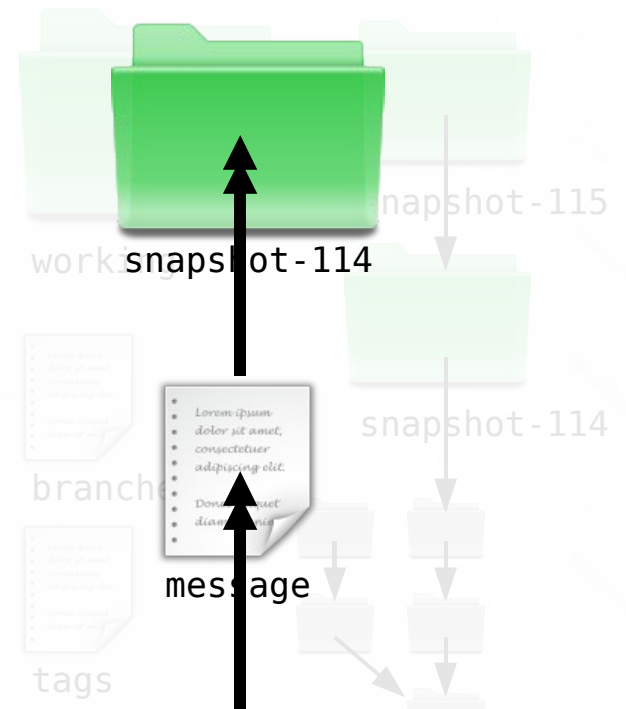


Distributed



2009-05-22 12:12:12
parent: snapshot-113
author: Me <me@me.me>

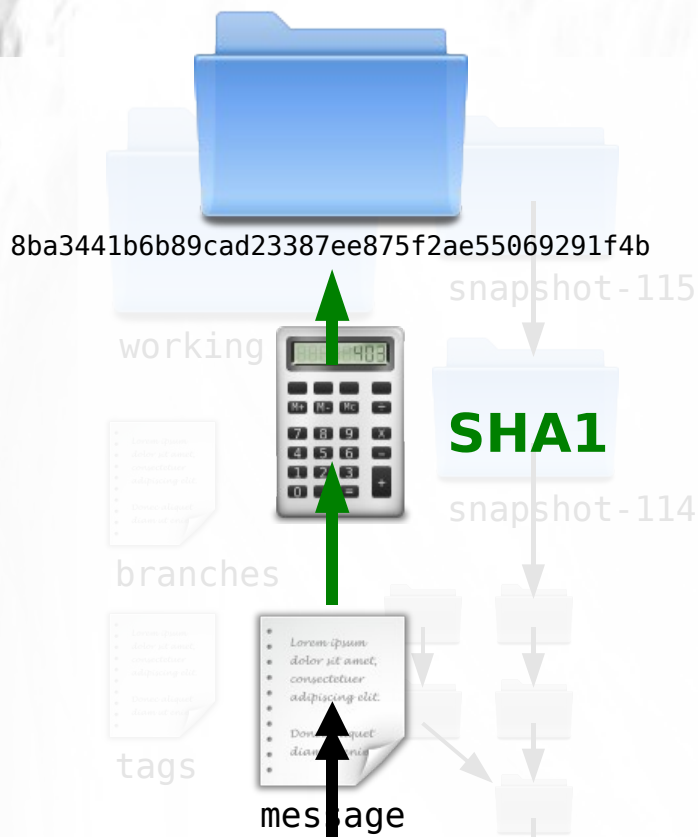
Blarfle, a cool new
feature; extends the
existing blorg.



2009-05-21 23:45:01
parent: snapshot-113
author: Zoe <zoe@z.oe>

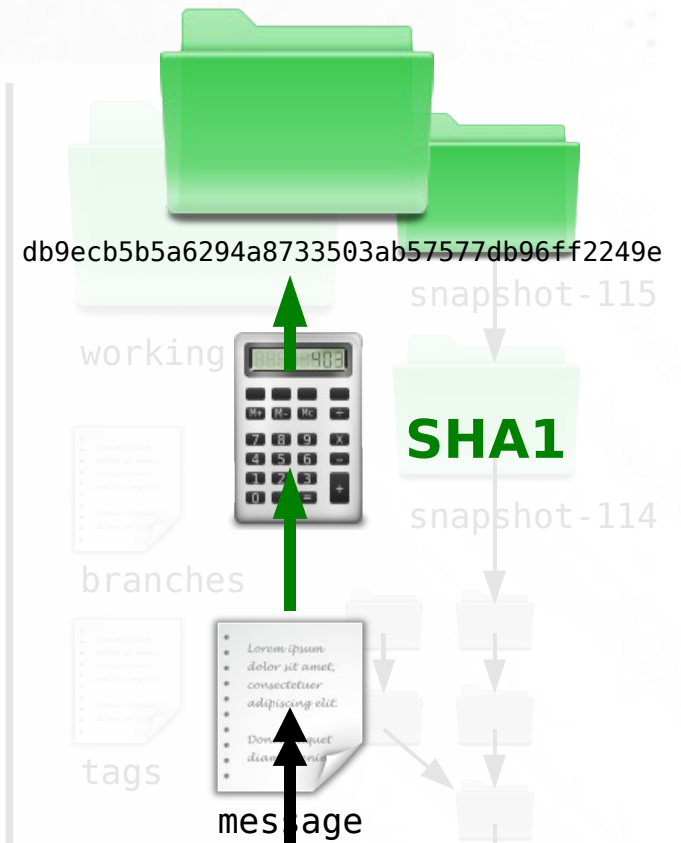
Introduced a new foo,
and reset the bar to
xyzy.

Distributed



2009-05-22 12:12:12
parent: snapshot-113
author: Me <me@me.me>

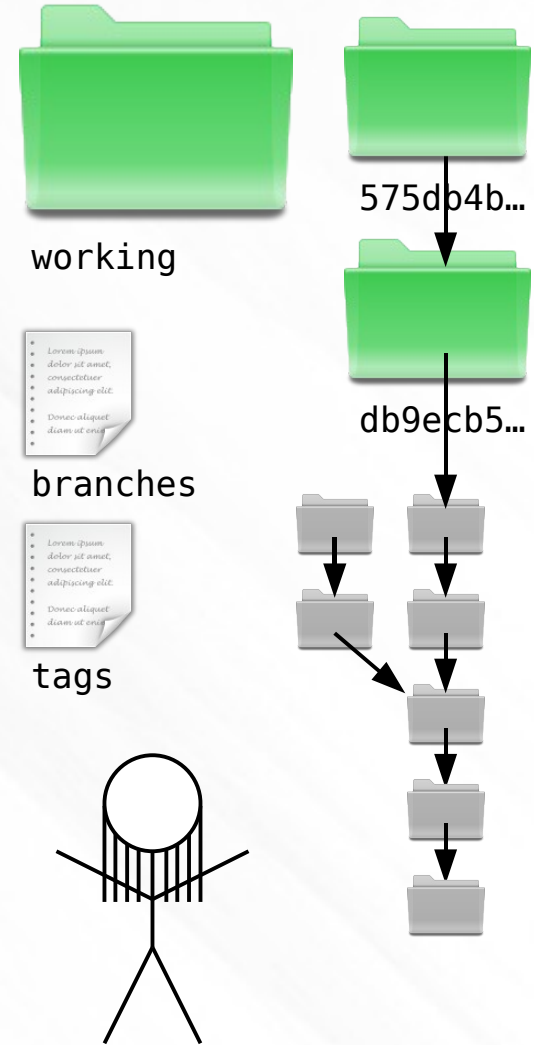
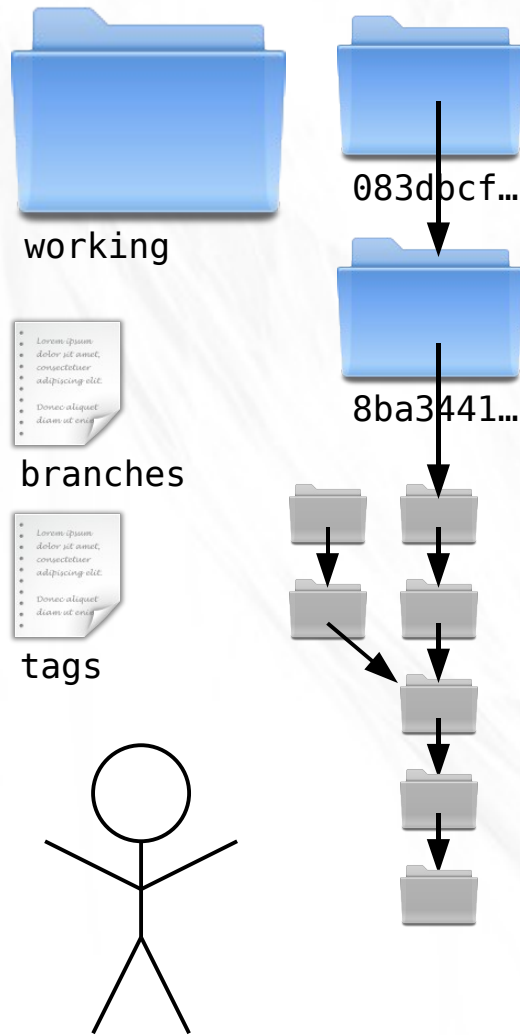
Blarfle, a cool new
feature; extends the
existing blorg.



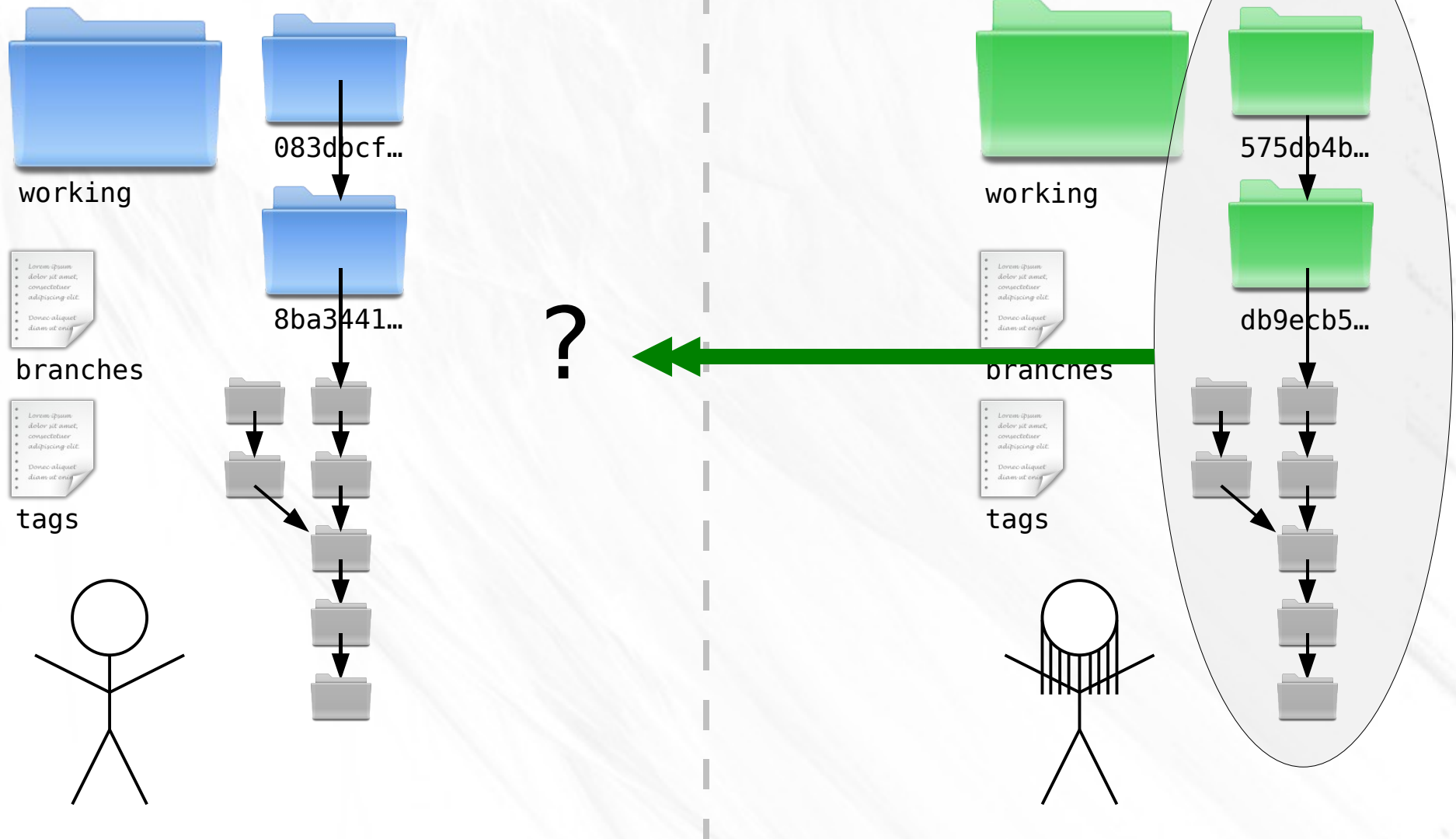
2009-05-21 23:45:01
parent: snapshot-113
author: Zoe <zoe@z.oe>

Introduced a new foo,
and reset the bar to
xyzyz.

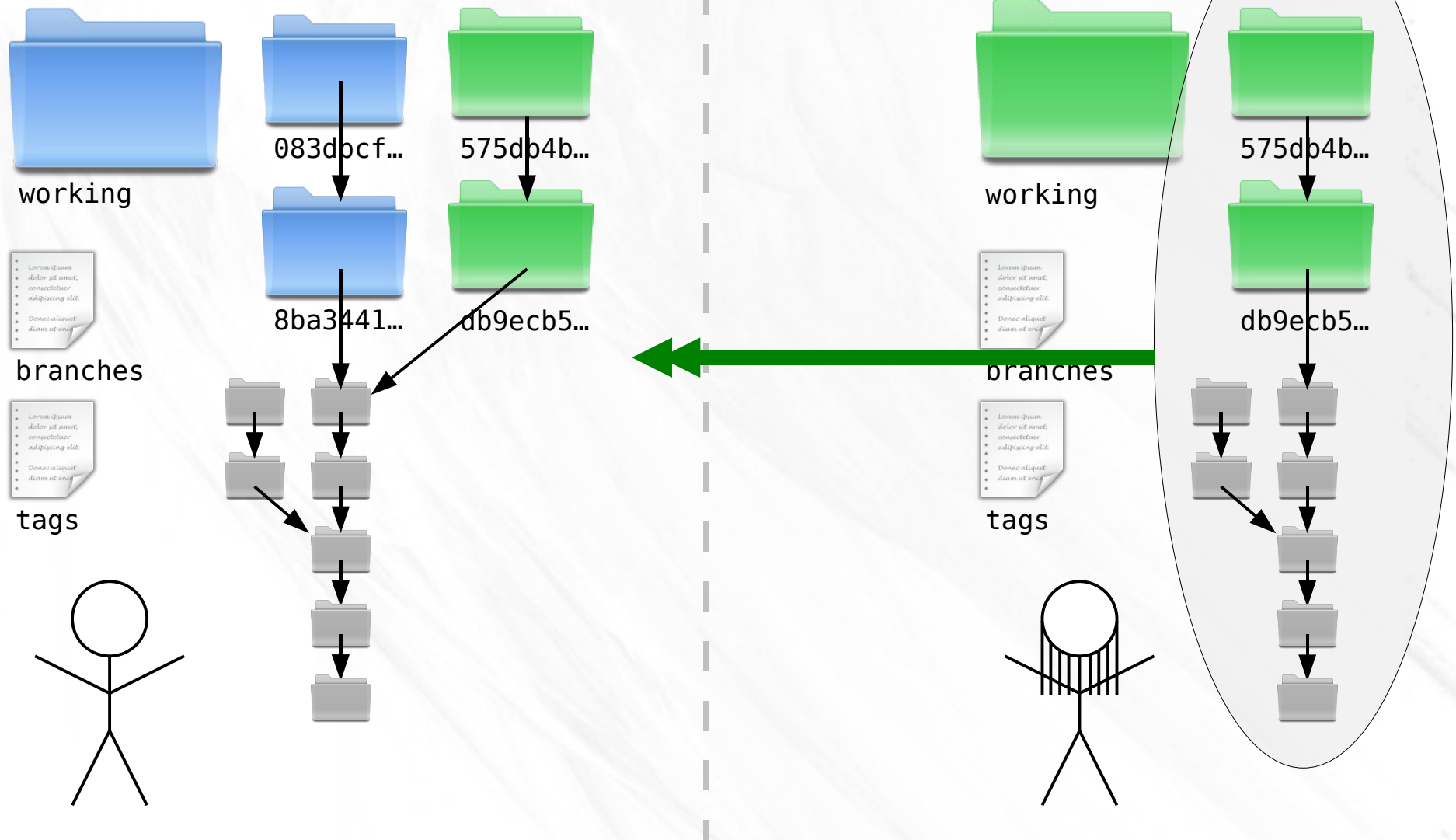
Distributed



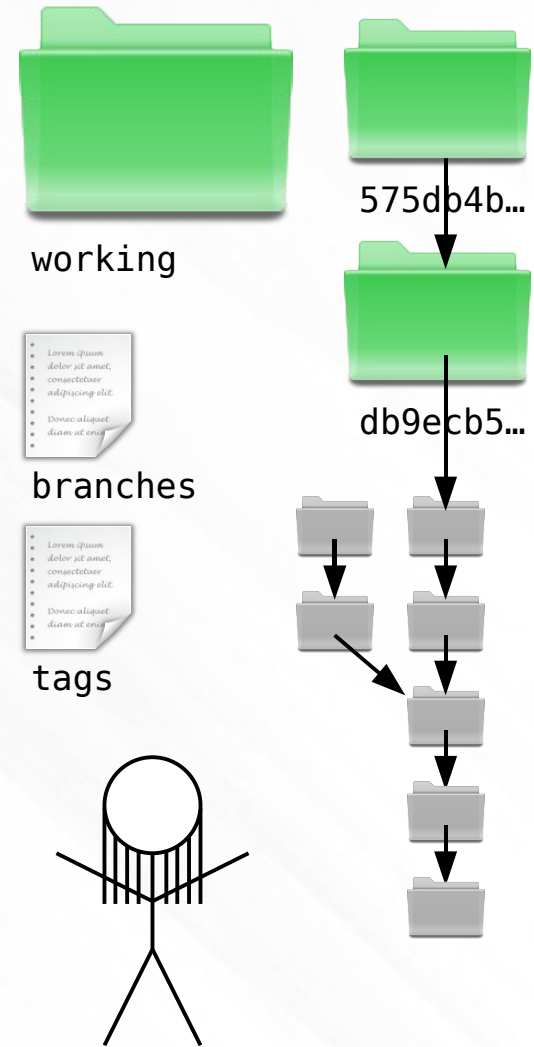
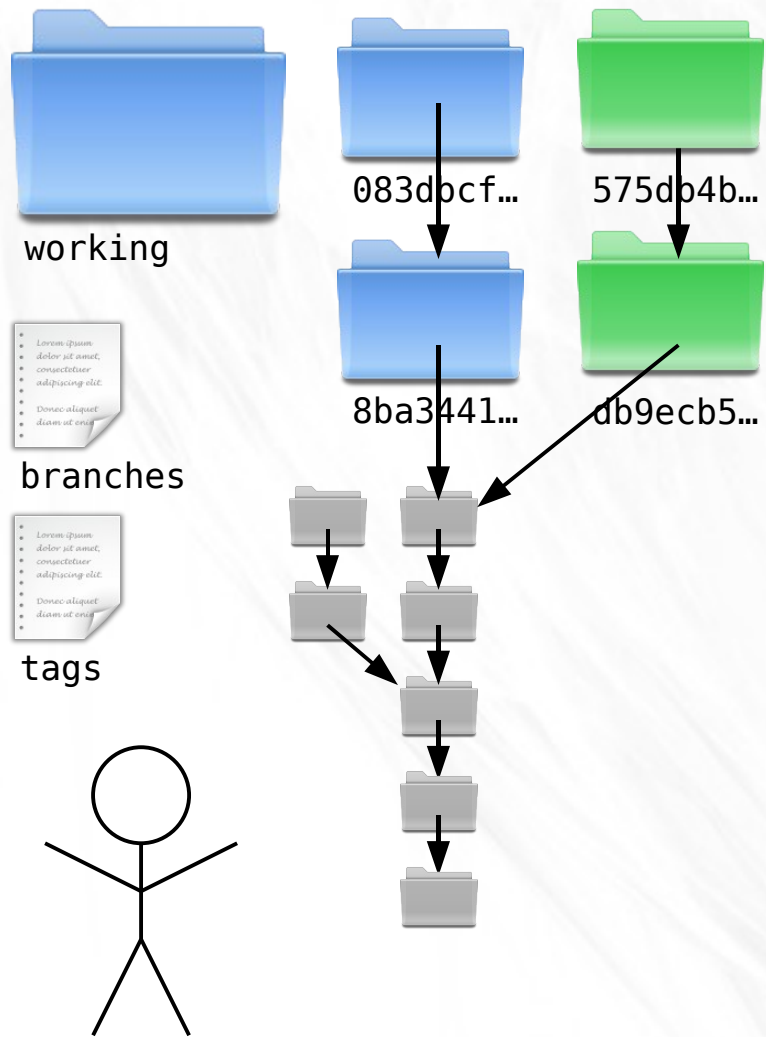
Distributed



Distributed



Distributed



Offline



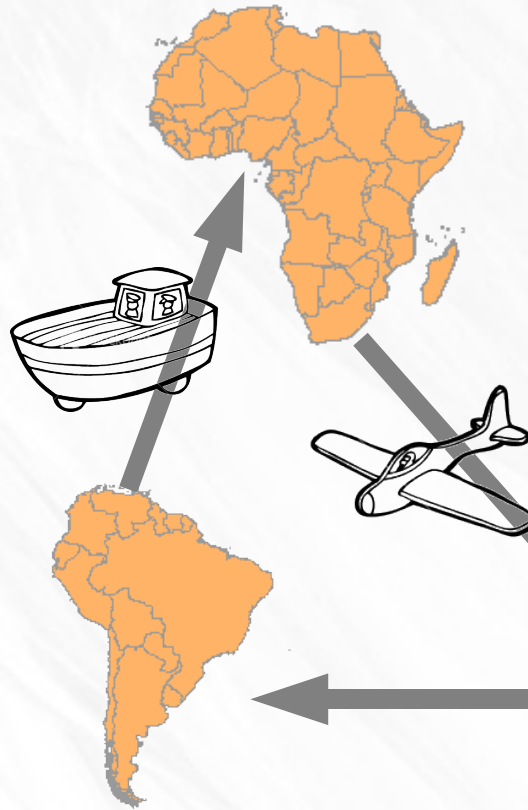
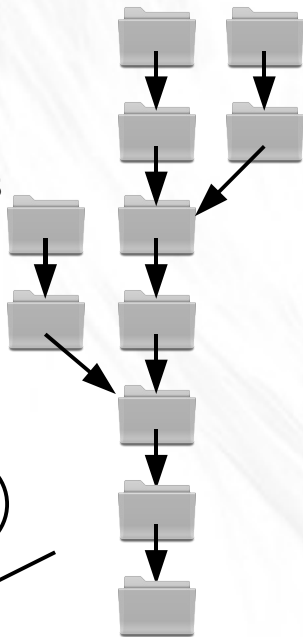
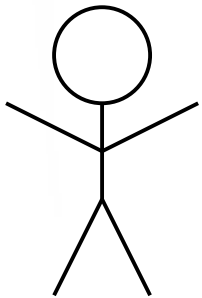
working



branches



tags



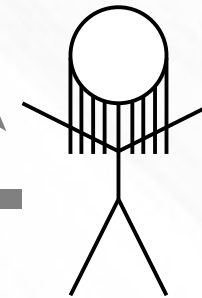
working



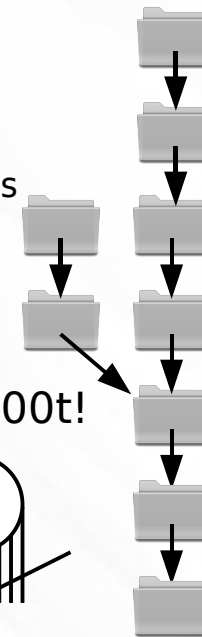
branches



tags



w00t!



Offline



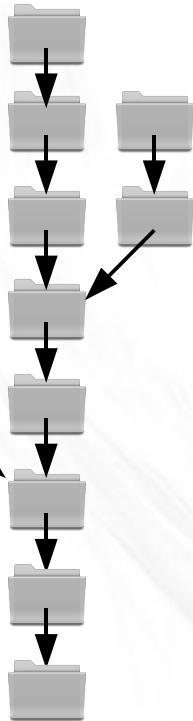
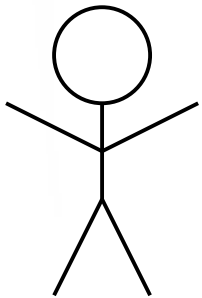
working



branches



tags



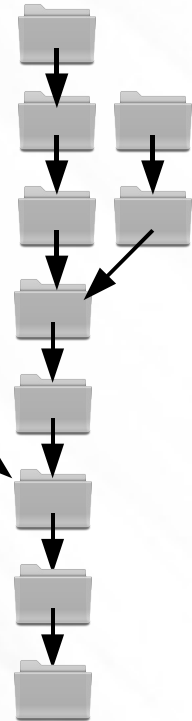
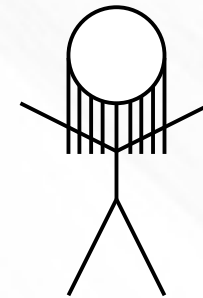
working



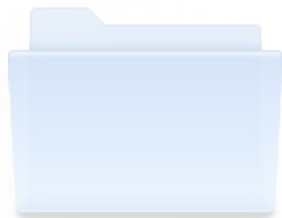
branches



tags



(simpler drawings)



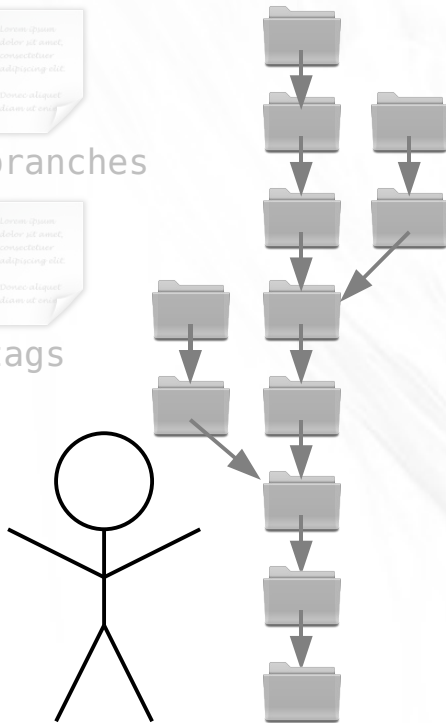
working



branches



tags



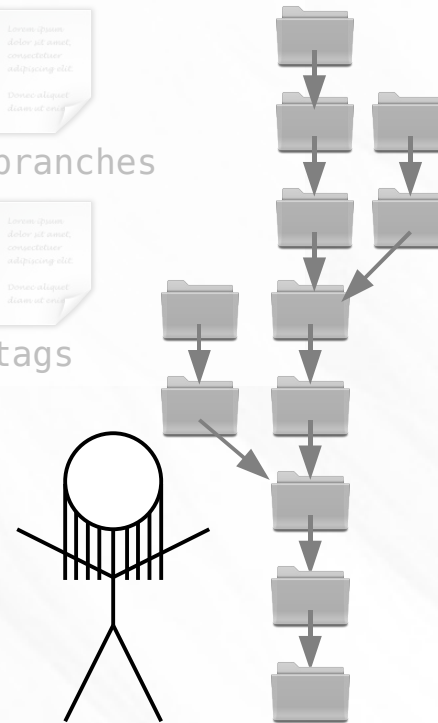
working



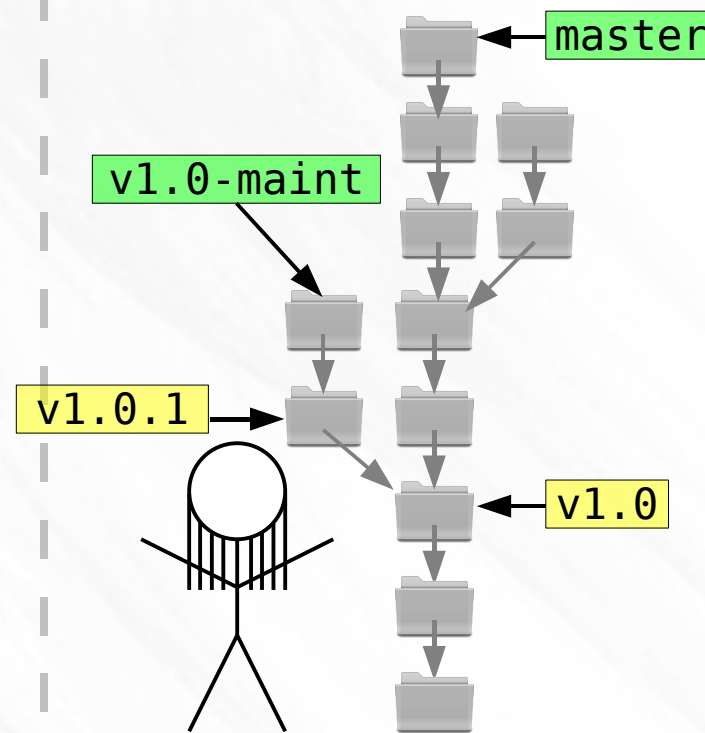
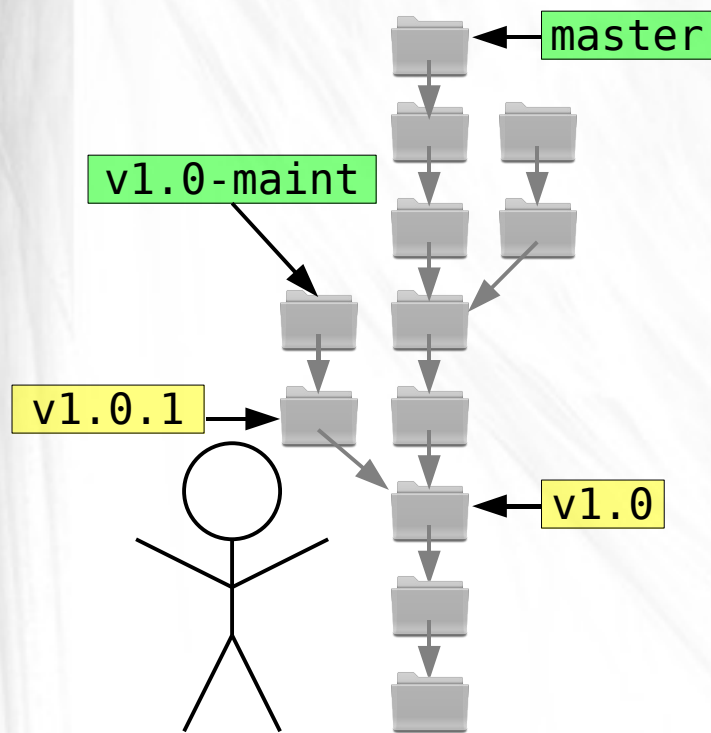
branches



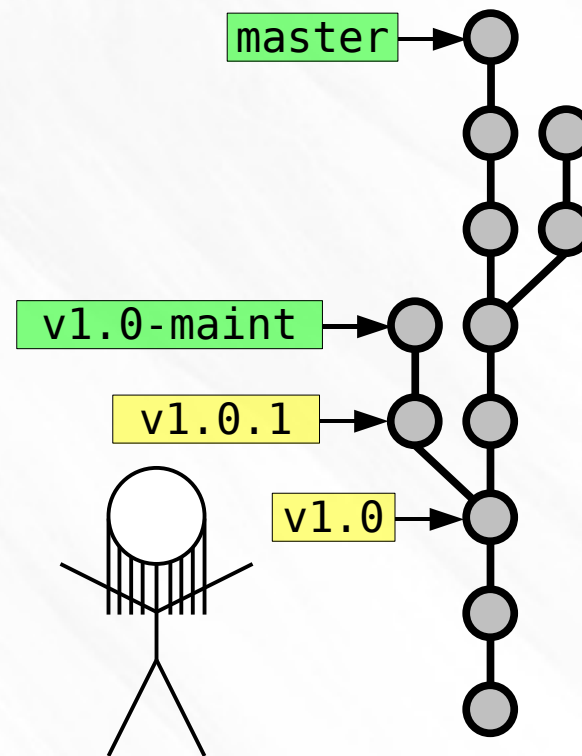
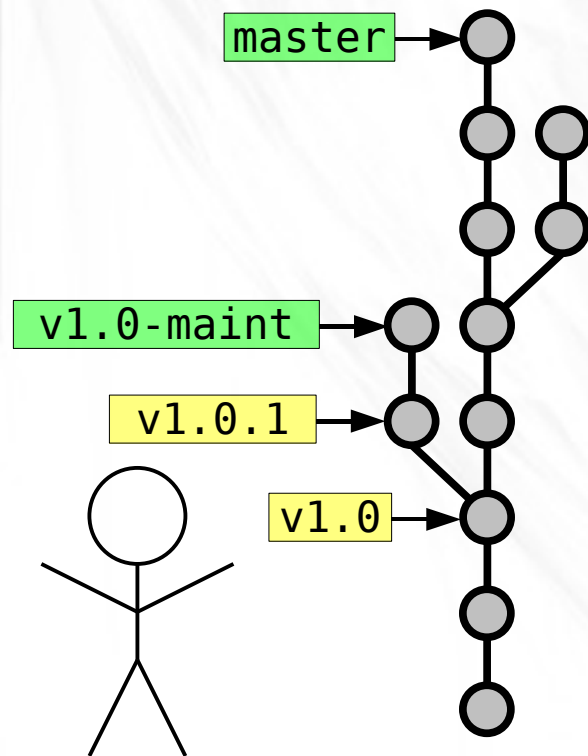
tags



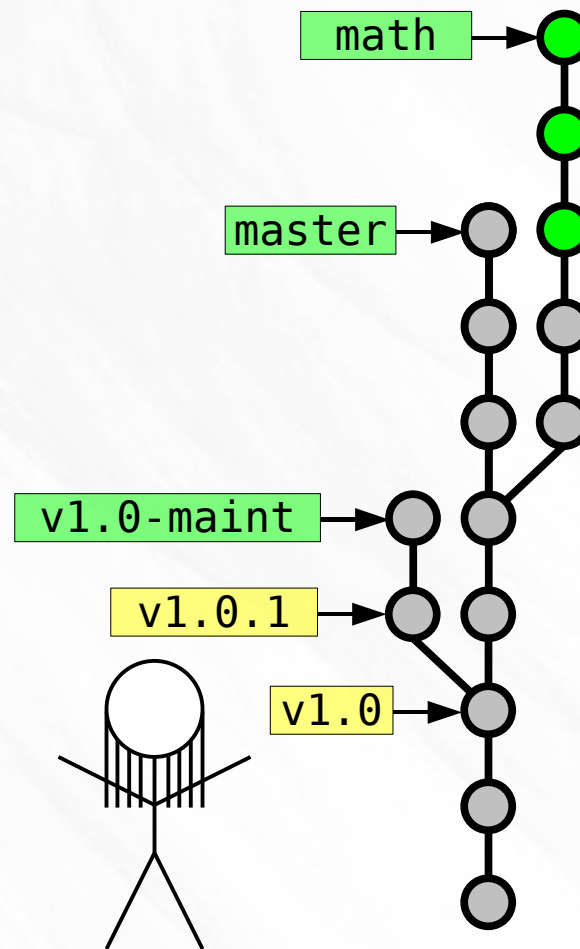
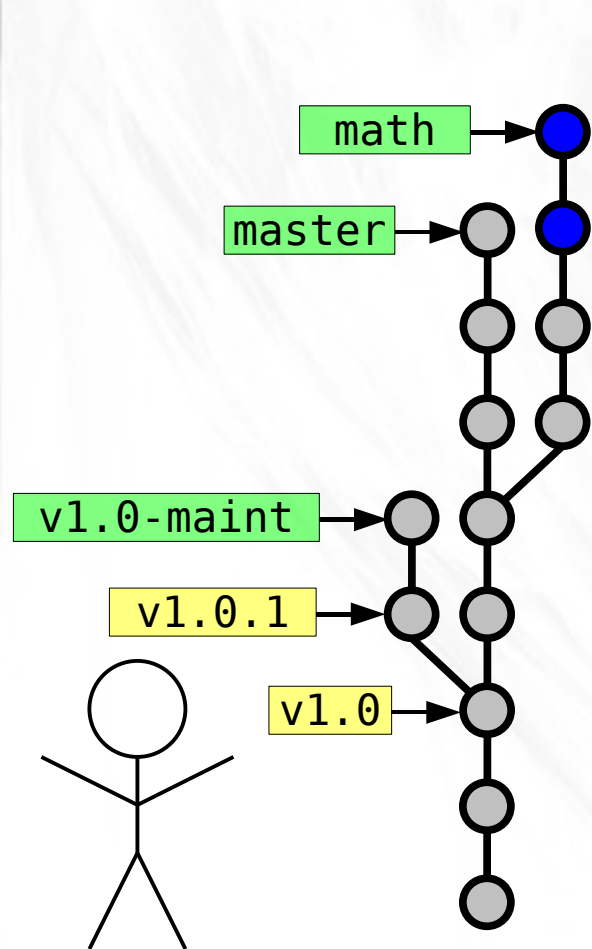
(simpler drawings)



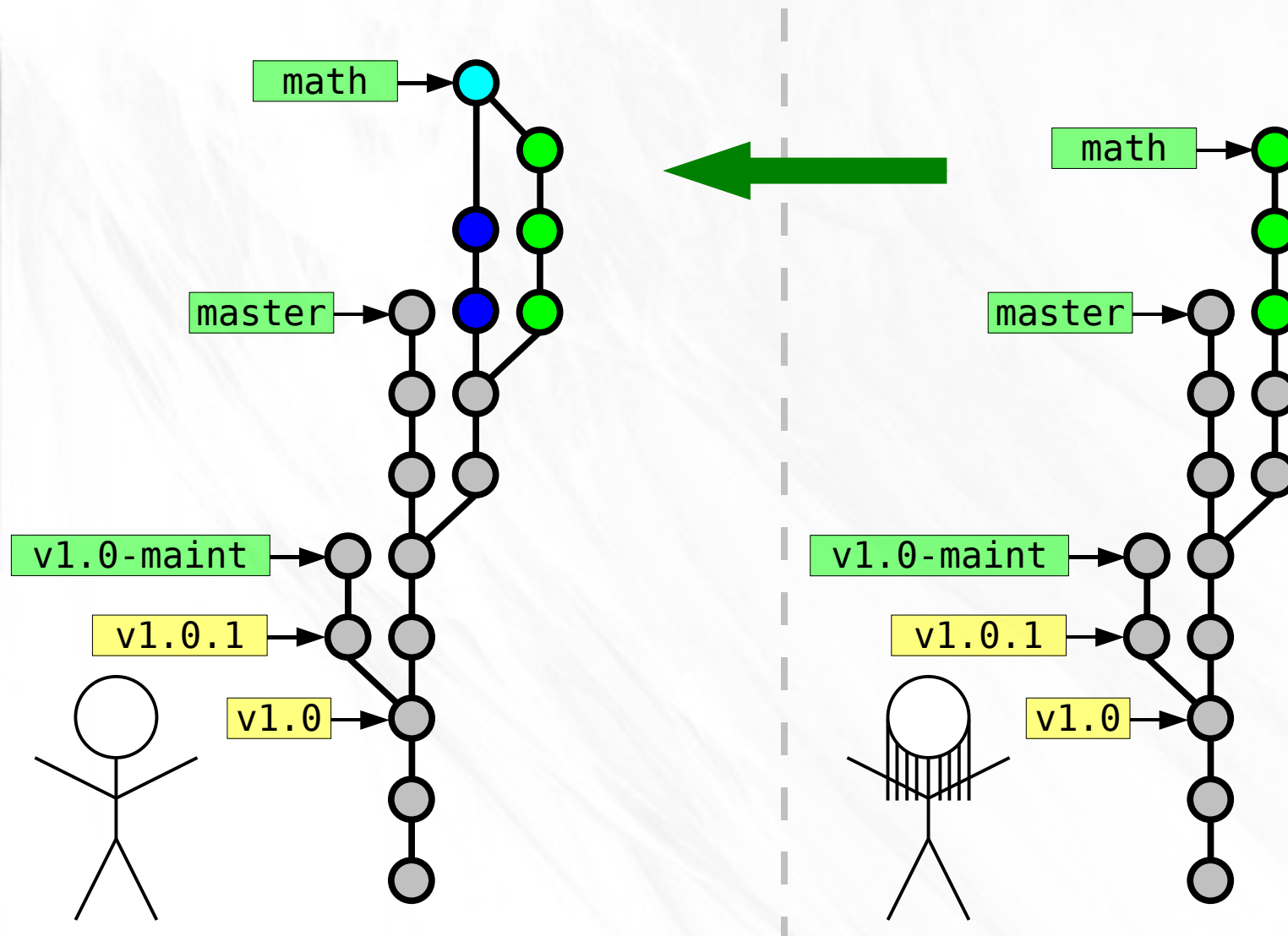
(simpler drawings)



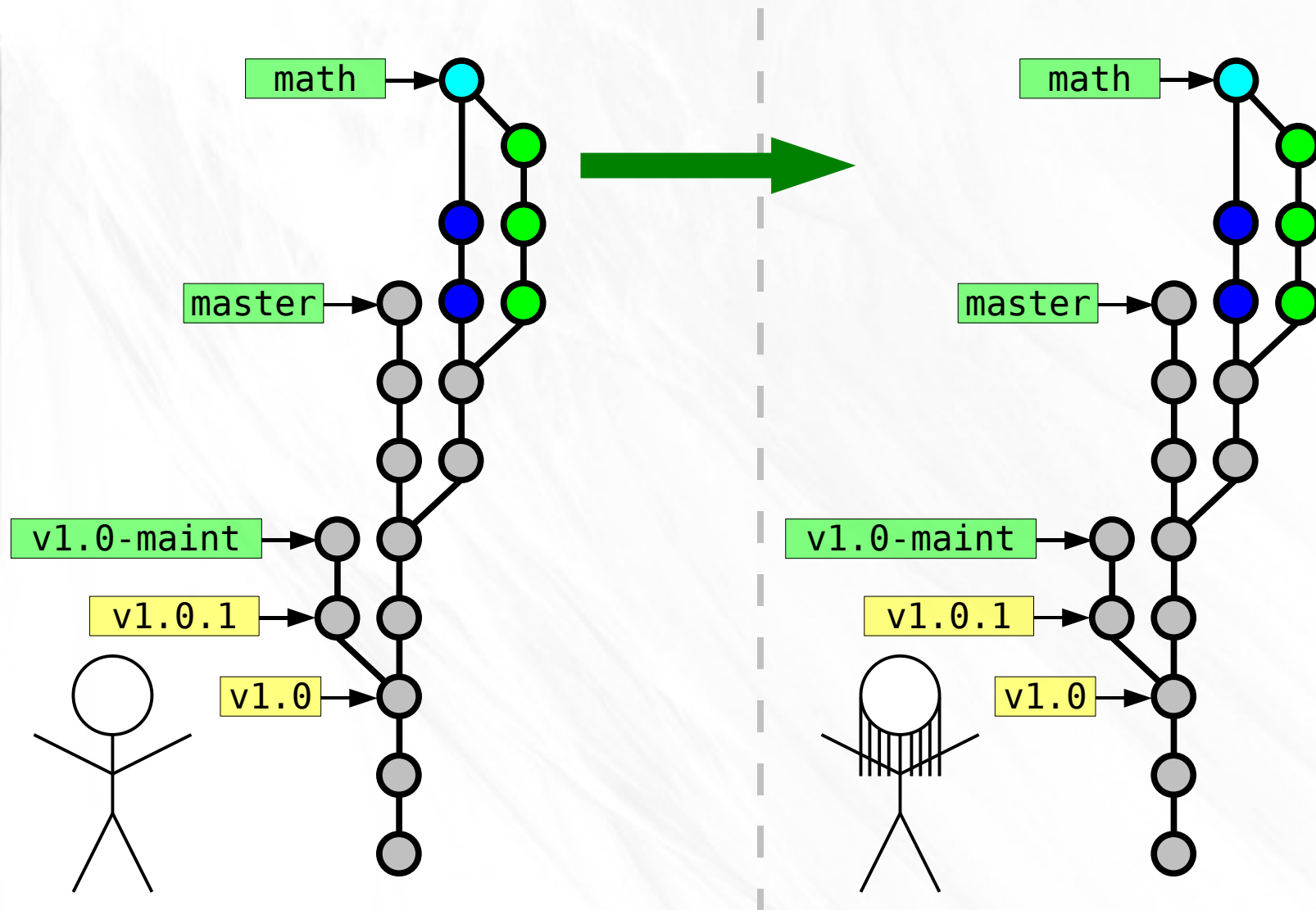
Merges



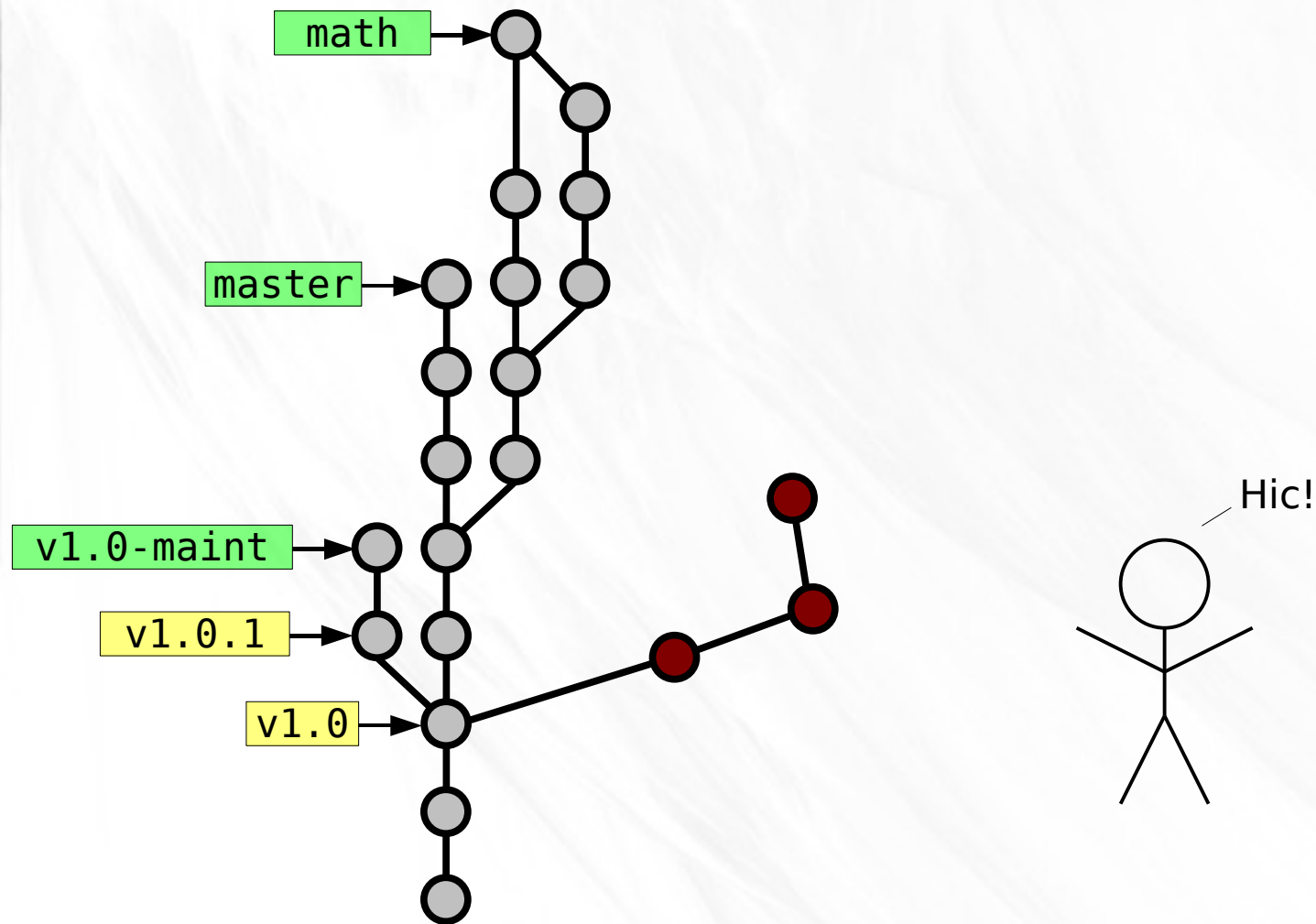
Merges



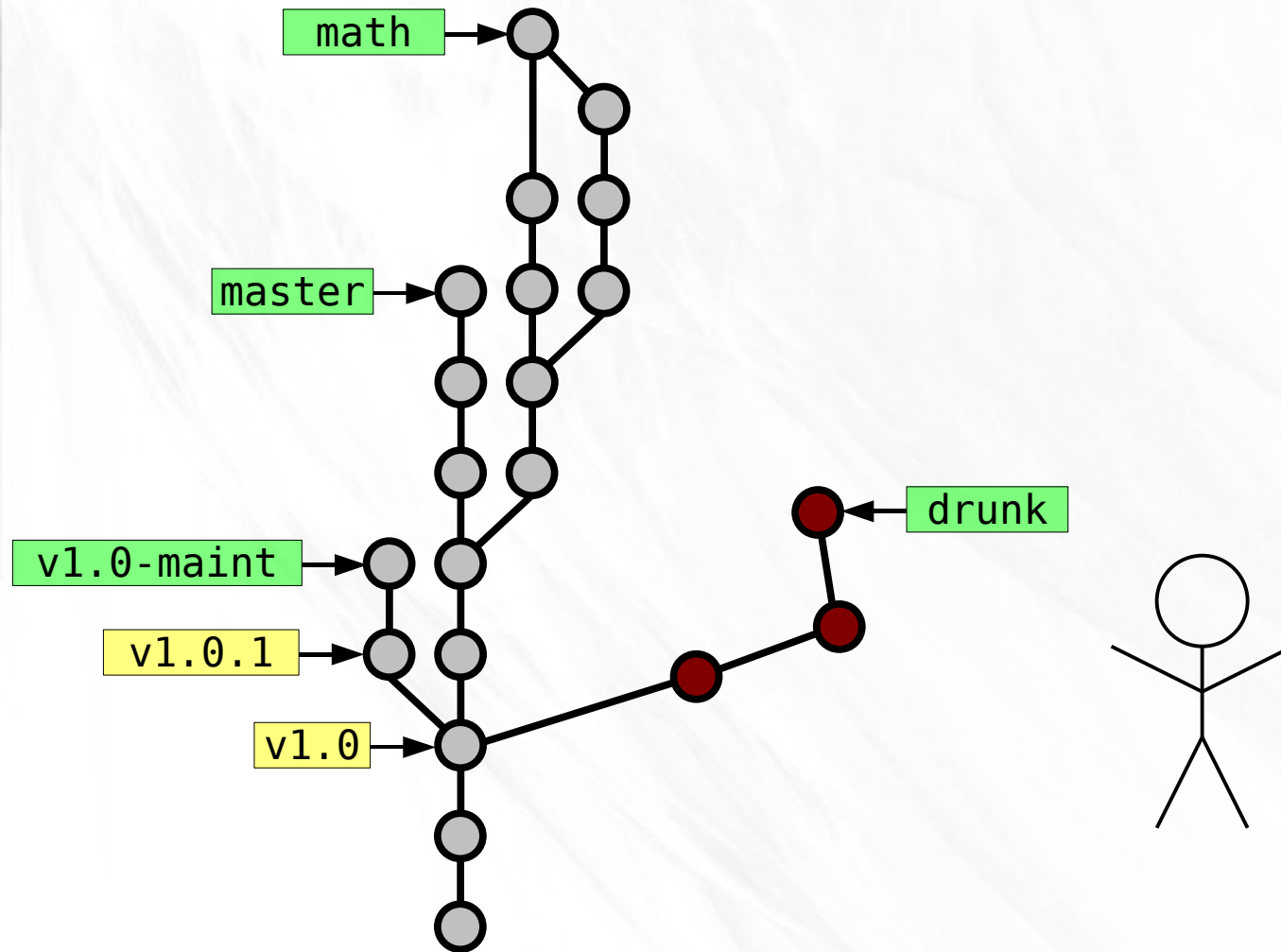
Merges



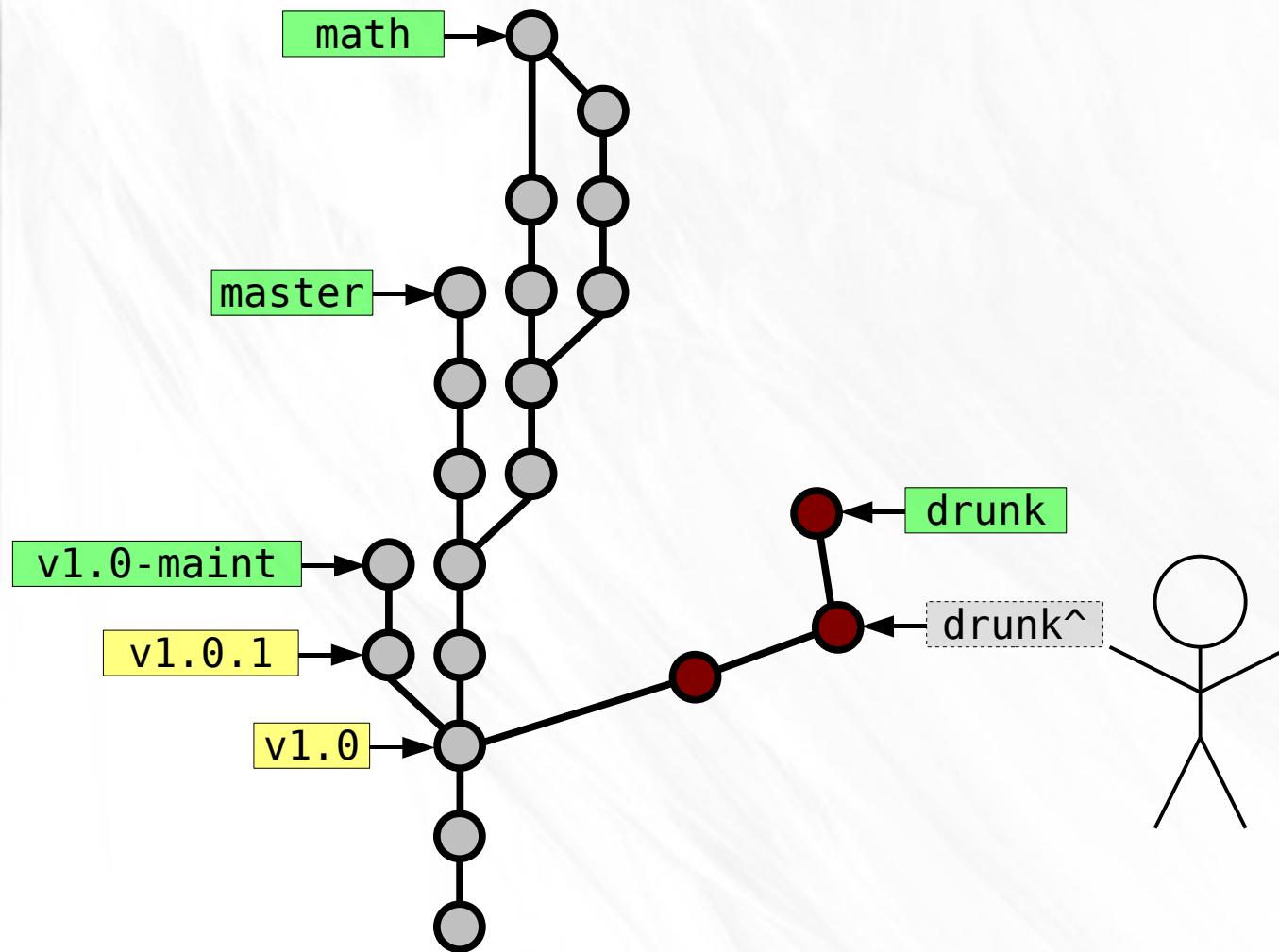
Rewriting History



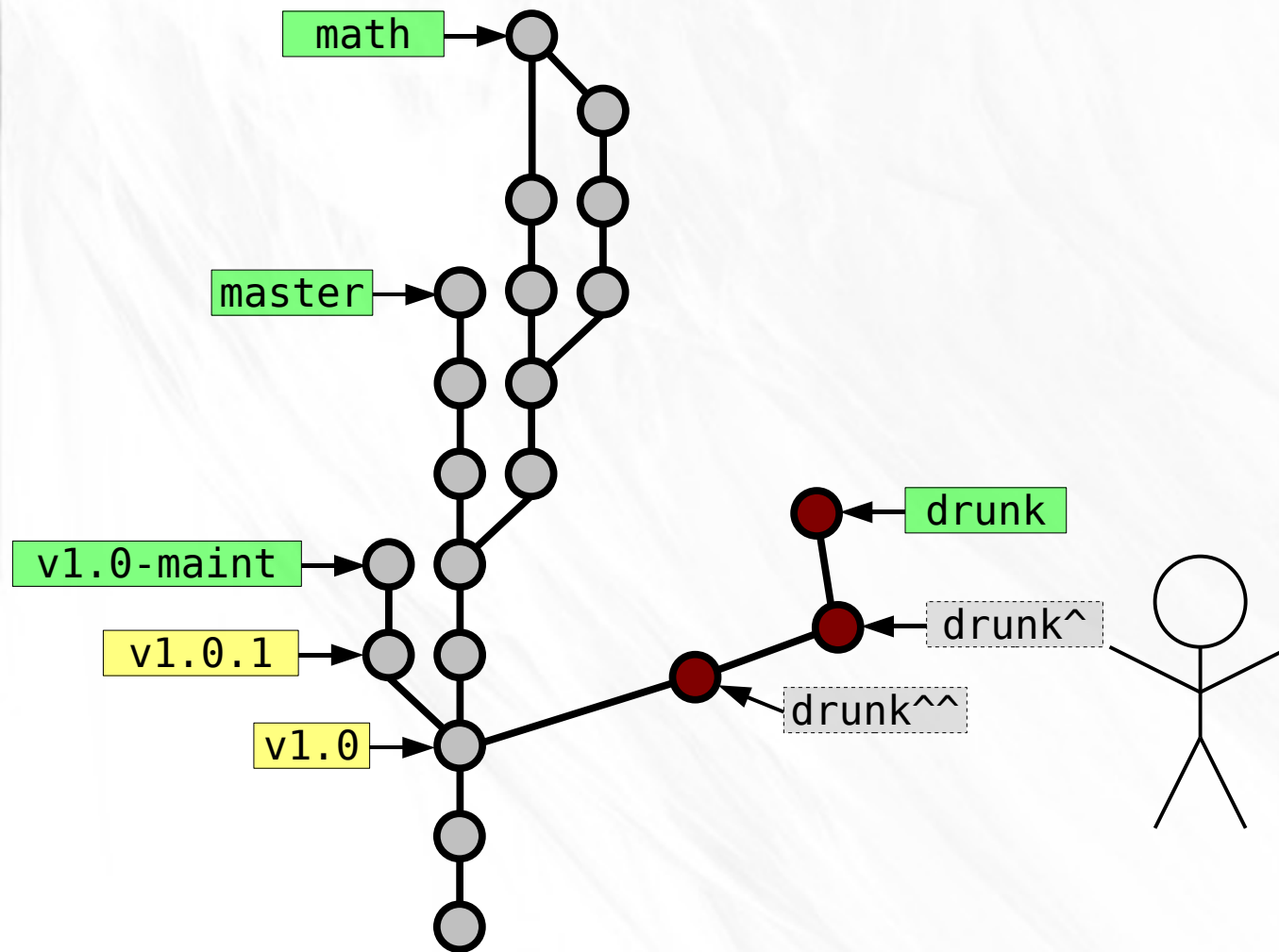
Rewriting History



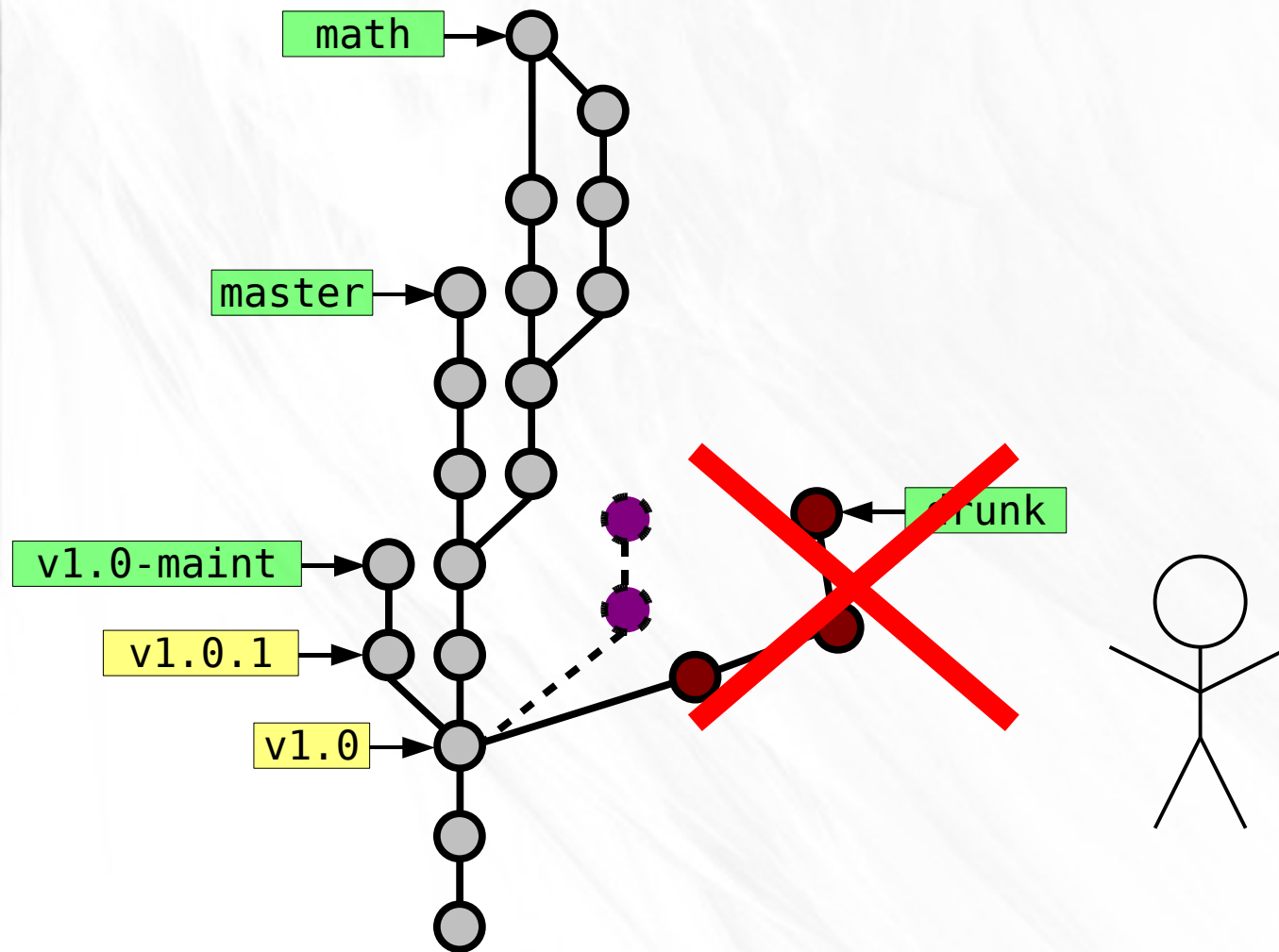
Rewriting History



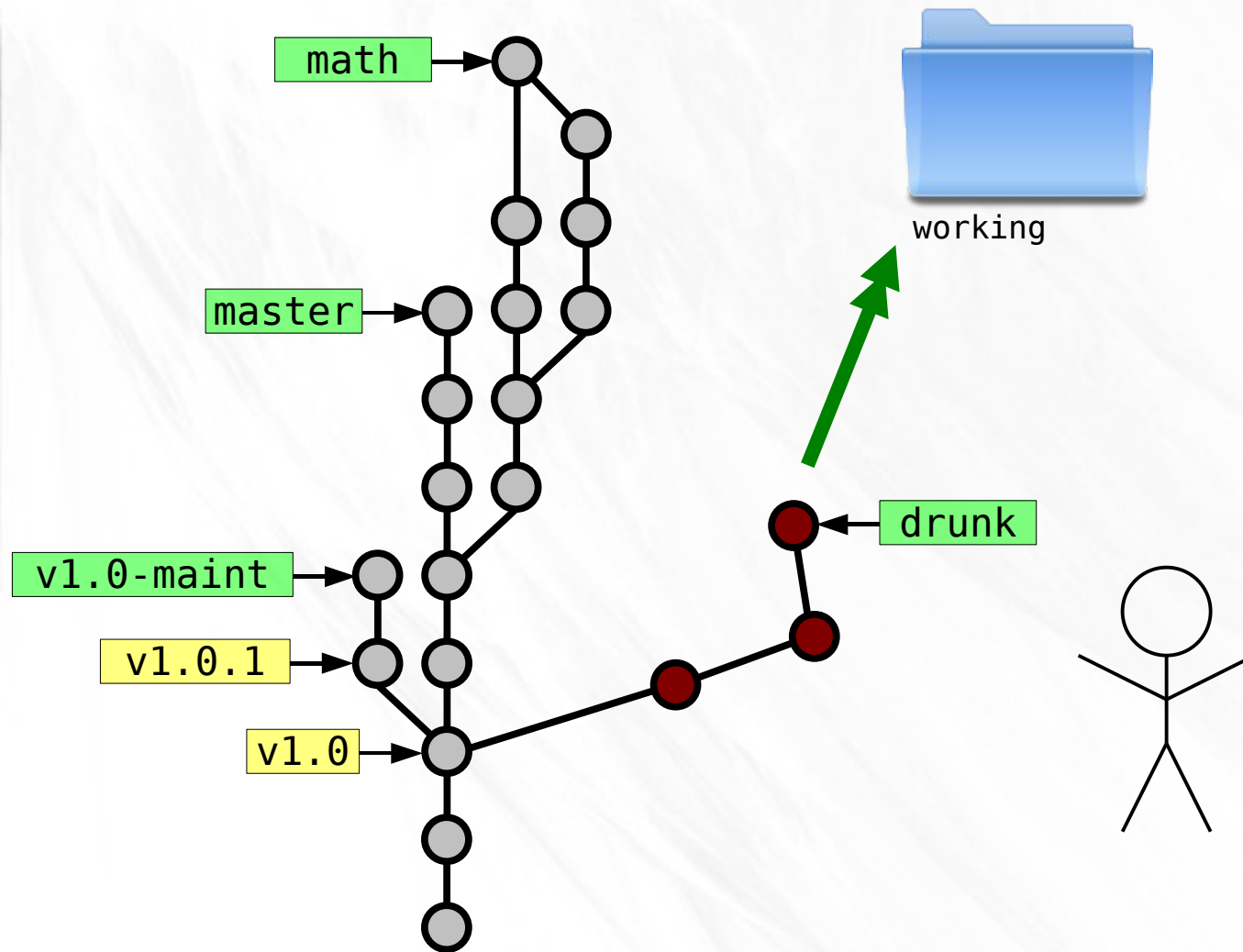
Rewriting History



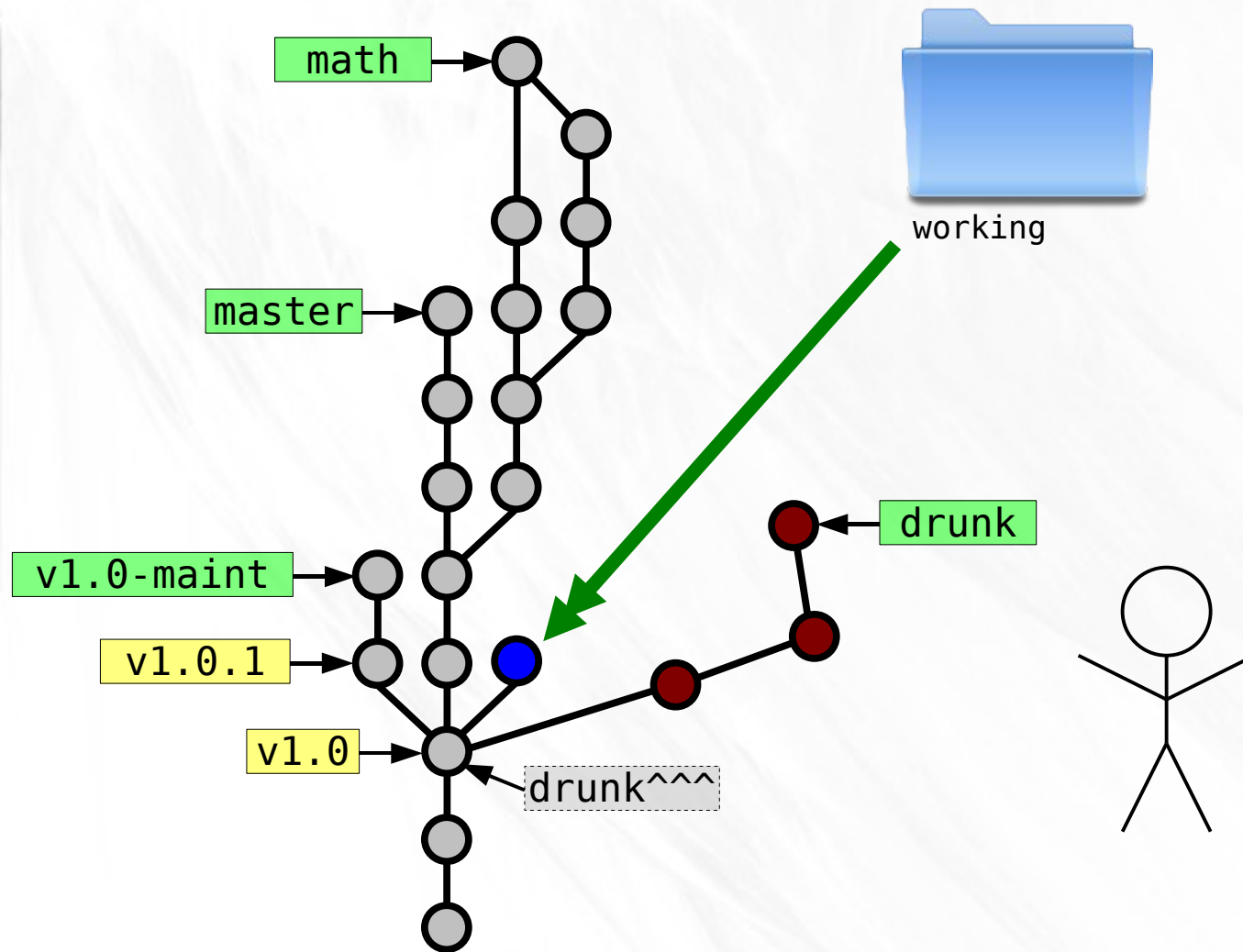
Rewriting History



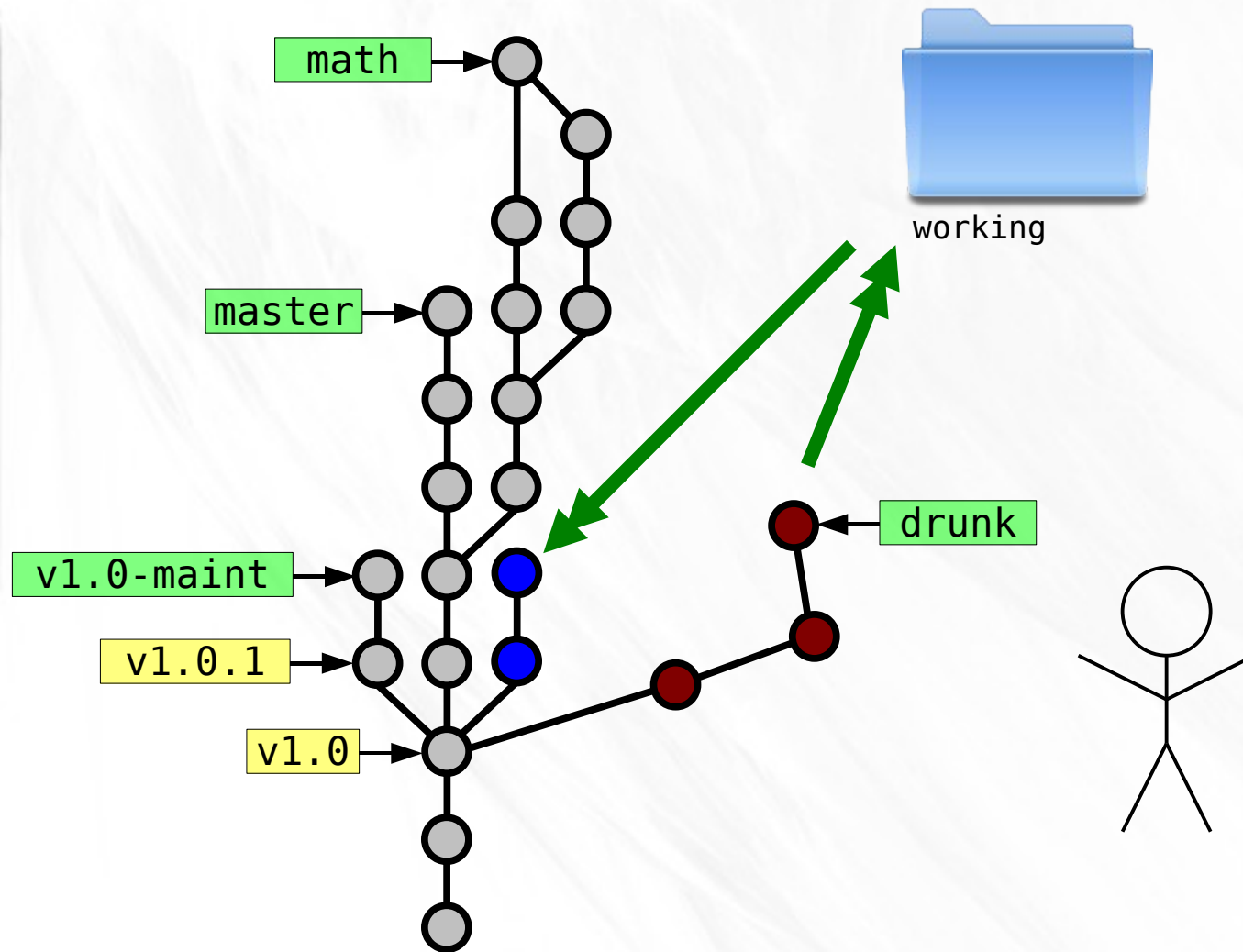
Rewriting History



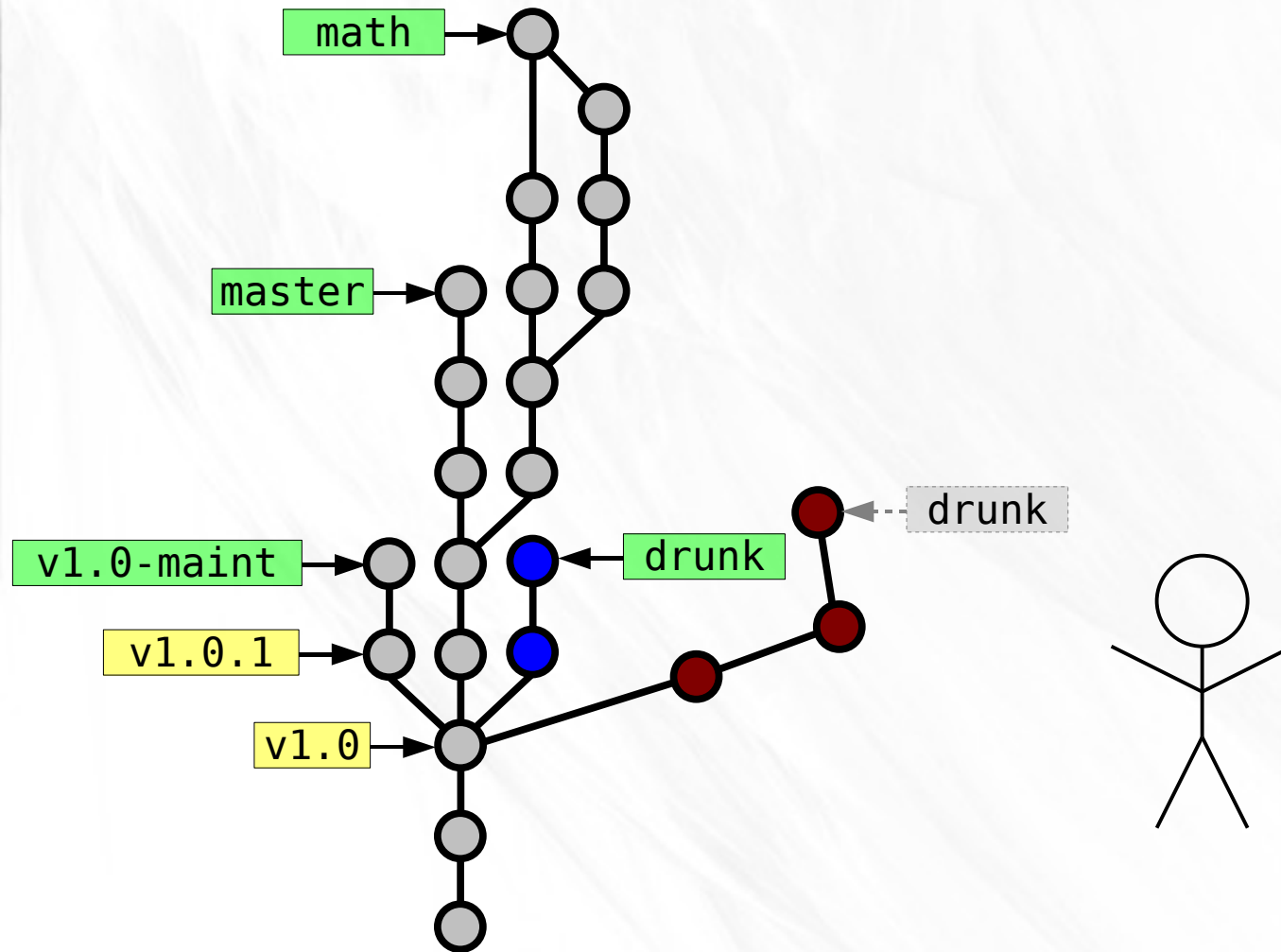
Rewriting History



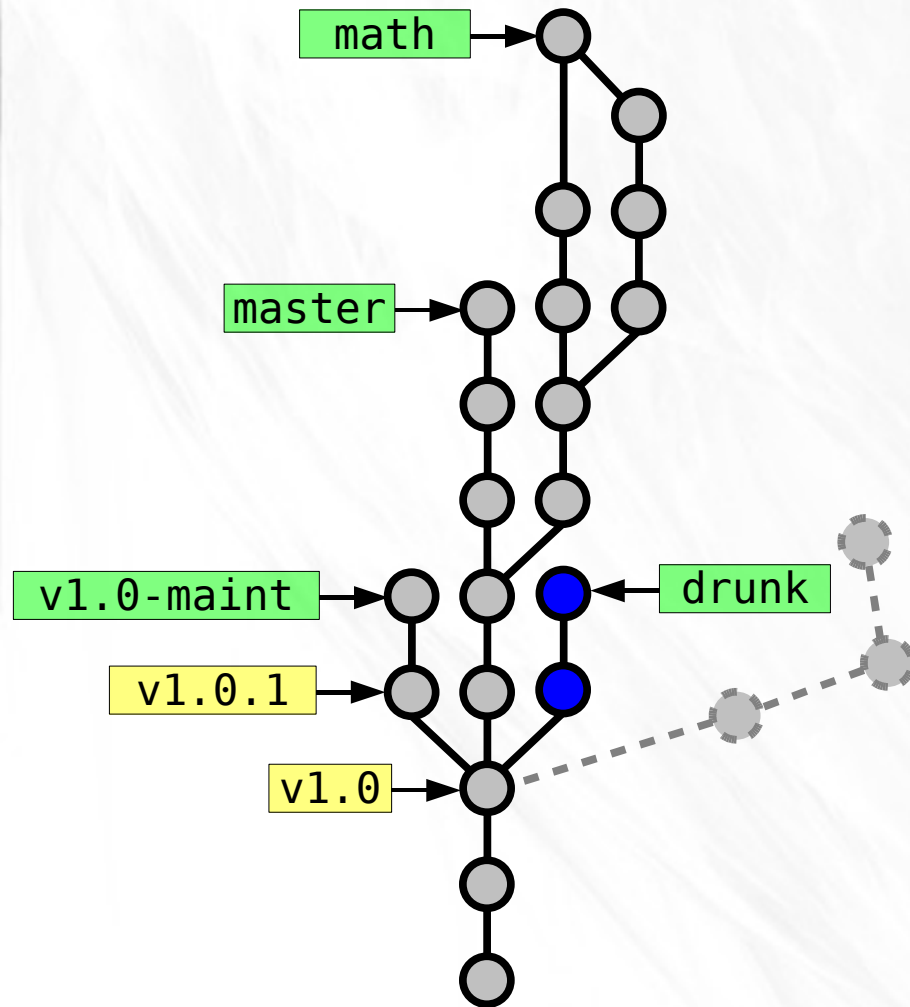
Rewriting History



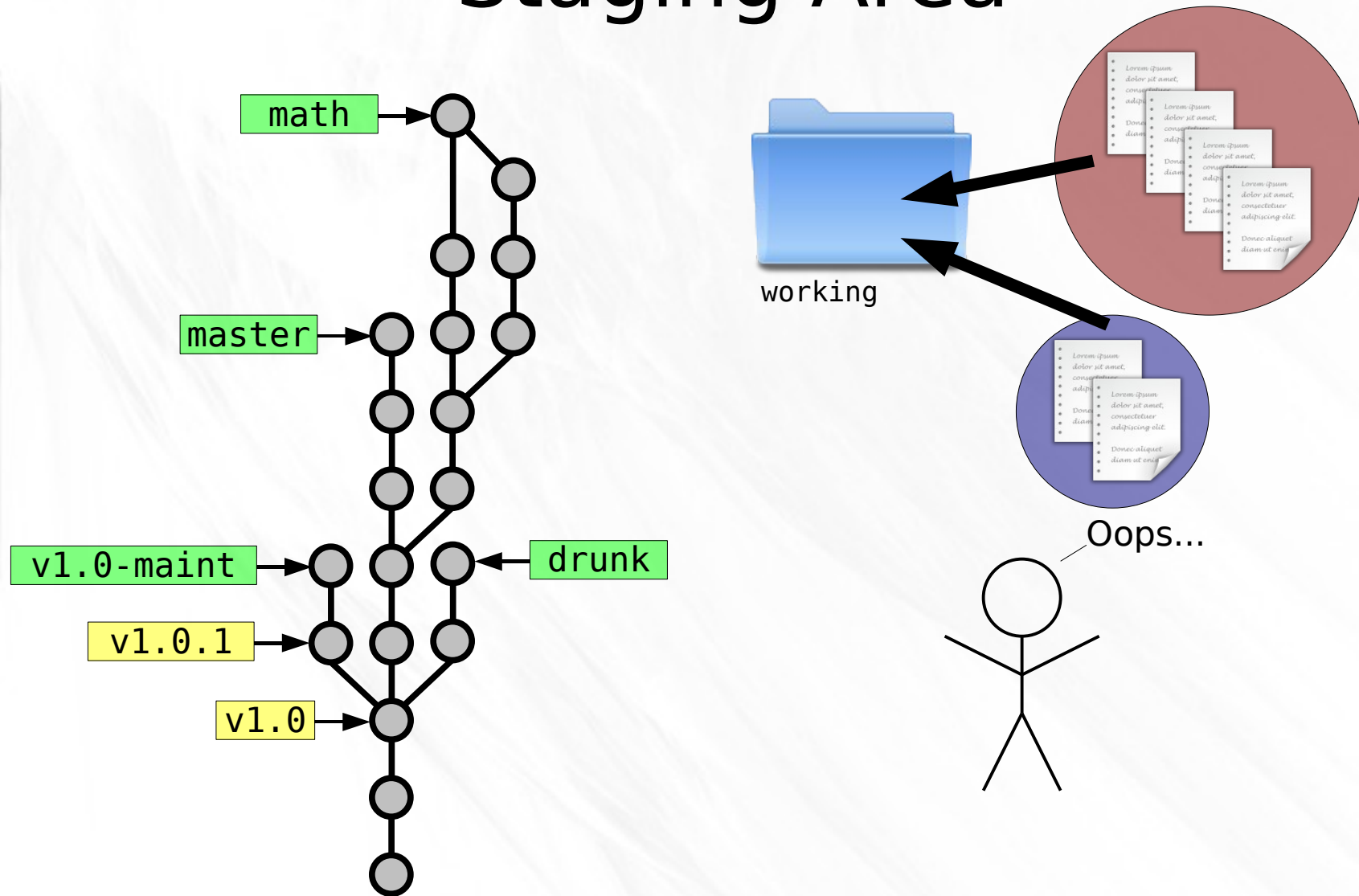
Rewriting History



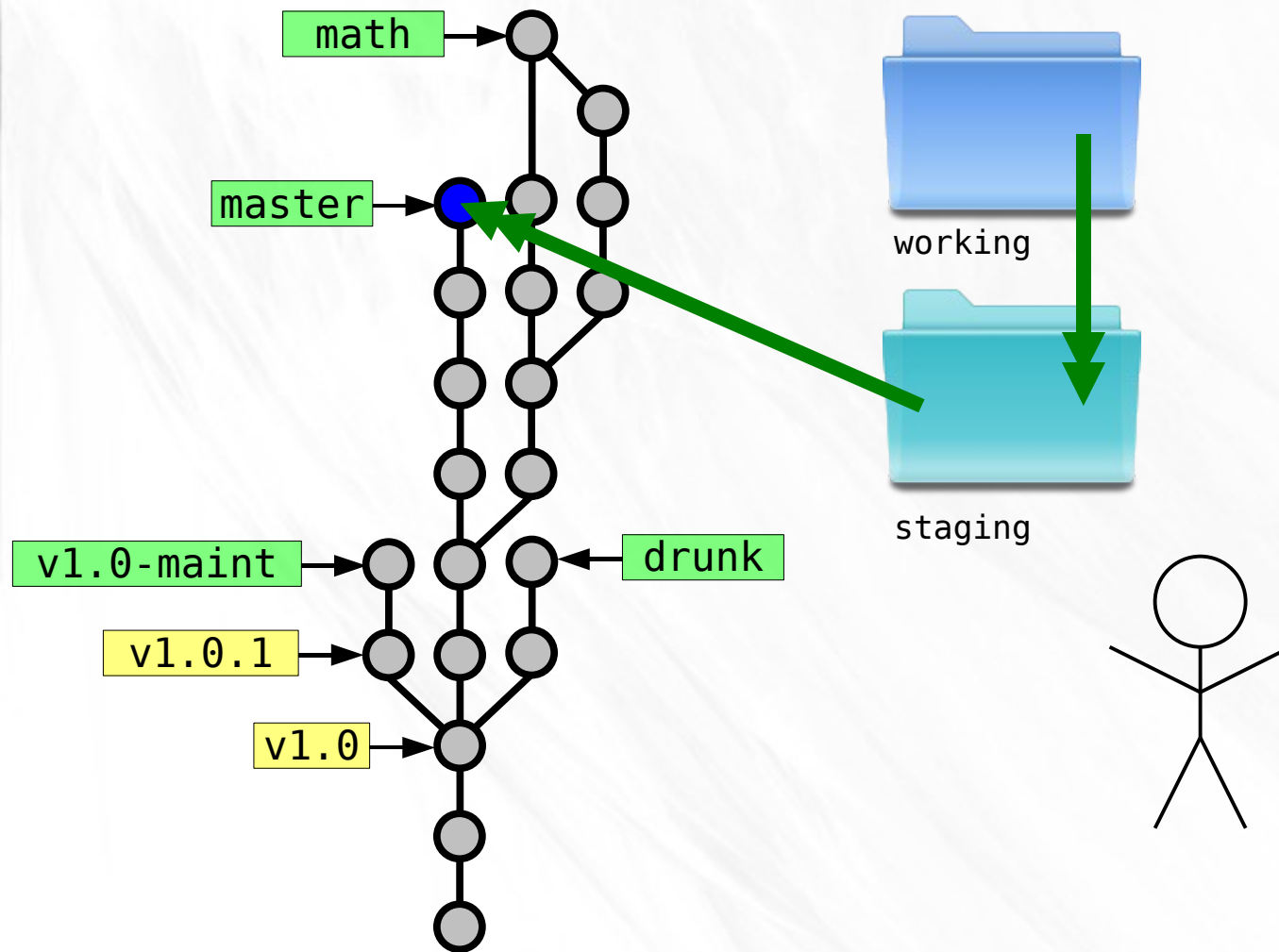
Rewriting History



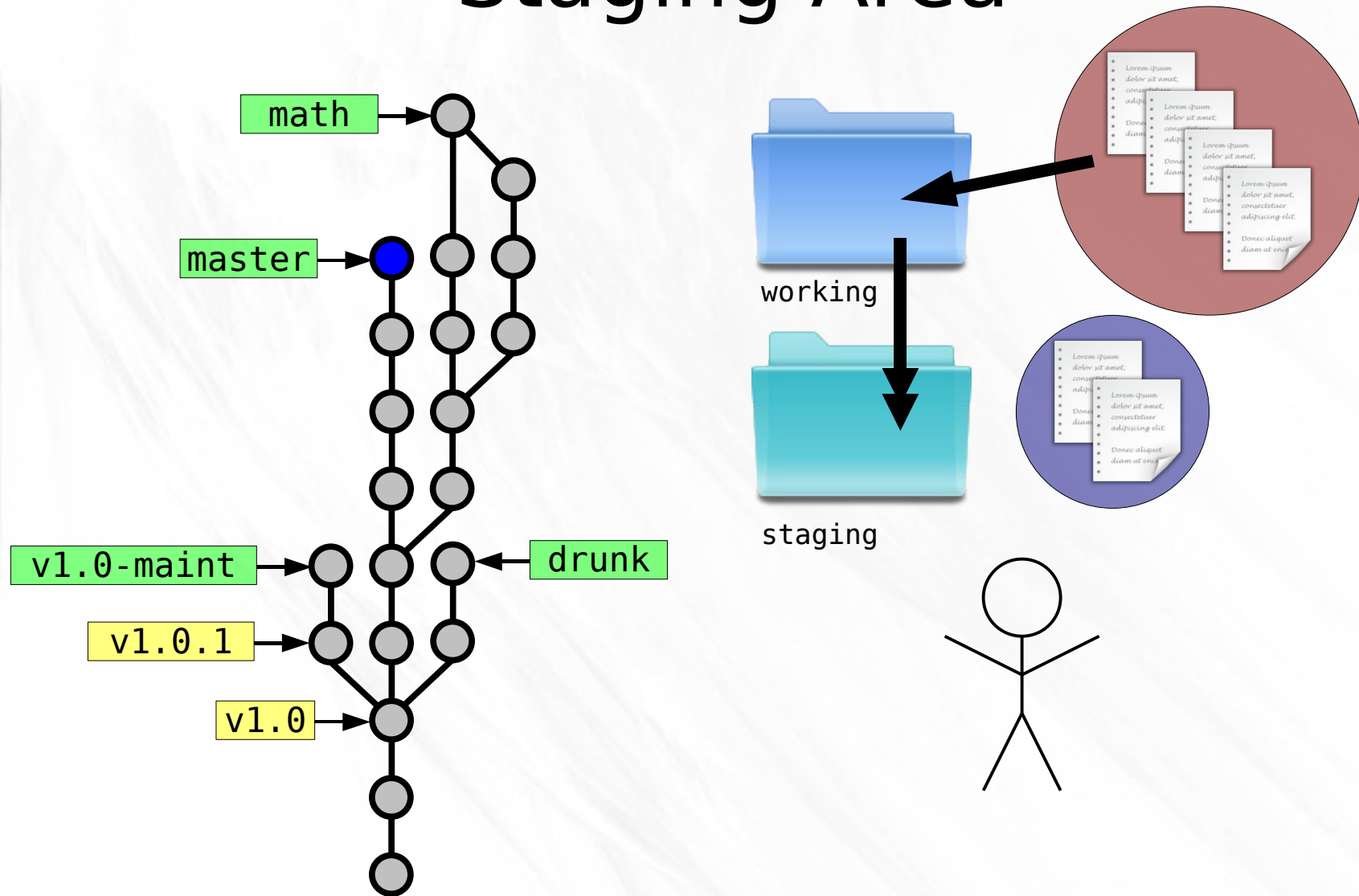
Staging Area



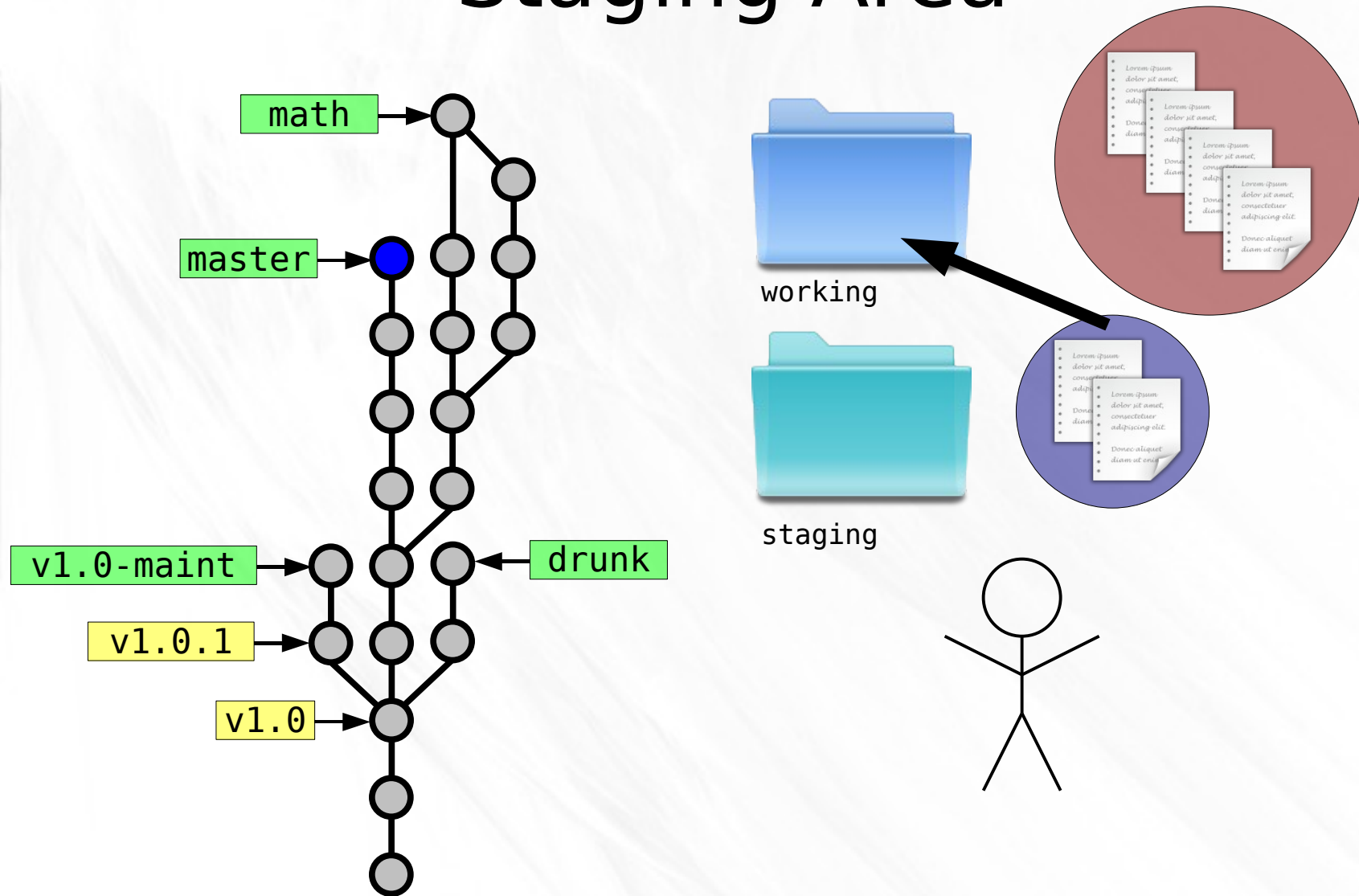
Staging Area



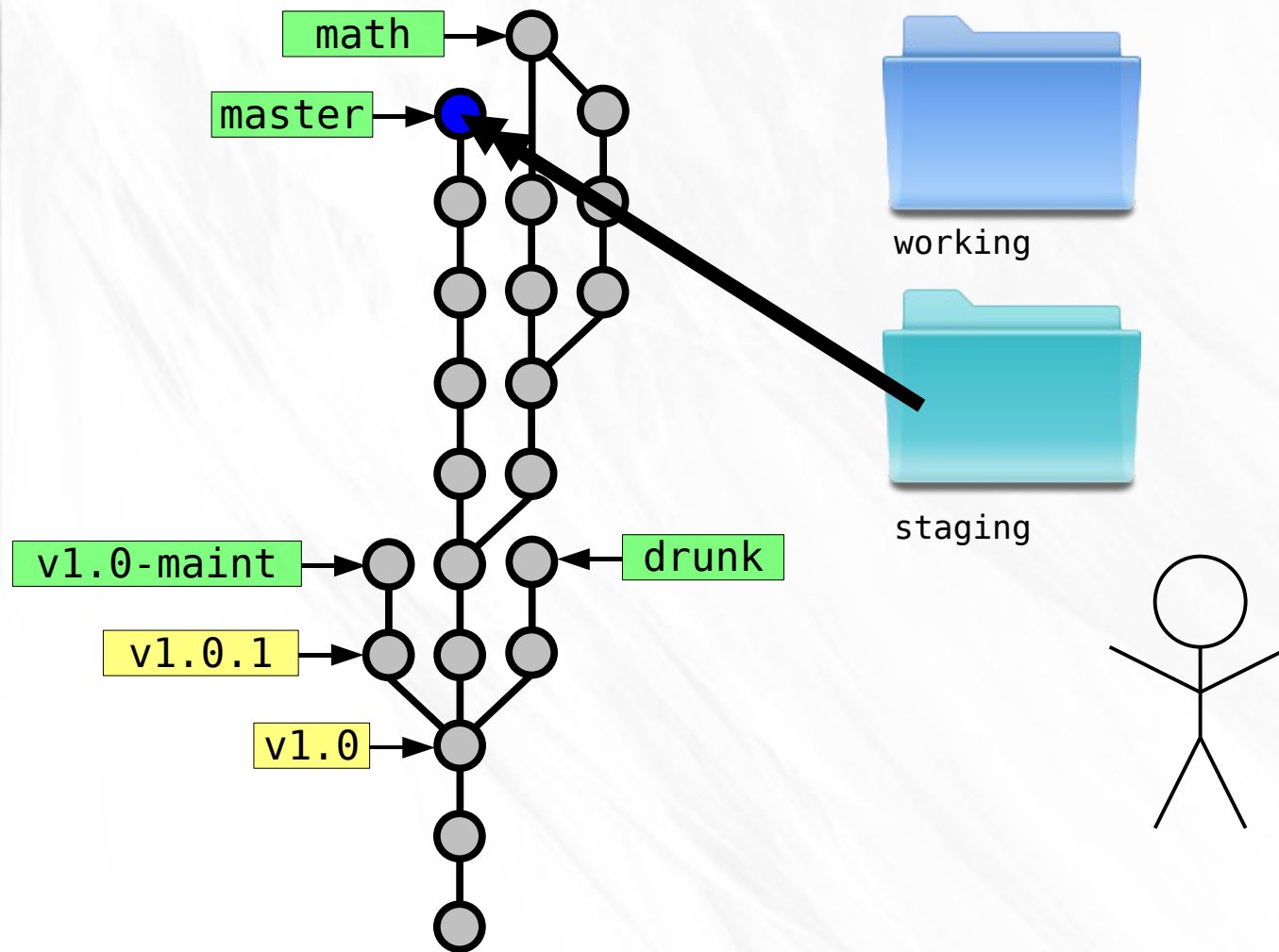
Staging Area



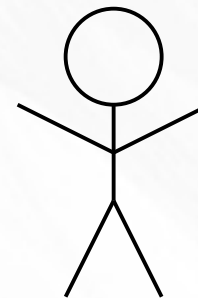
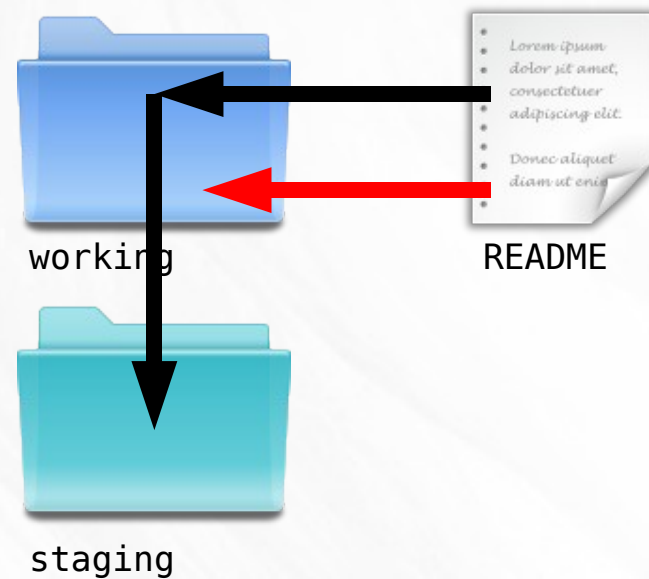
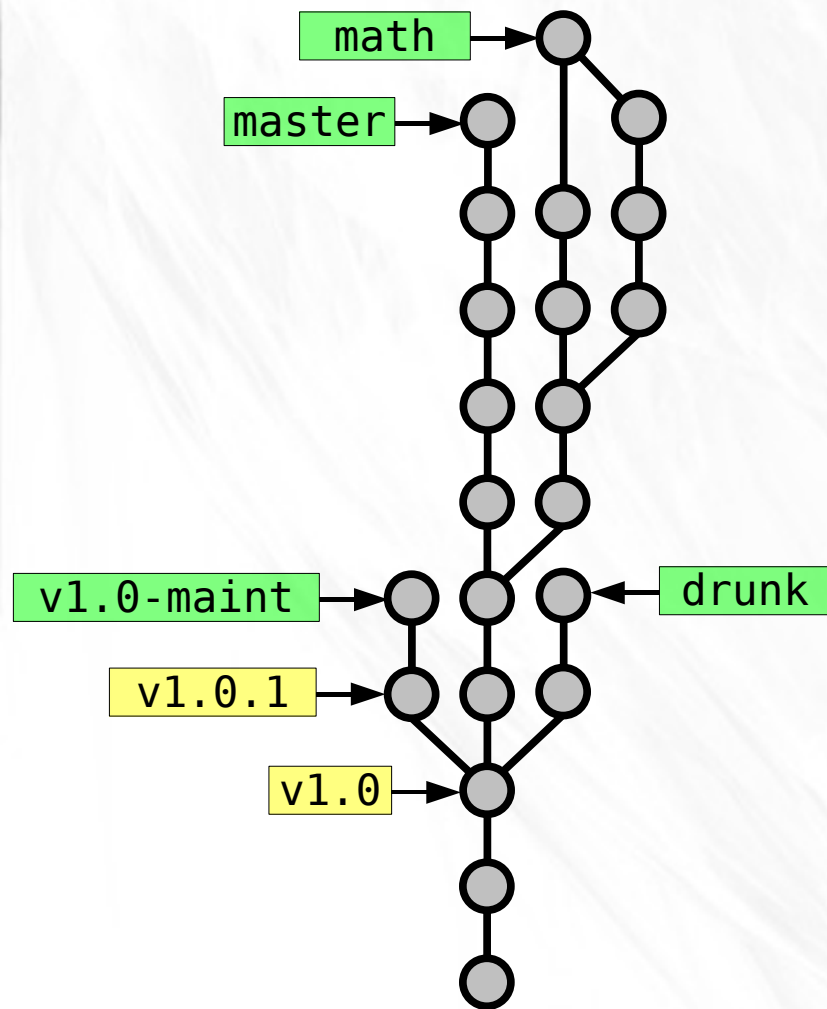
Staging Area



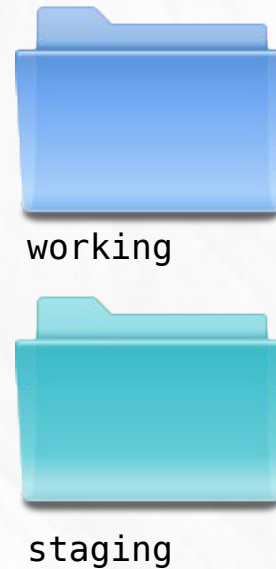
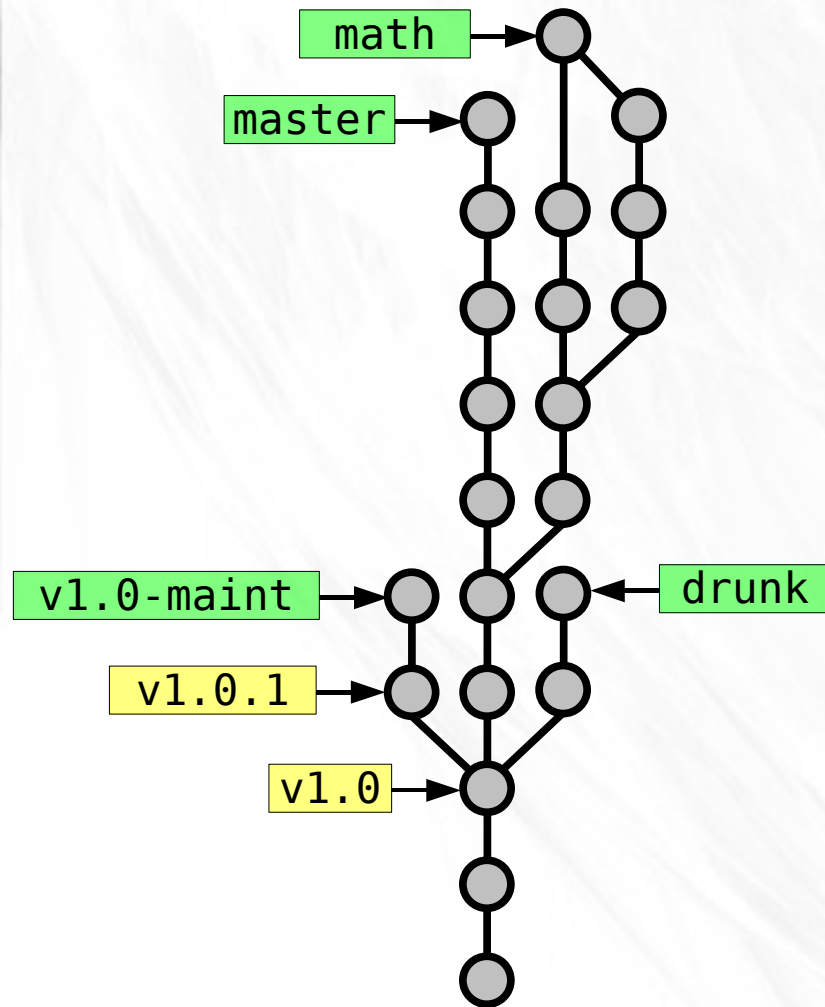
Staging Area



Staging Area

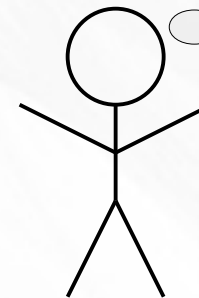


Diffs

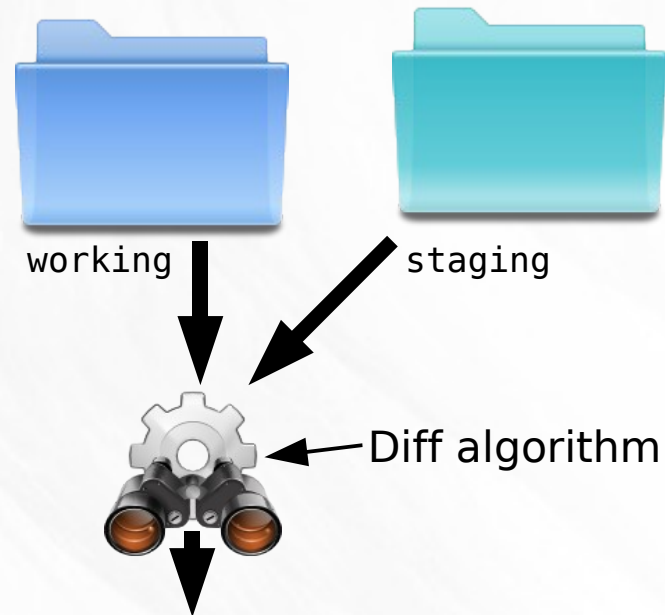
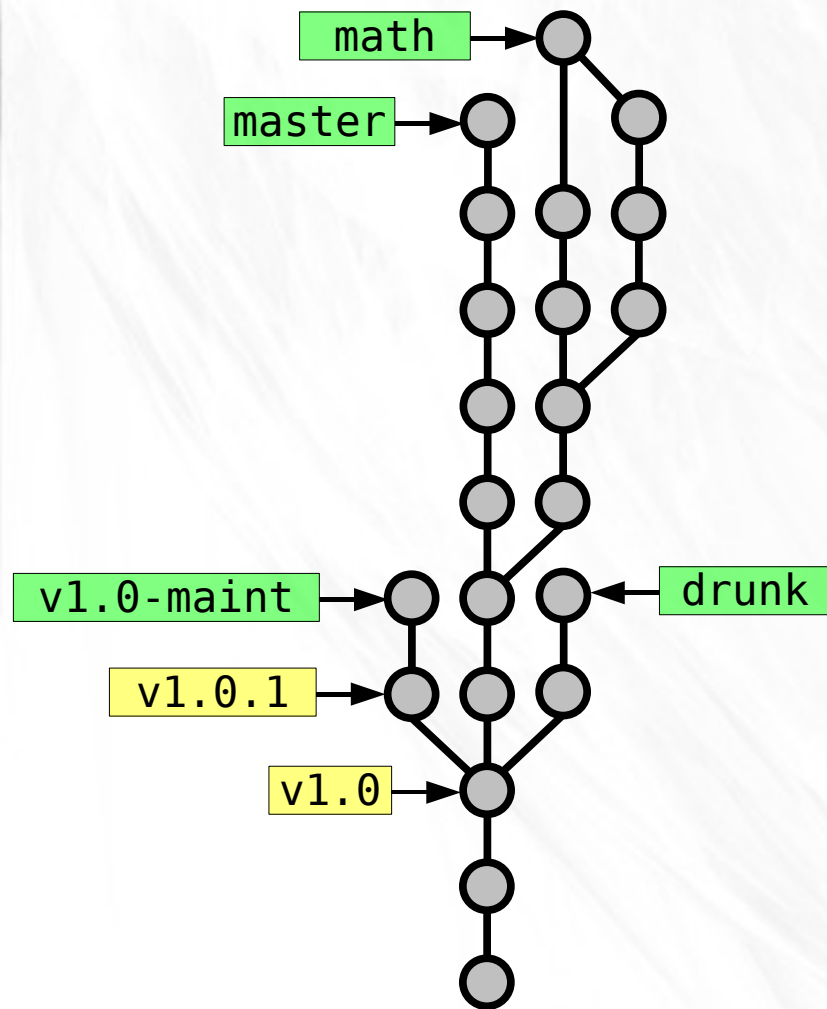


What are the changes?

- working vs. staging
- working vs. snapshot X
- staging vs. snapshot X
- snapshot X vs. snapshot Y

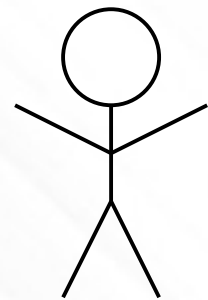


Diffs

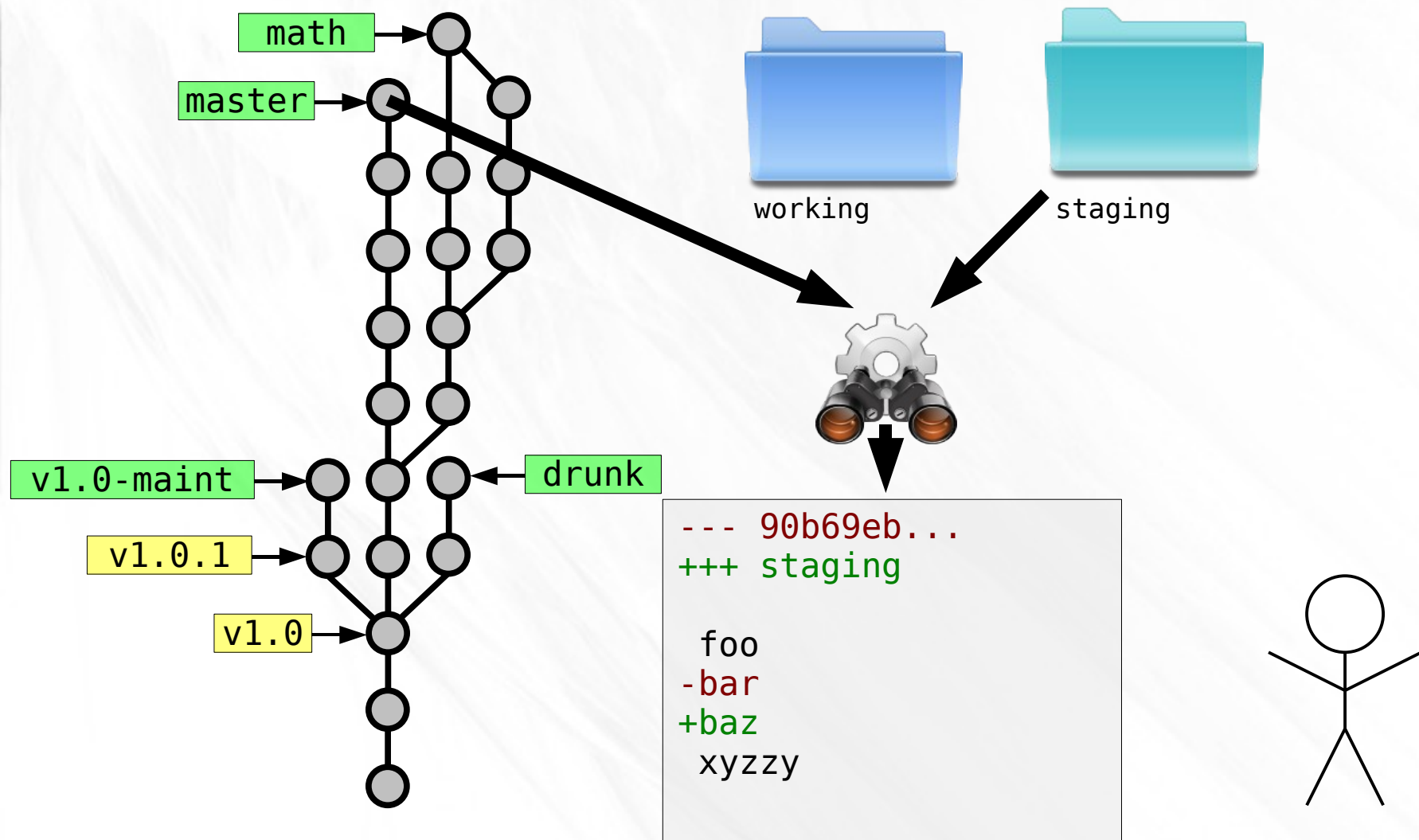


```
--- staging  
+++ working
```

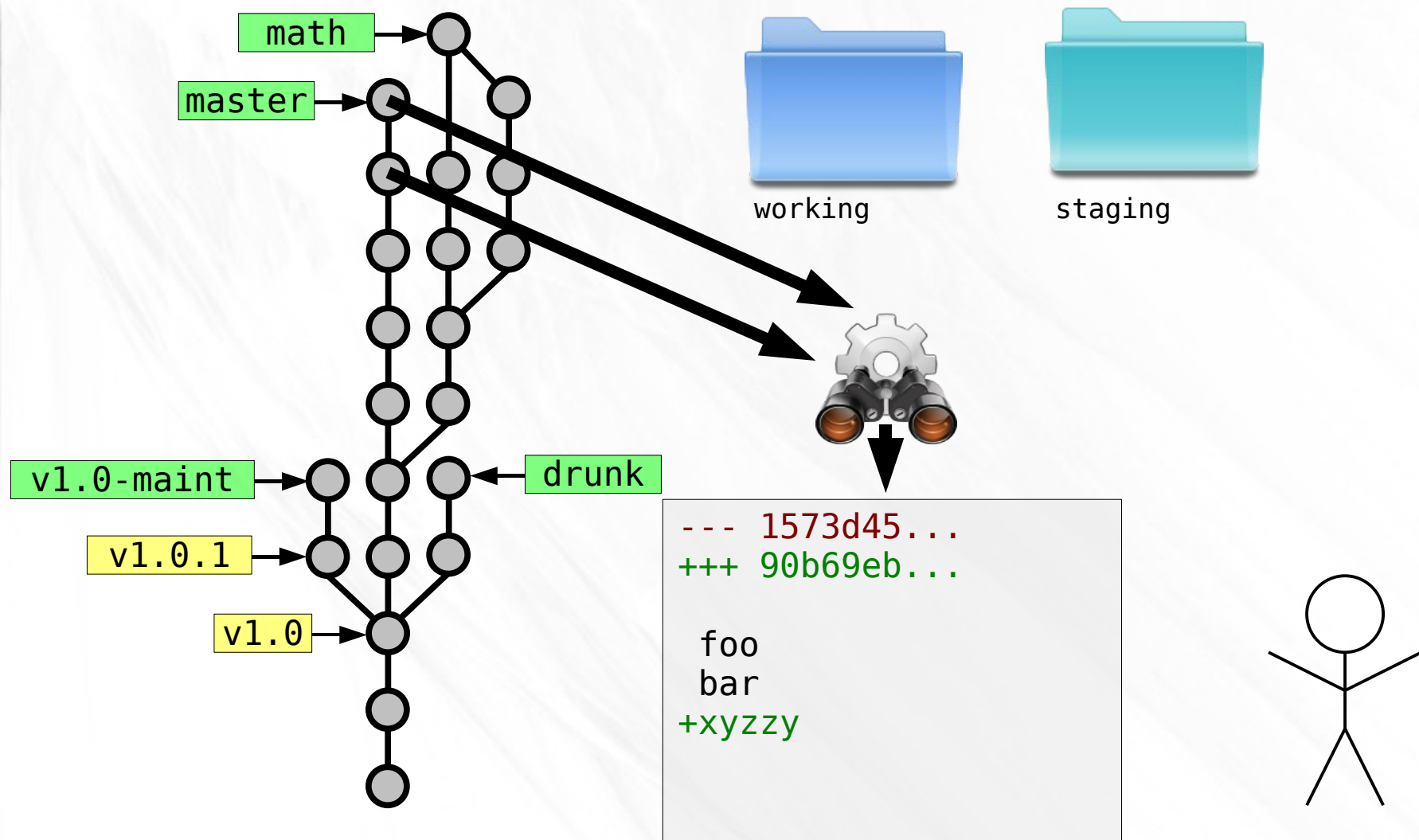
```
foo  
-baz  
+bazzle  
xyzy
```



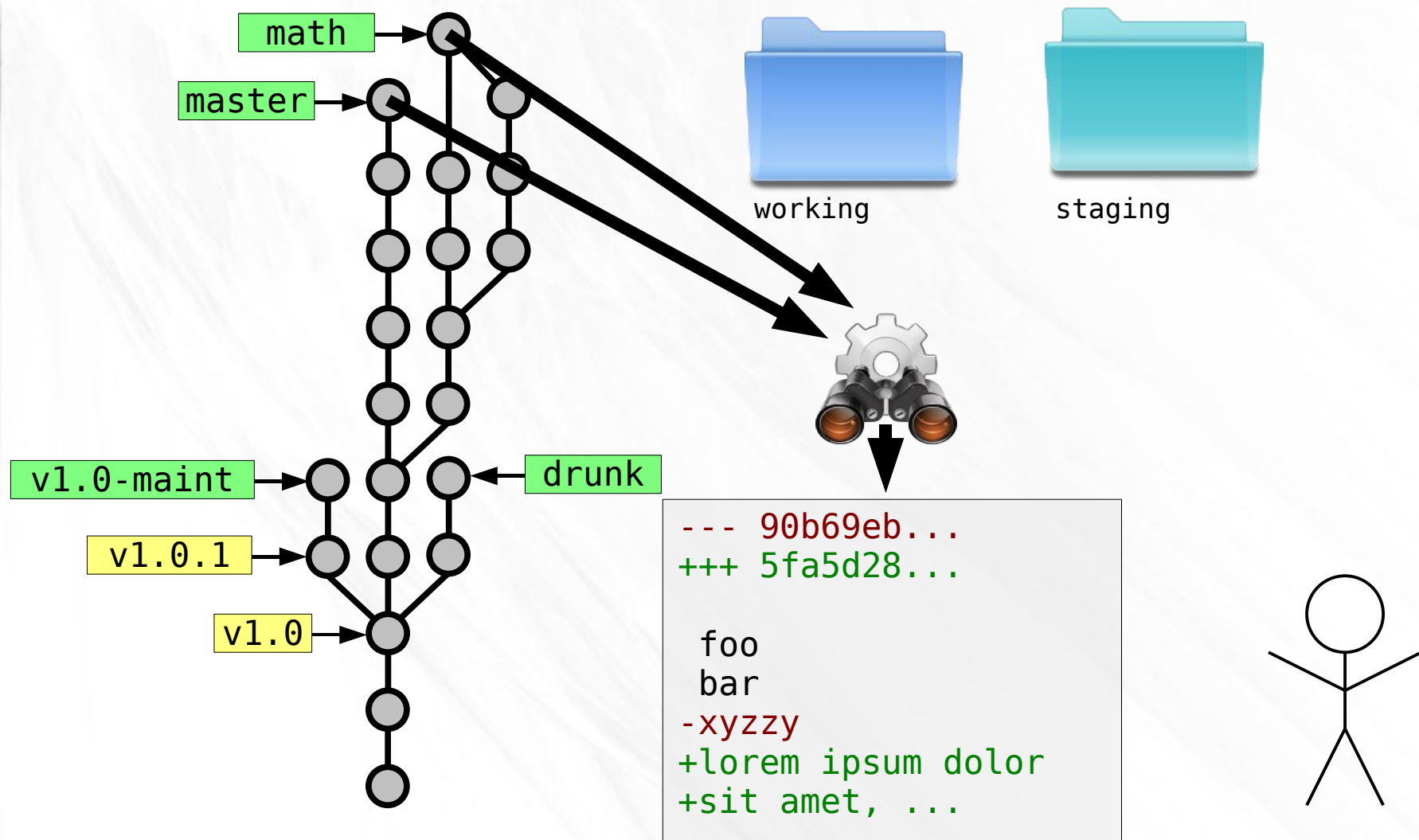
Diffs



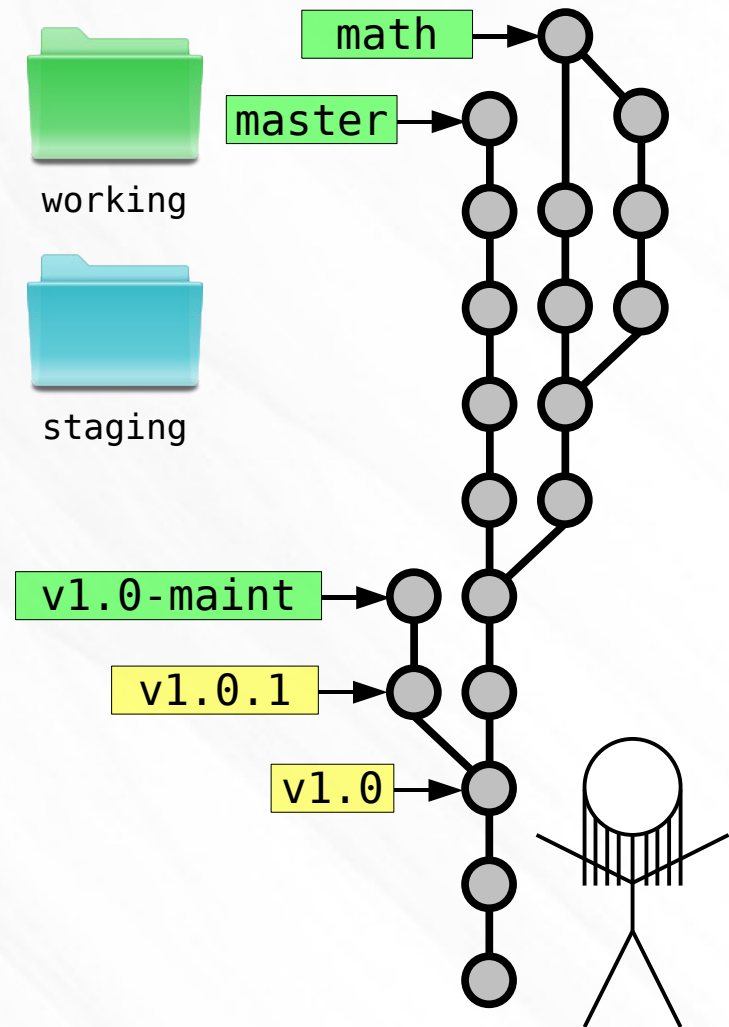
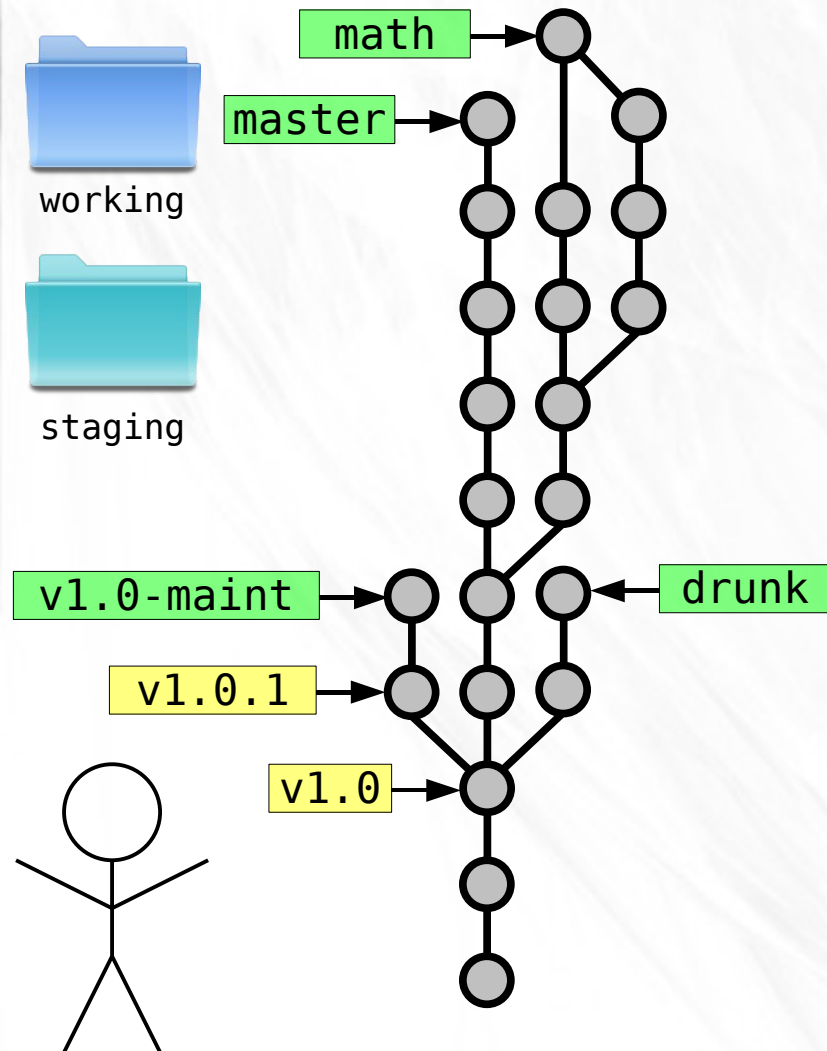
Diffs



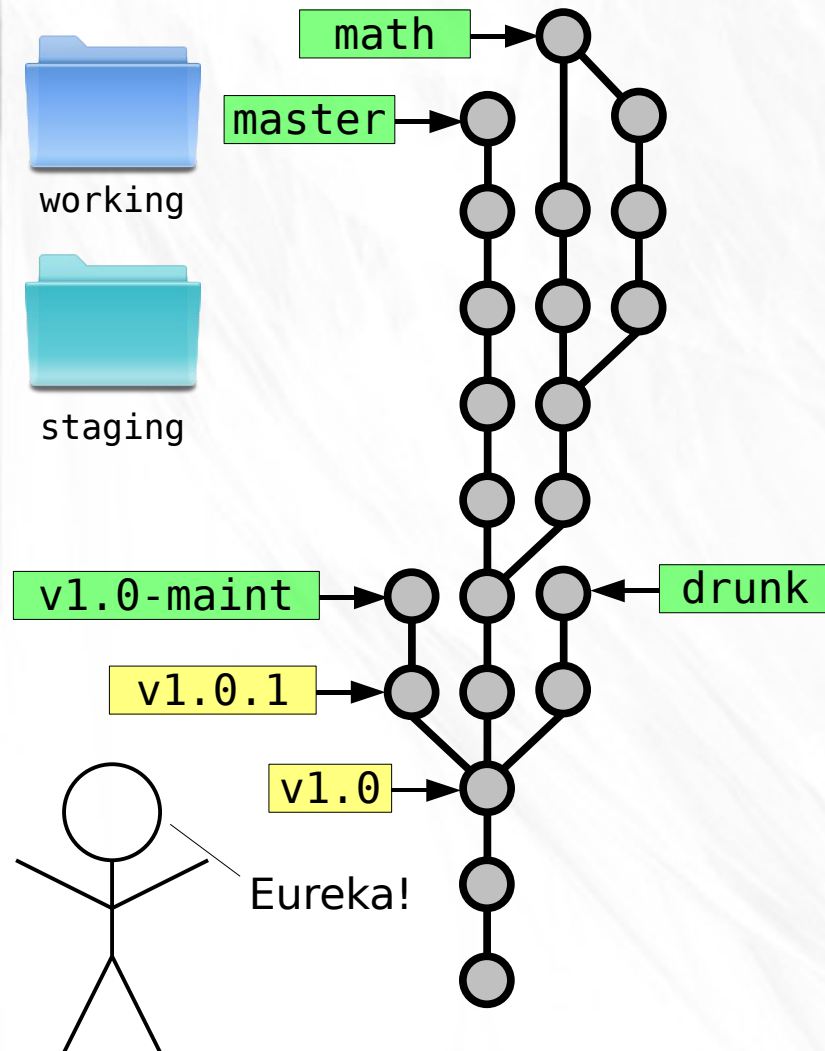
Diffs



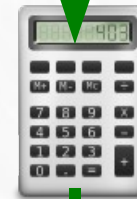
Eliminating Duplication



Eliminating Duplication



• Lorem ipsum
• dolor sit amet,
• consectetur
• adipiscing elit.
• Donec aliquet
• diam ut enim

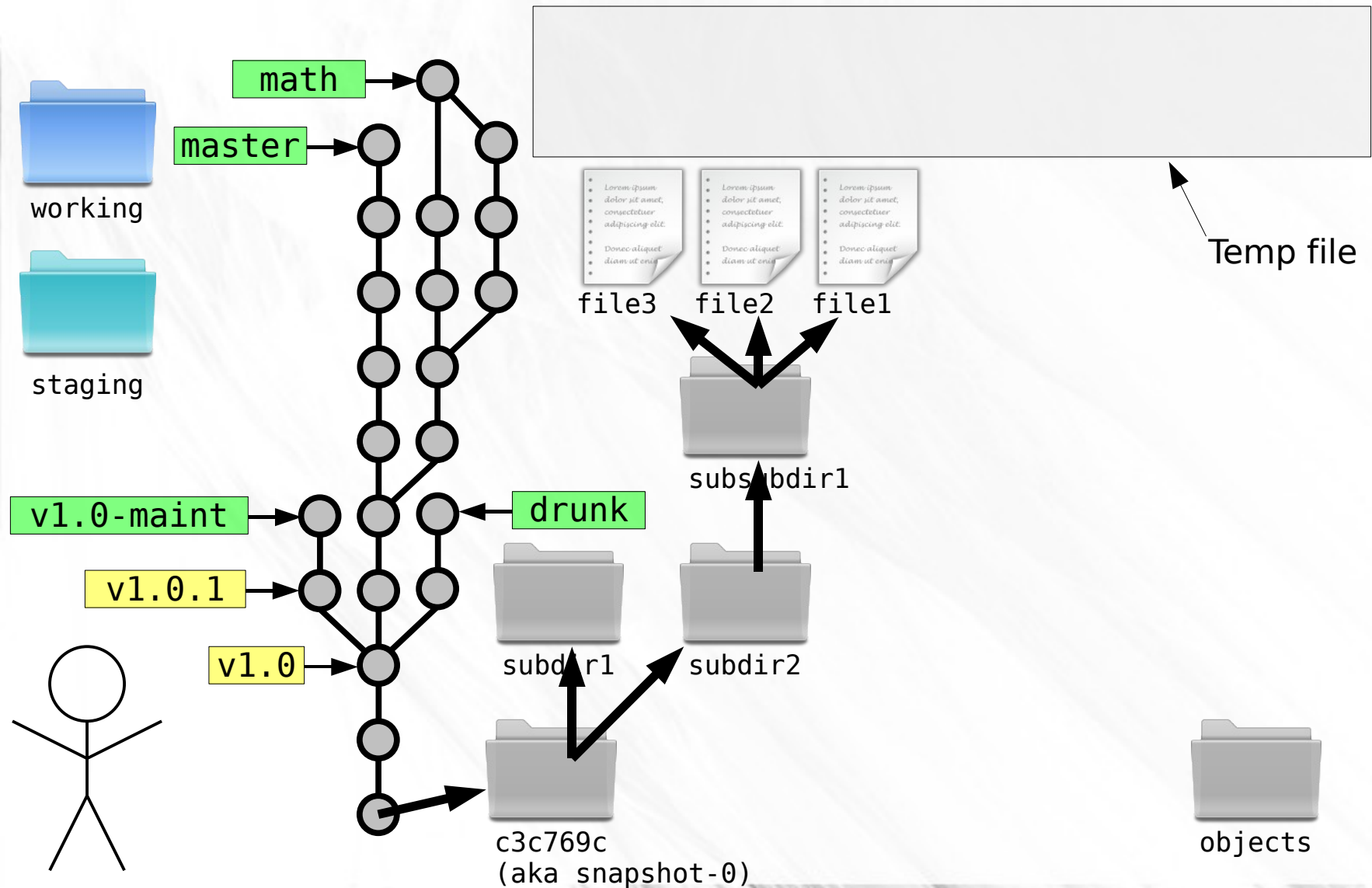


SHA1

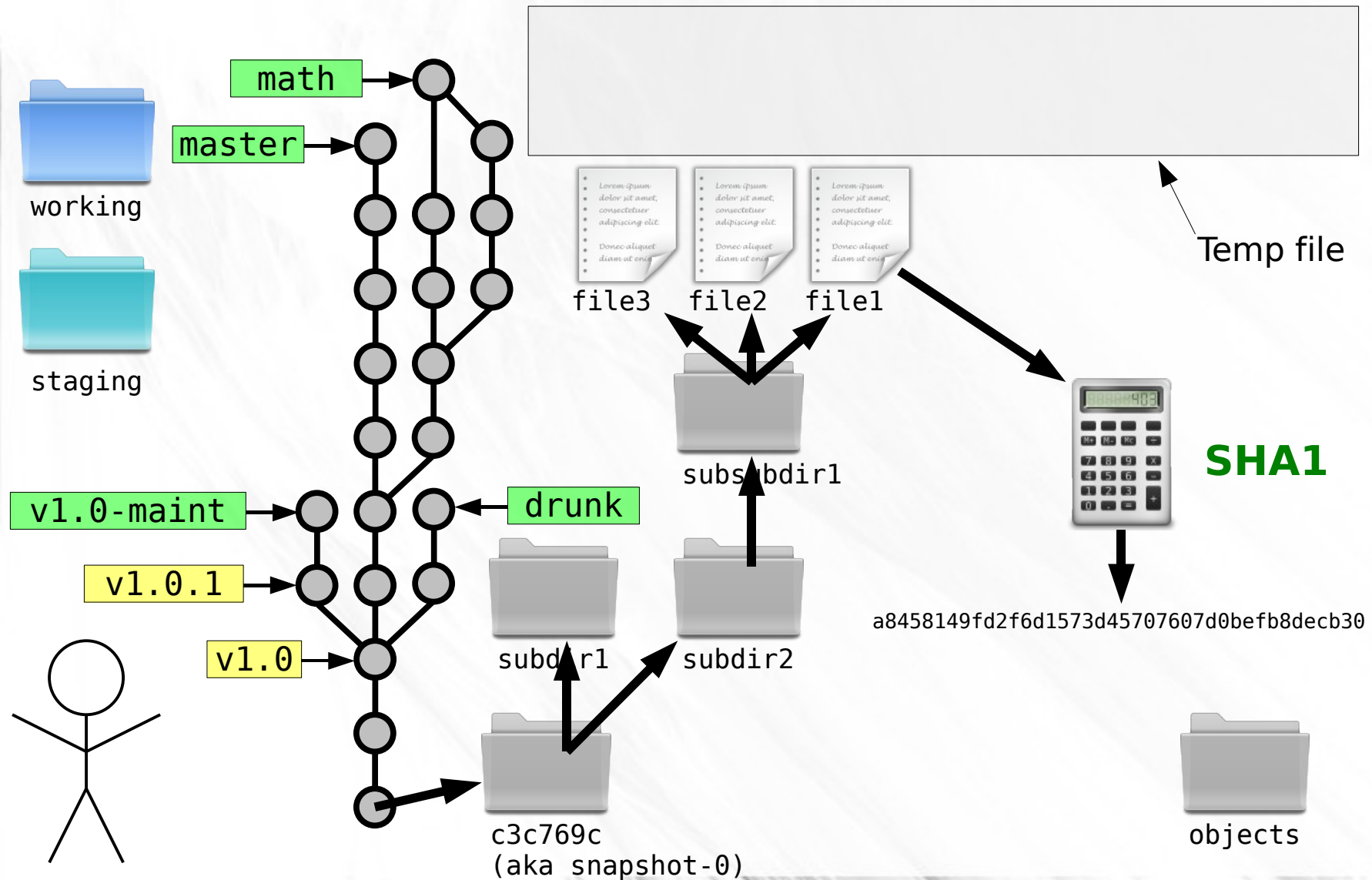
2804133755c3ed396d162028c7b30a1cbcfecded



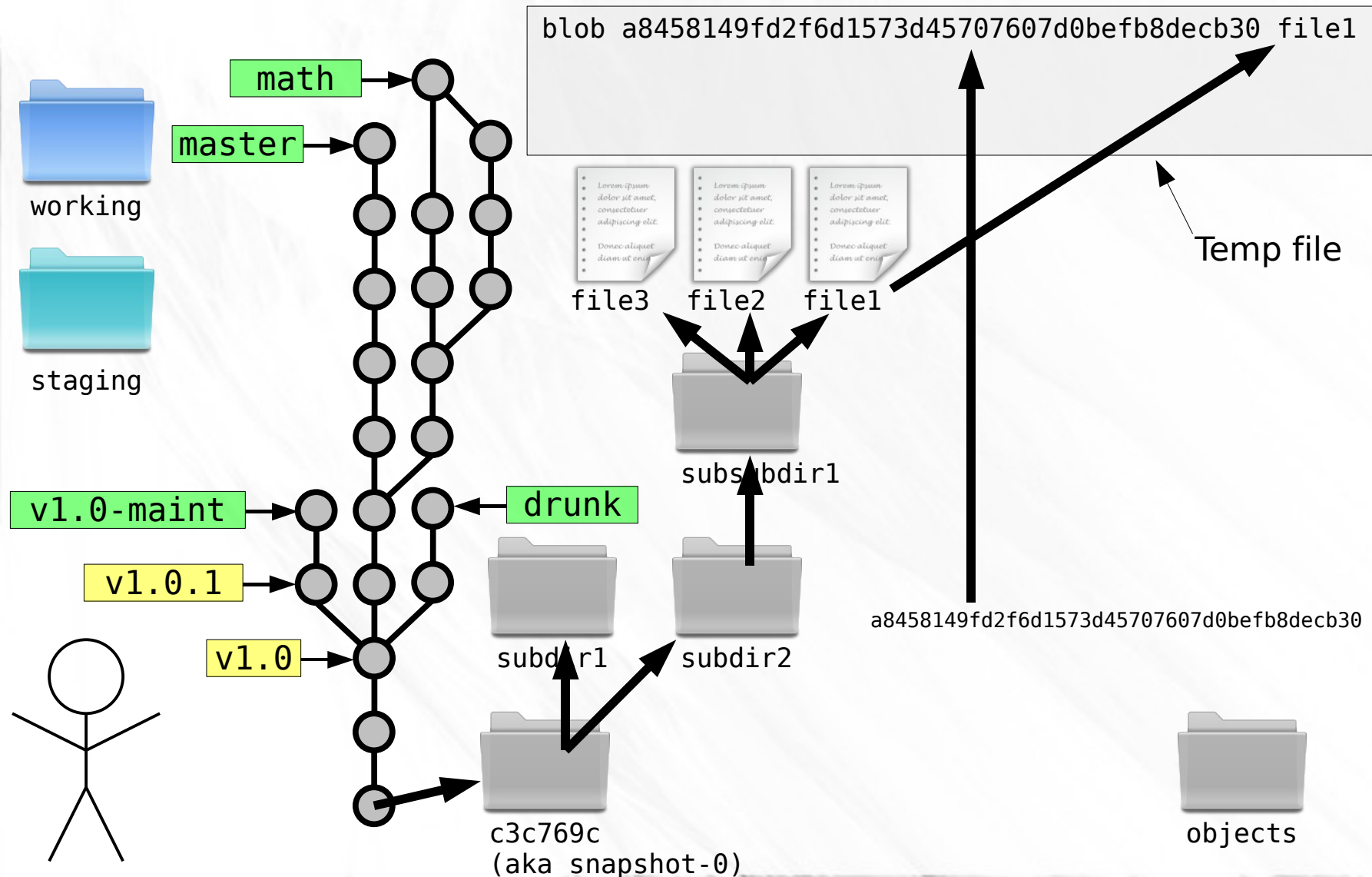
Eliminating Duplication



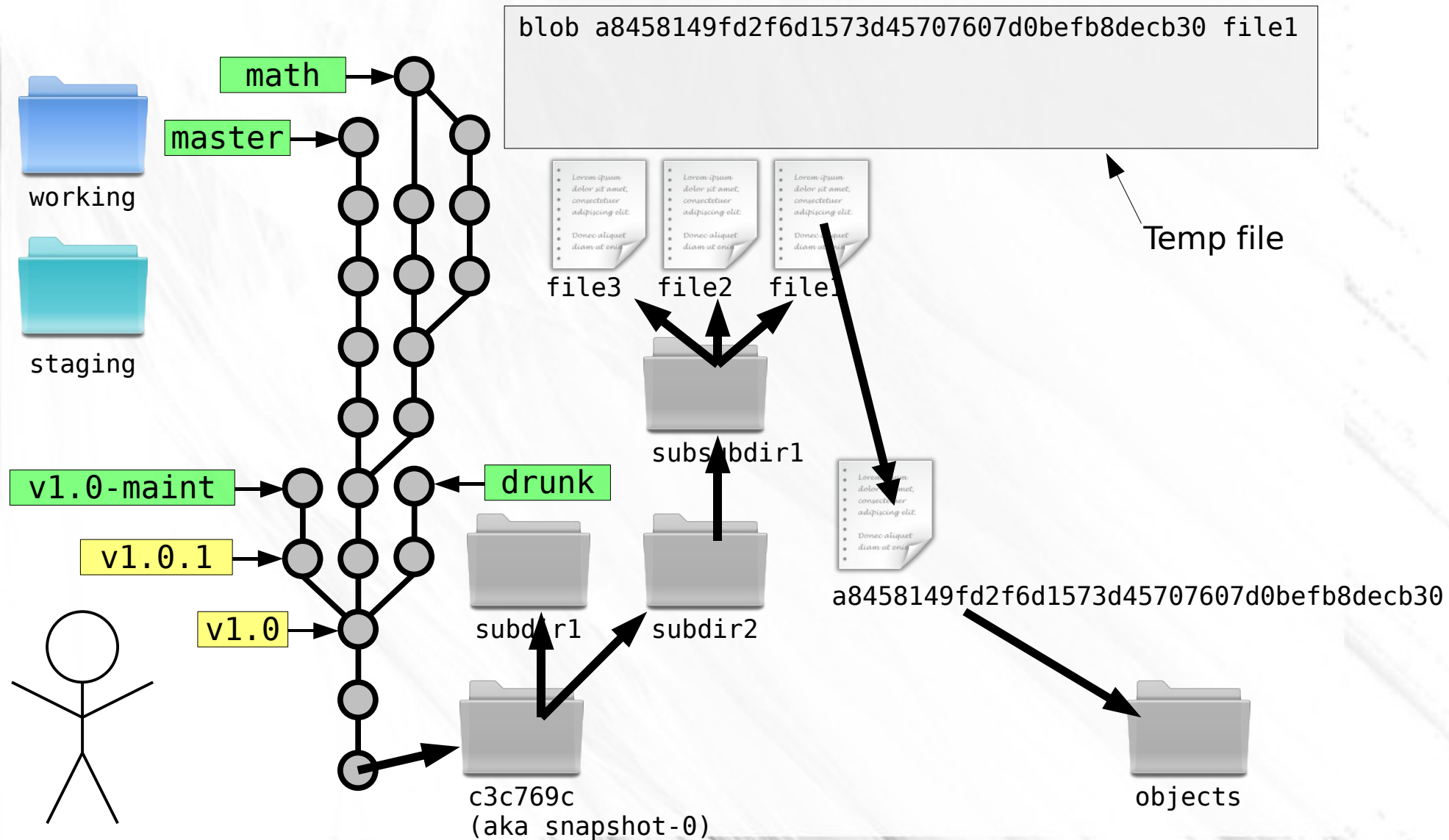
Eliminating Duplication



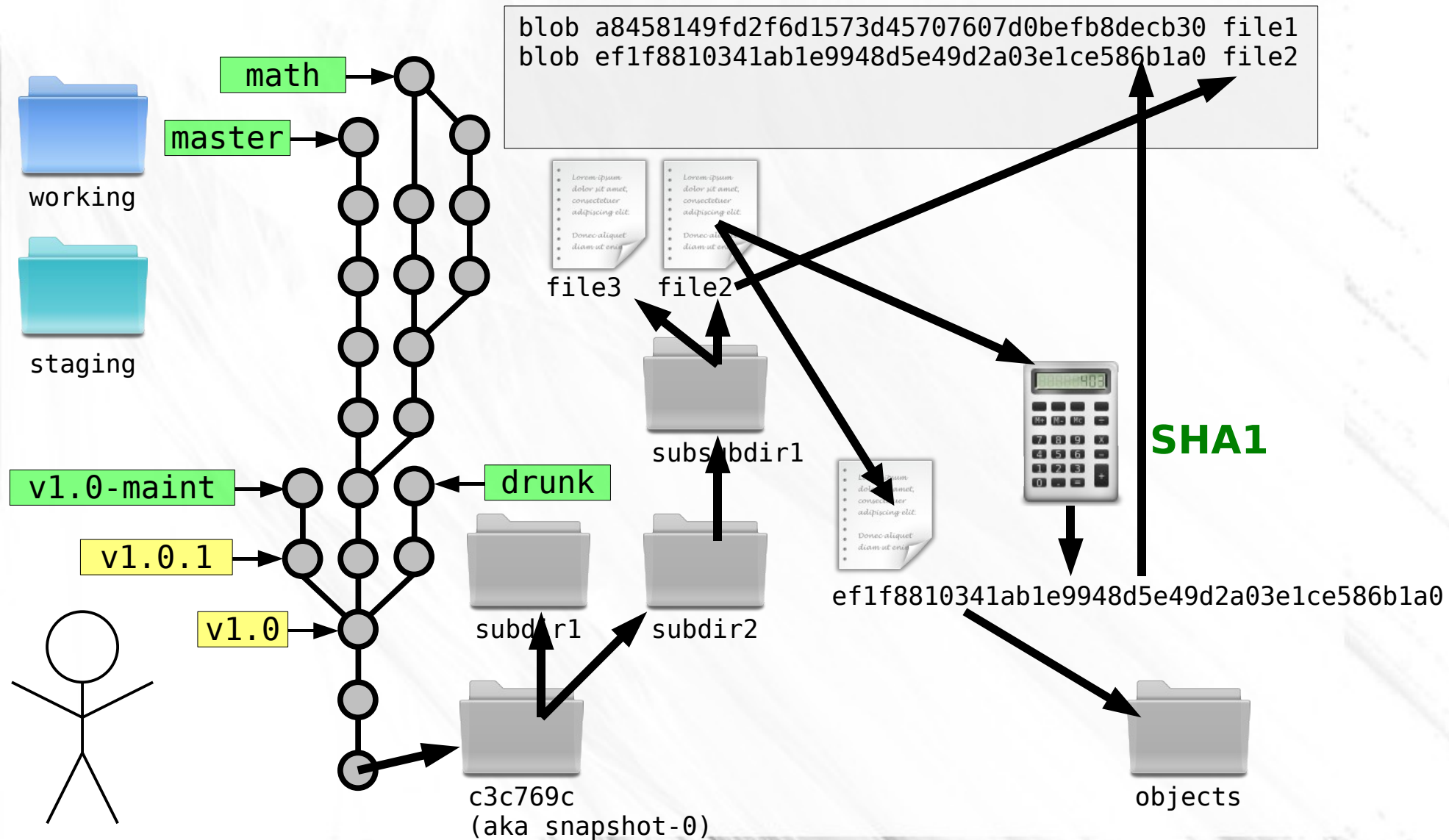
Eliminating Duplication



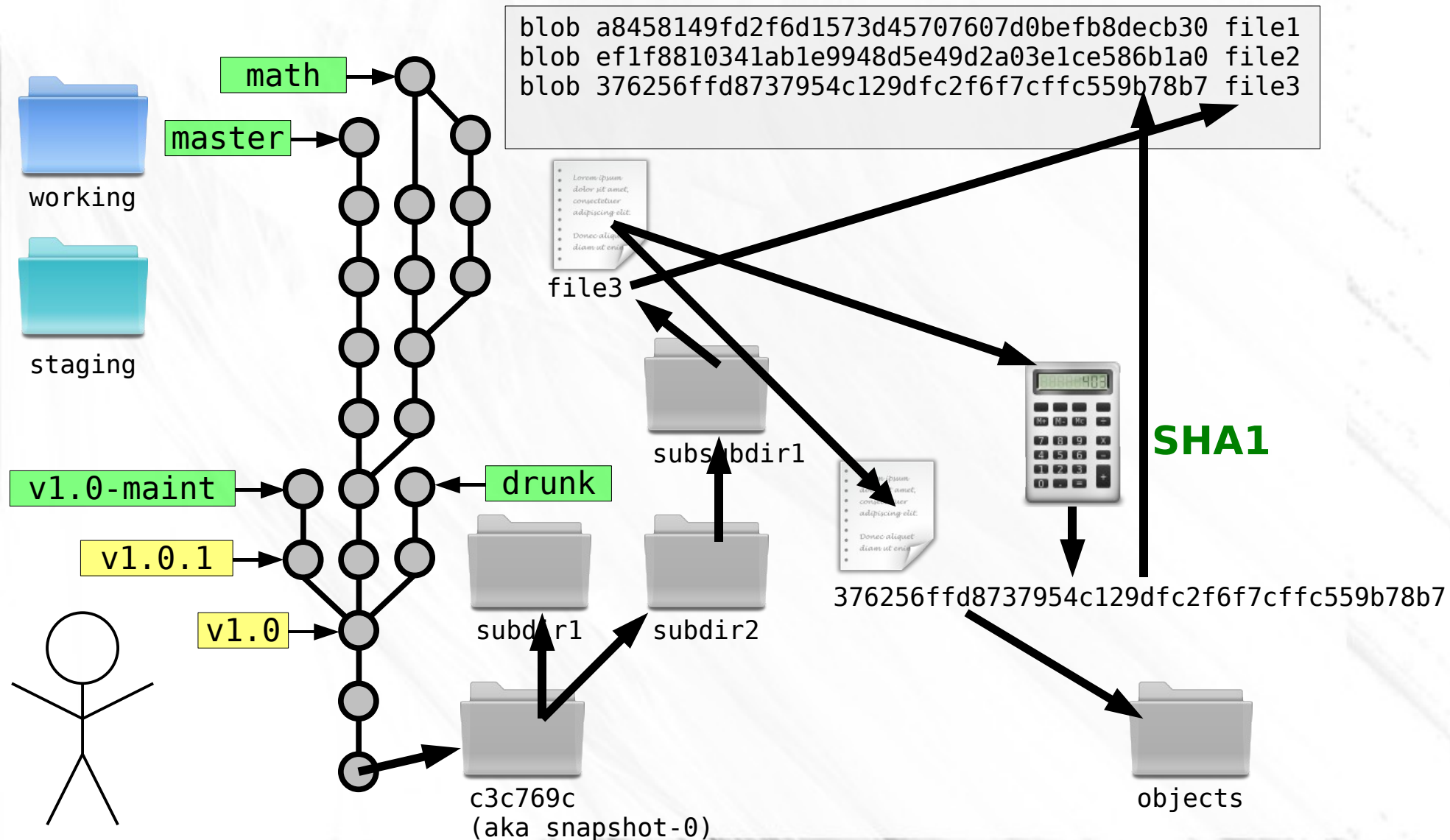
Eliminating Duplication



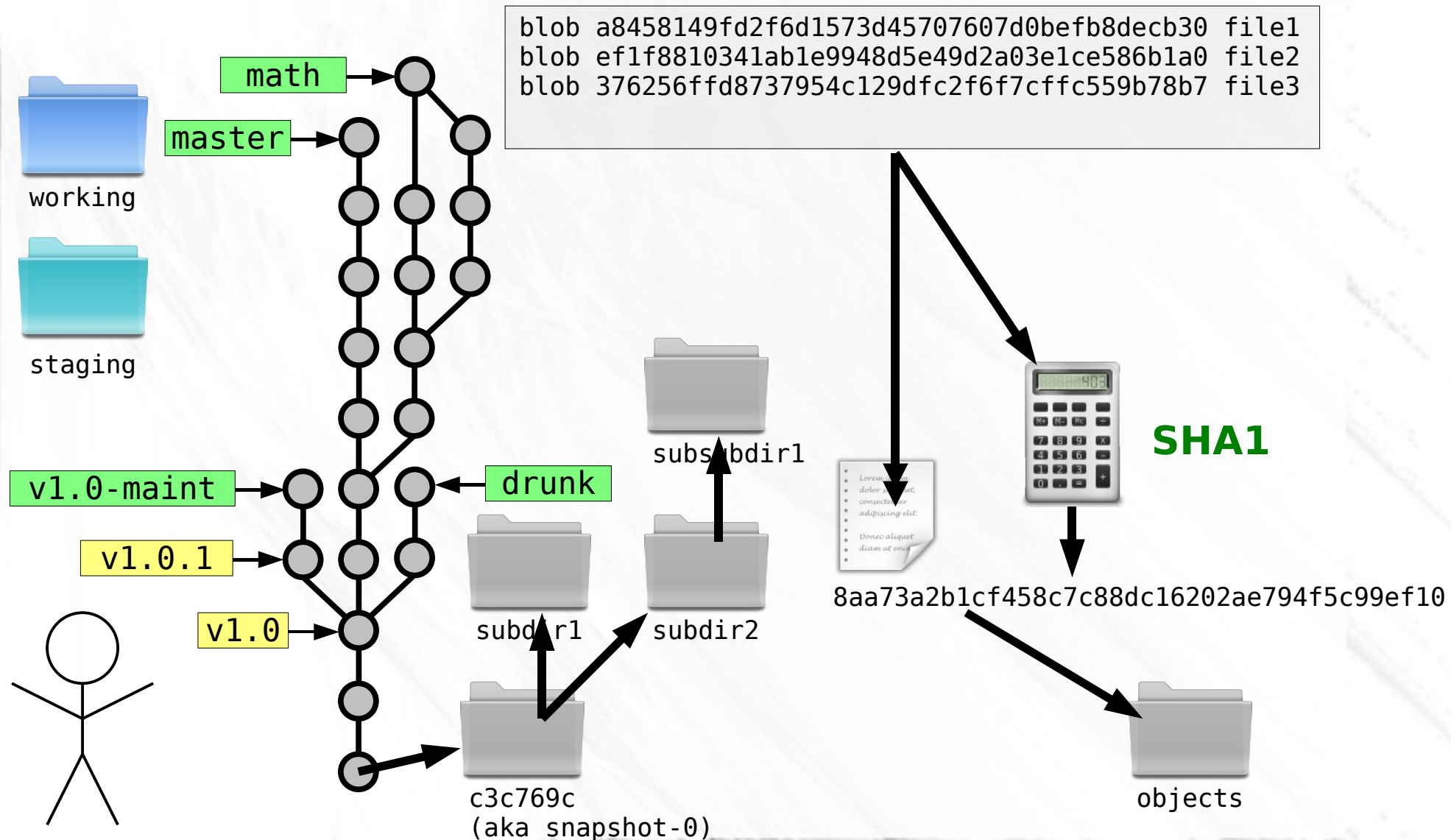
Eliminating Duplication



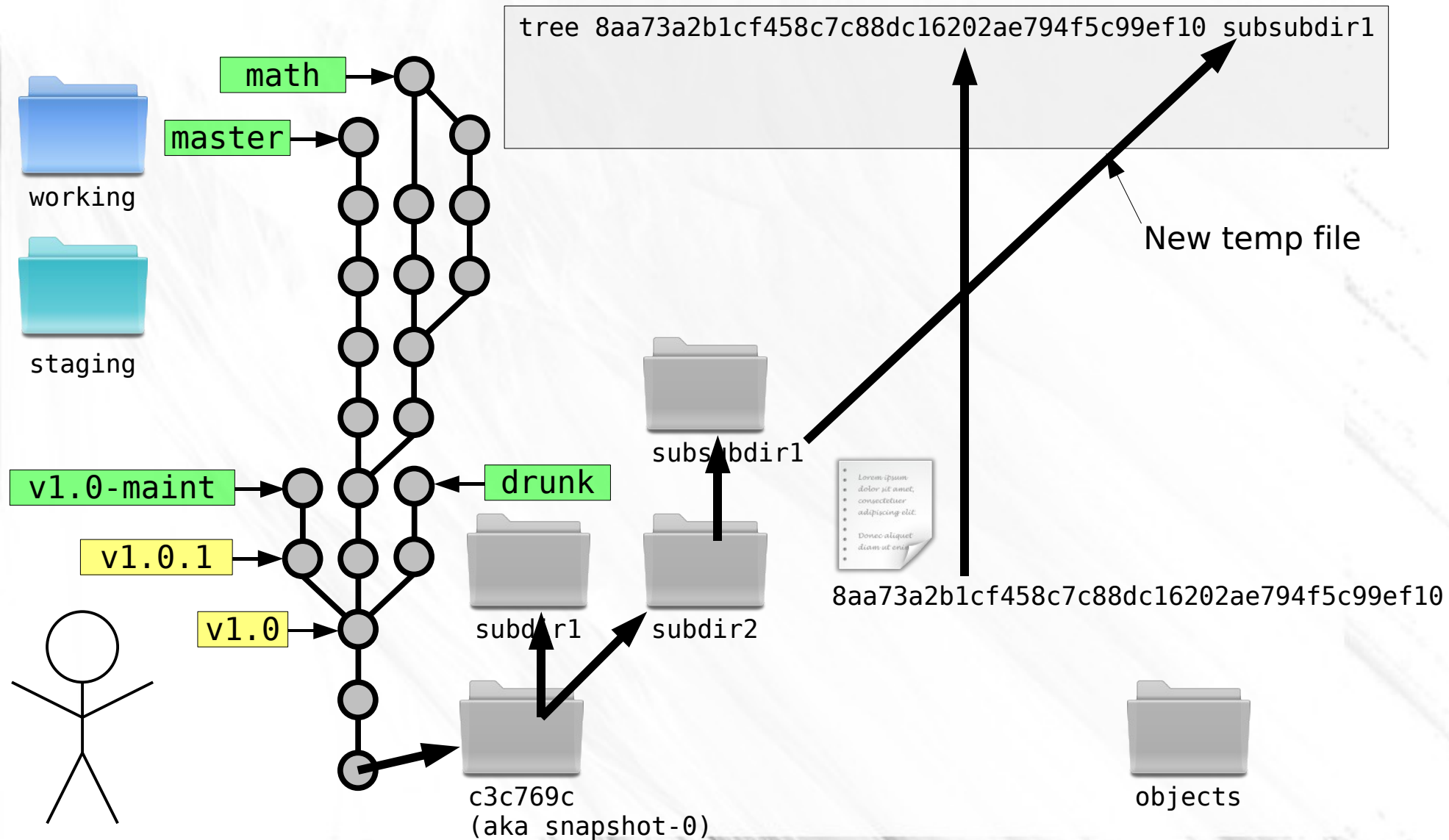
Eliminating Duplication



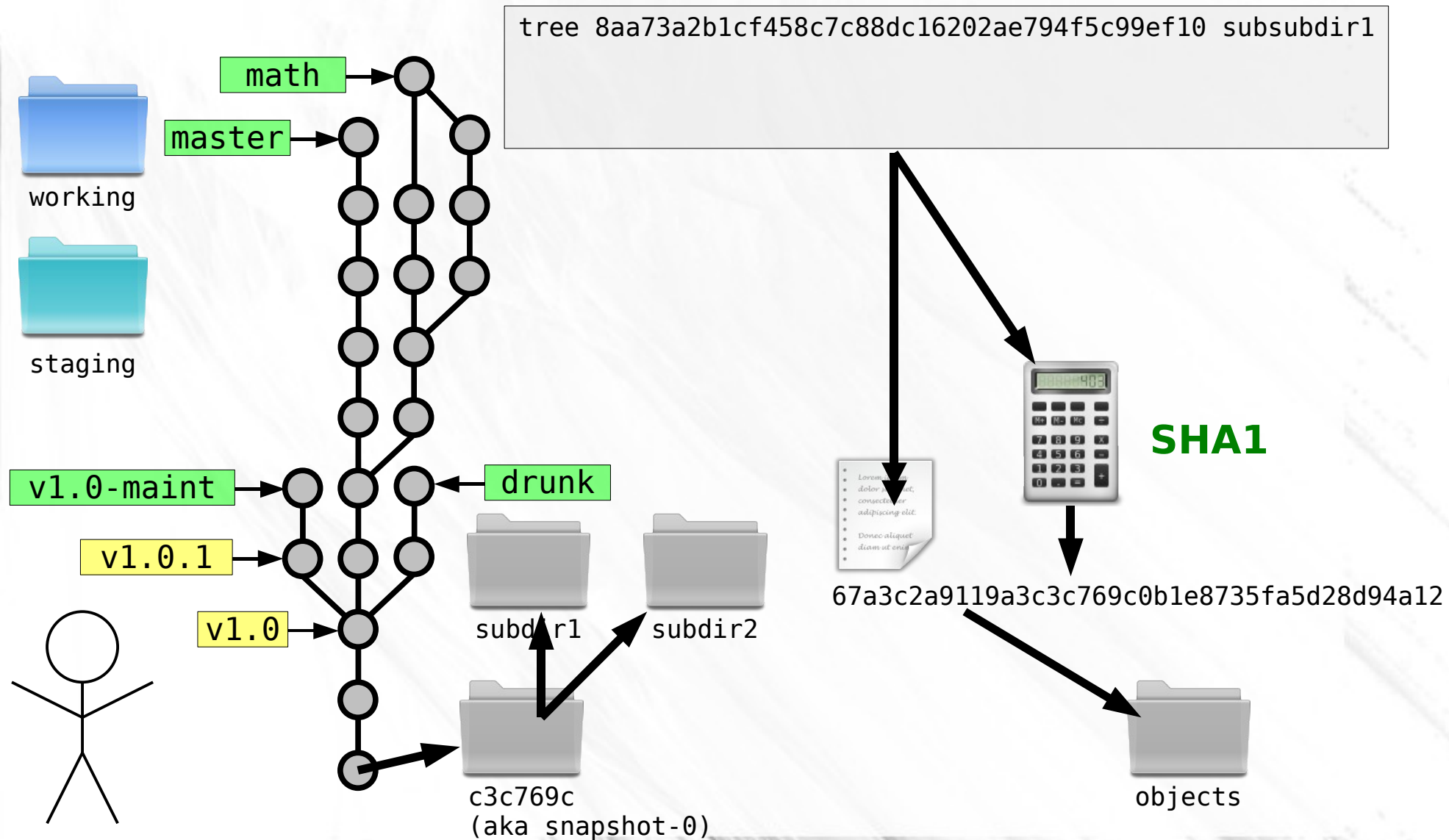
Eliminating Duplication



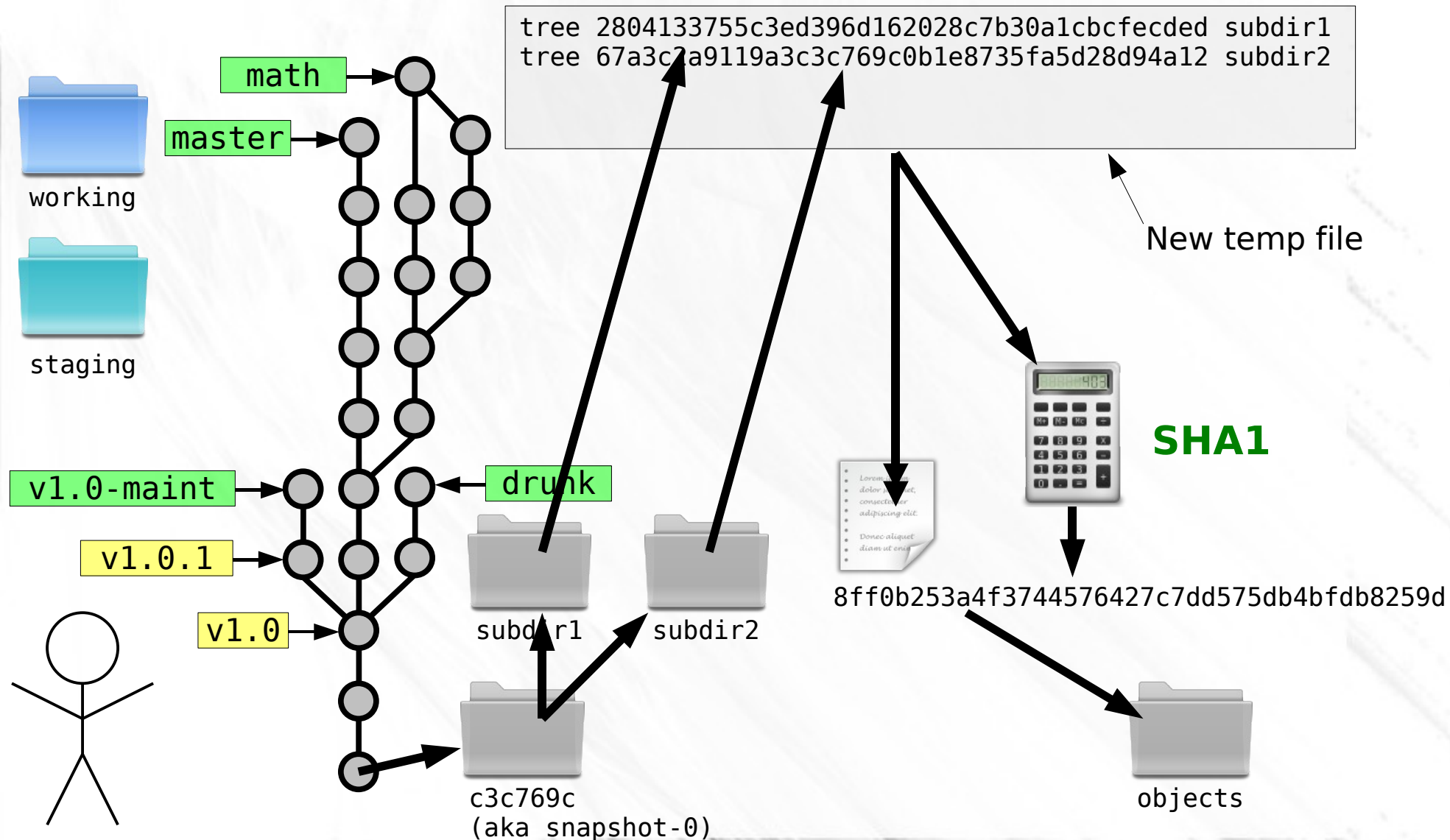
Eliminating Duplication



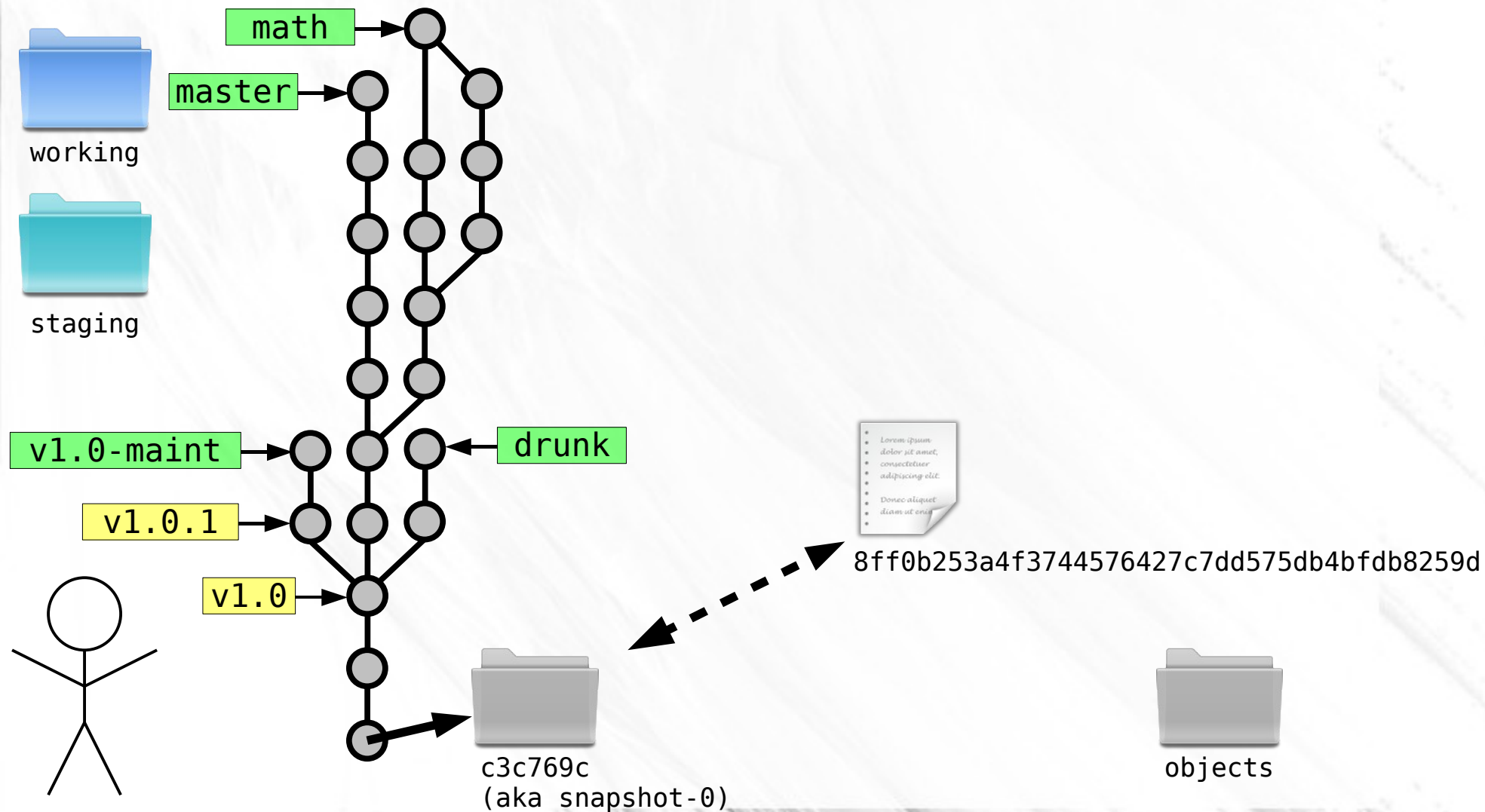
Eliminating Duplication



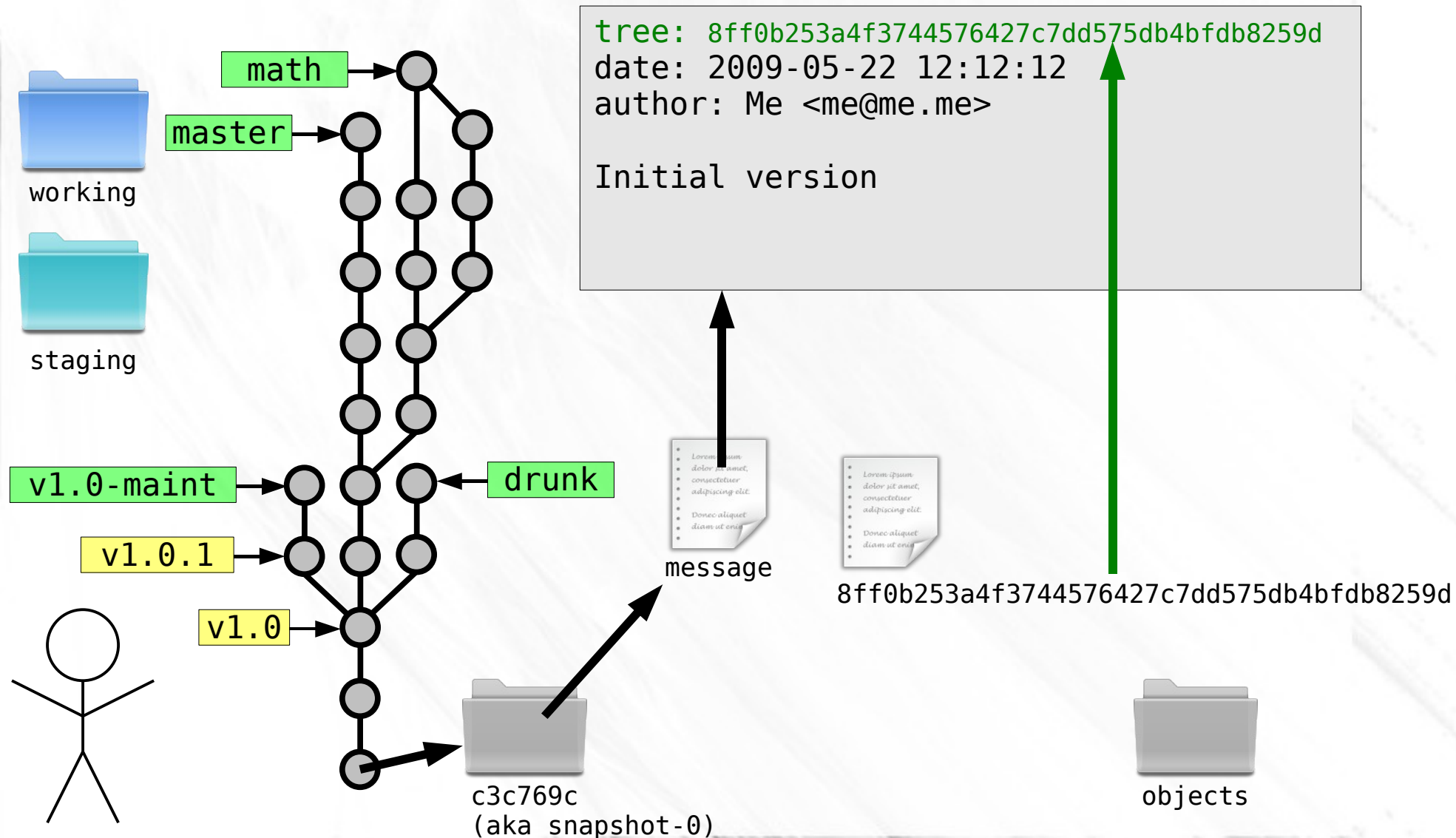
Eliminating Duplication



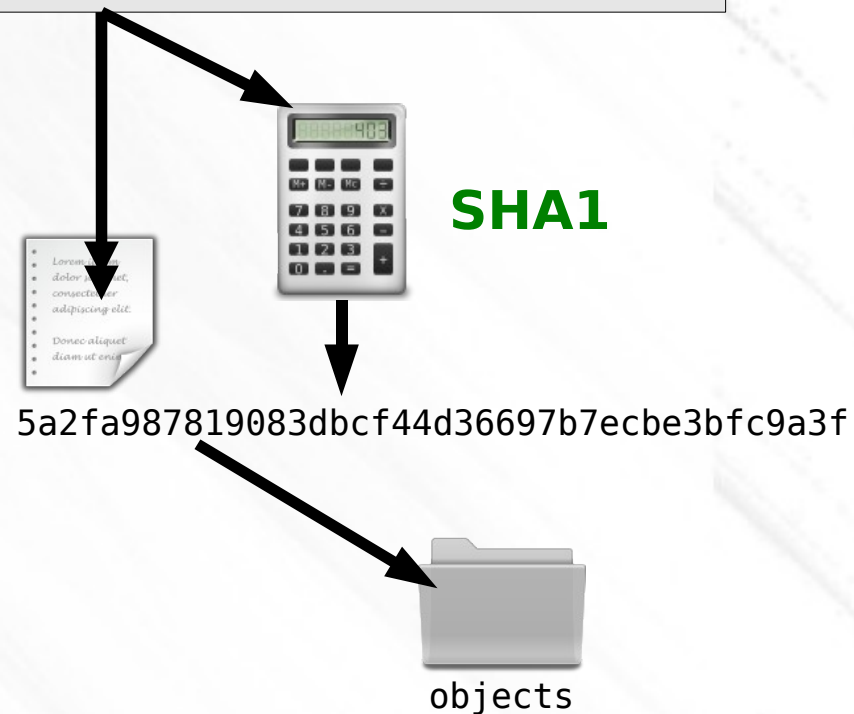
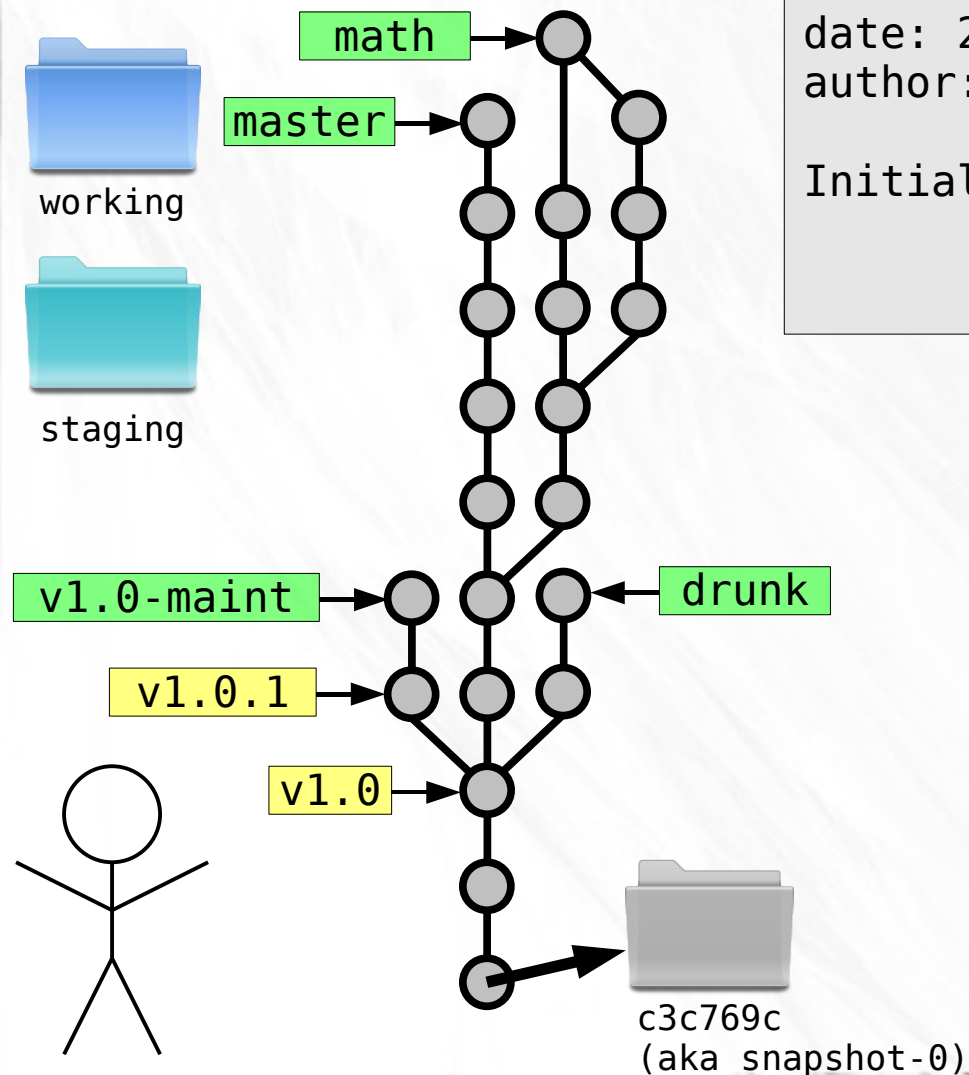
Eliminating Duplication



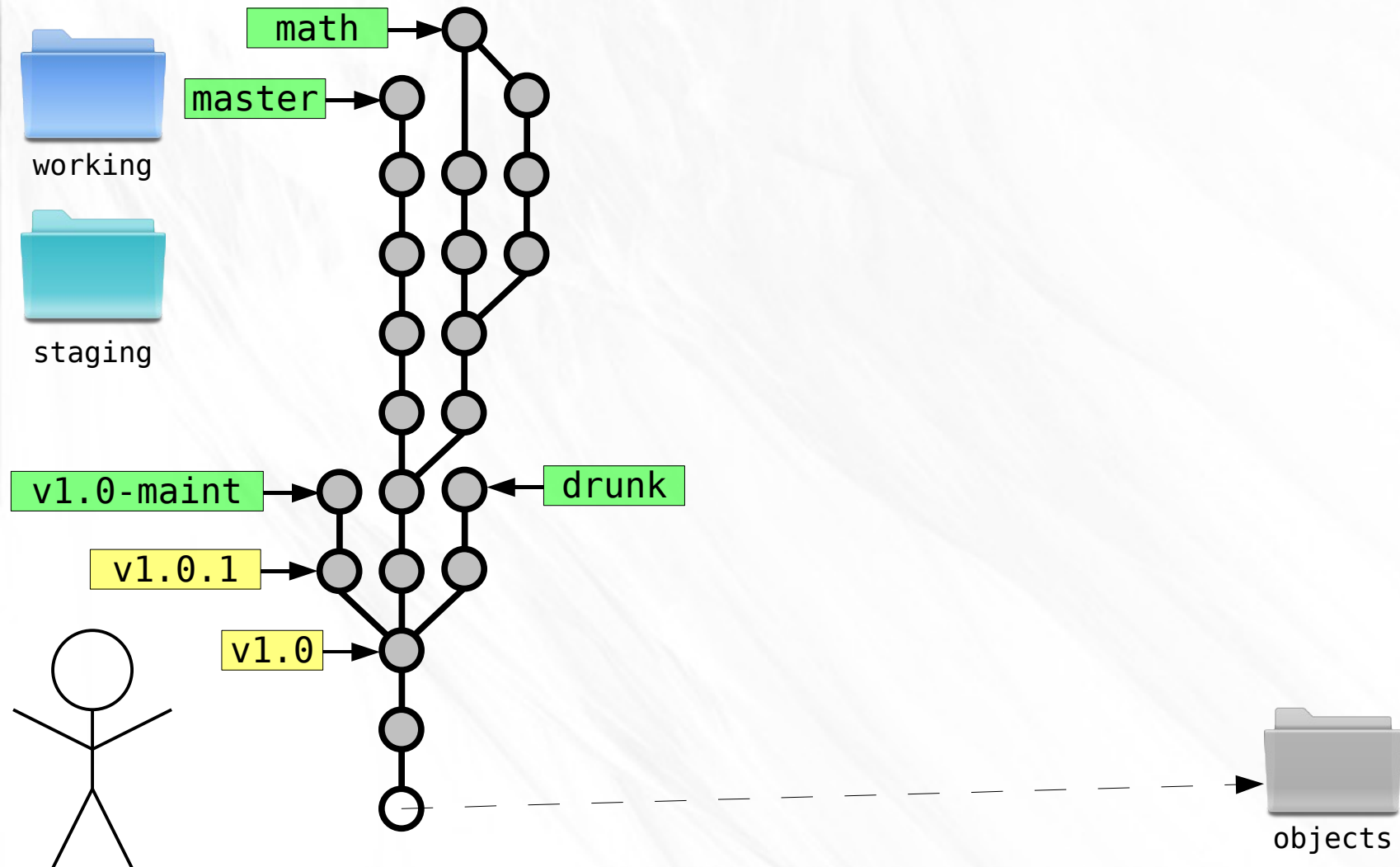
Eliminating Duplication



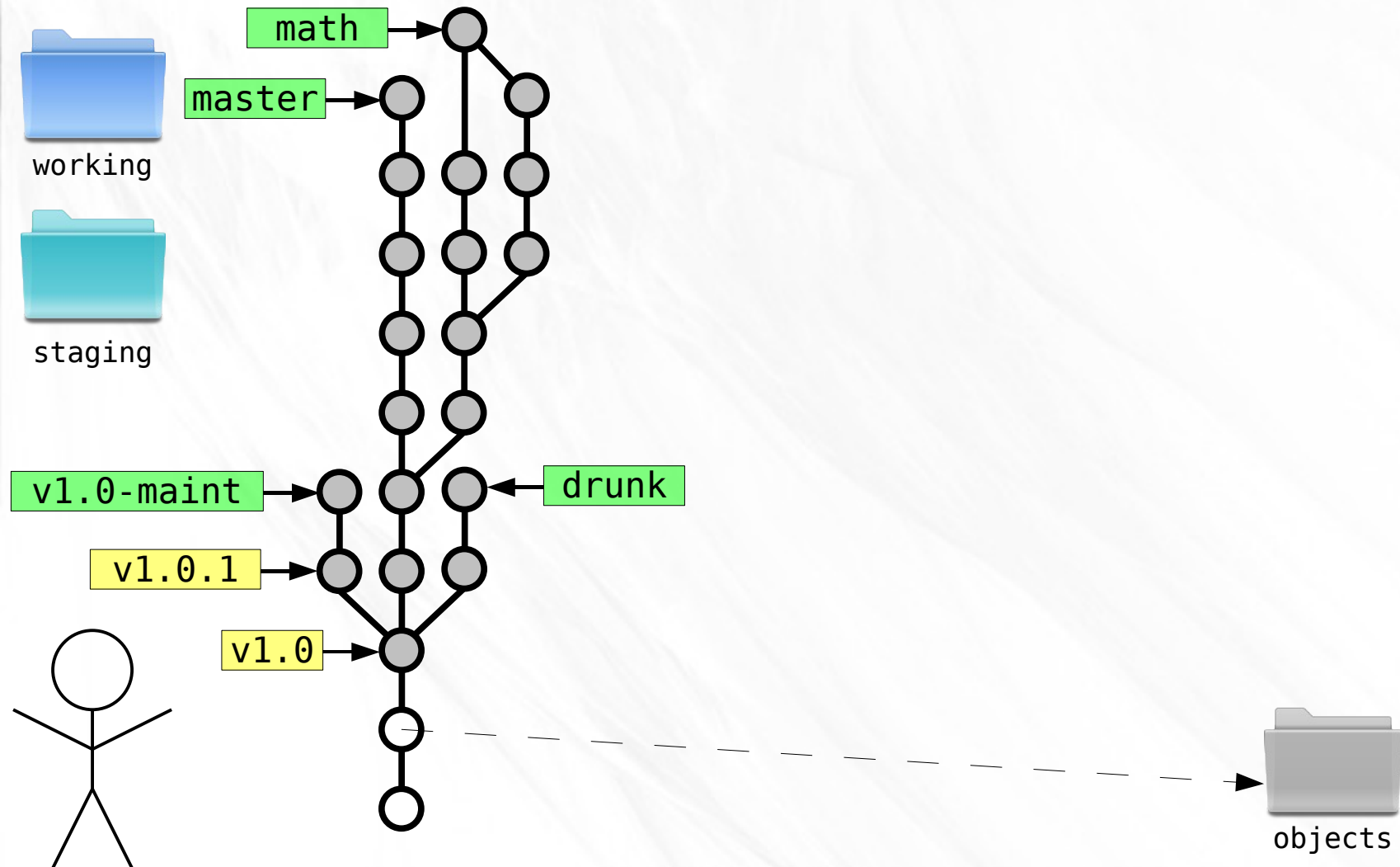
Eliminating Duplication



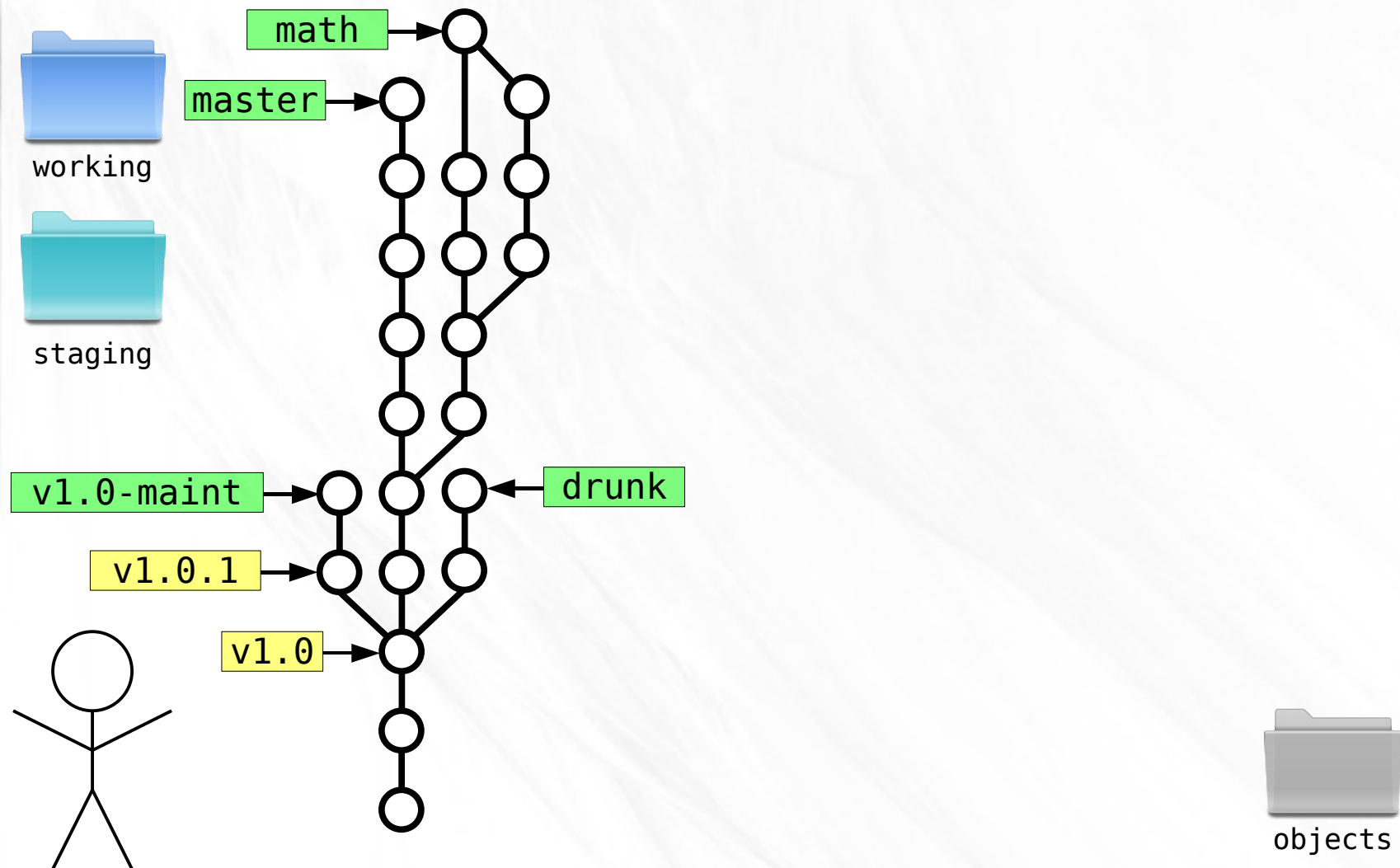
Eliminating Duplication



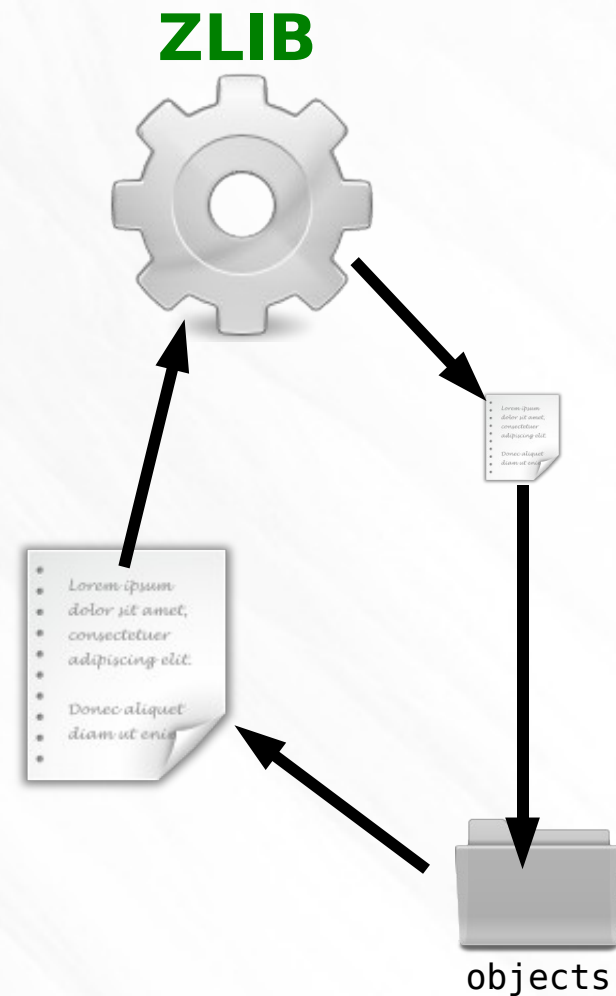
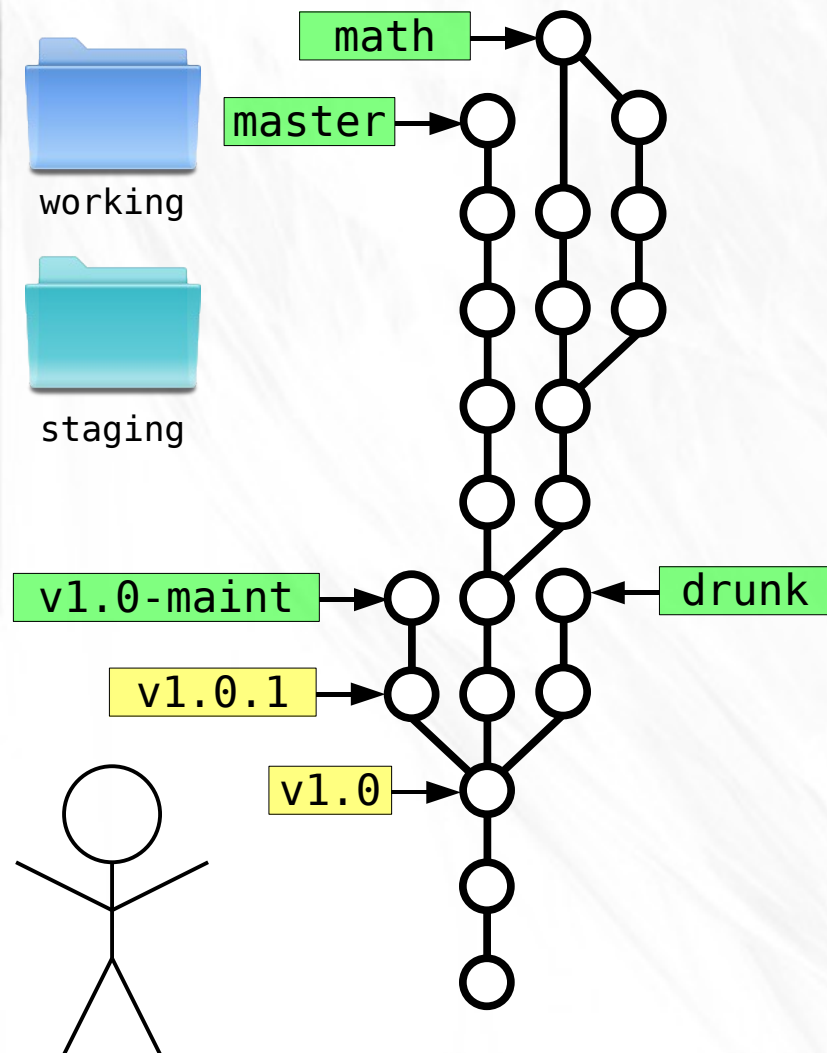
Eliminating Duplication



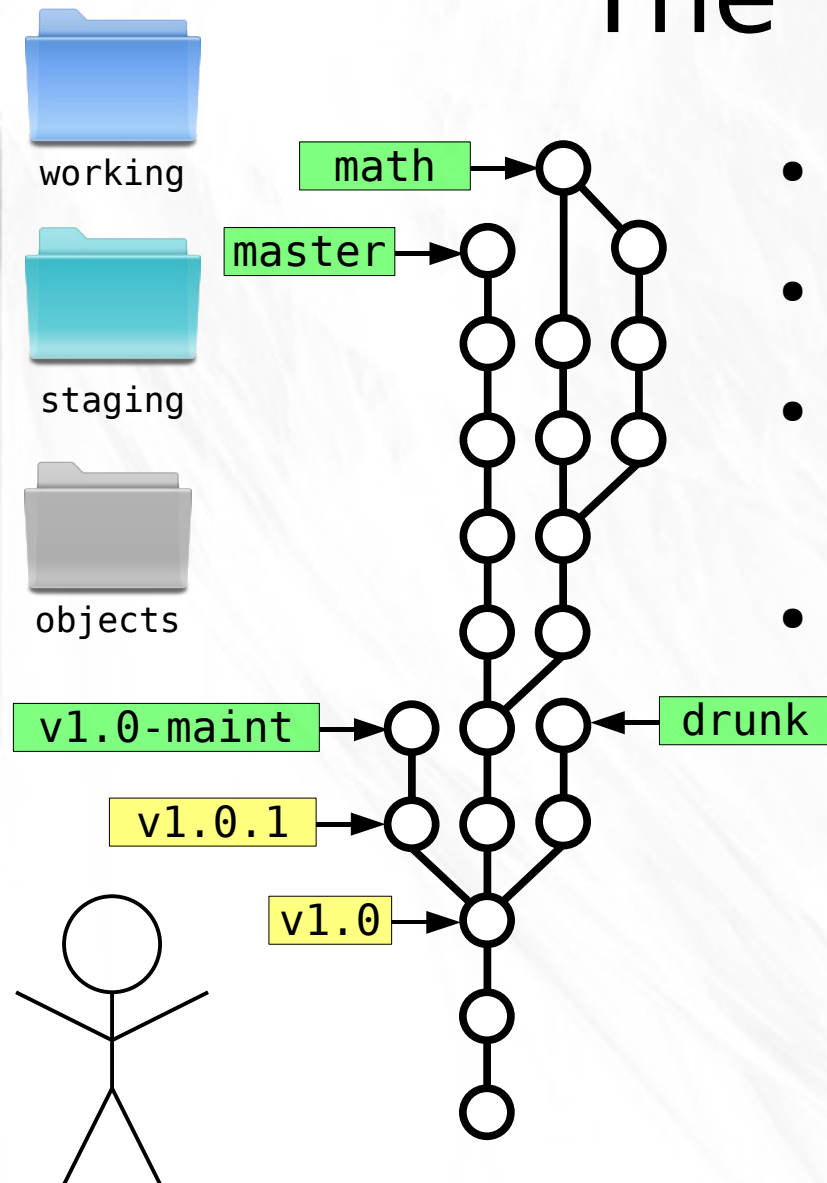
Eliminating Duplication



Compressing Blobs

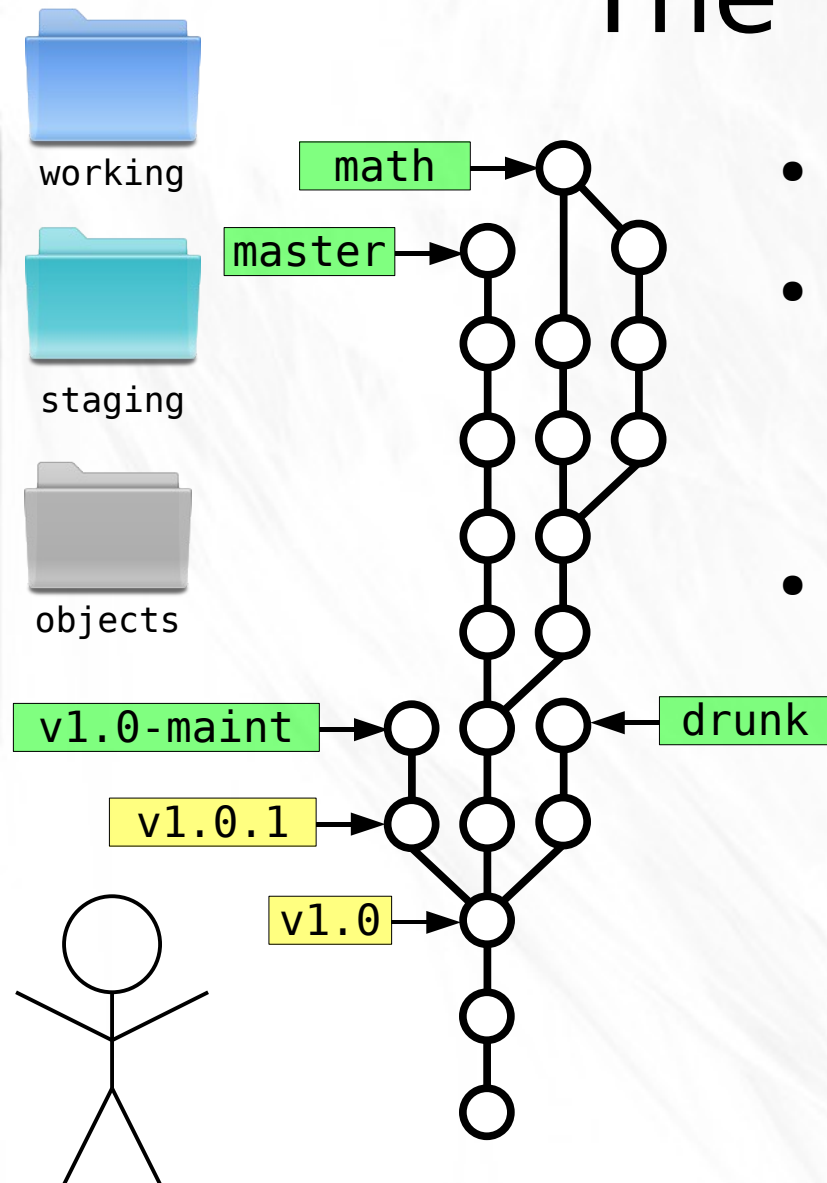


The True Git



- TADAA!
- This is pretty much Git
- Nicer command line tools for all these operations
- Many, many other tools

The True Git



- Keep this parable in mind
- Git is simple and powerful

- One more thing:

`git reflog`

Where to go next?

- @ Opera:
 - <http://dvcs.oslo.osa>
 - dvcs-interest@opera.com
 - johanh@opera.com
- In general:
 - Git homepage: <http://git-scm.com>
 - Git Community Book:
<http://book.git-scm.com/>
 - <http://gitorious.org> / <http://github.com>

Questions?

- Thanks for your attention!
- This presentation is available at:
http://dvcs.oslo.osa/~johanh/git_parable/
- Reach me at <johanh@opera.com>