

Git internal storage

Seth House <seth@eseth.com>

Ogden Area Linux User Group

2011-07-26

Pro Git

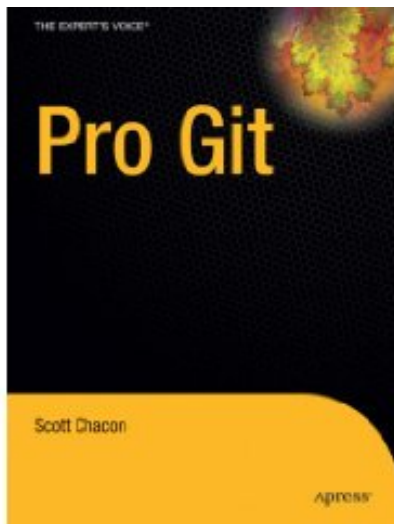
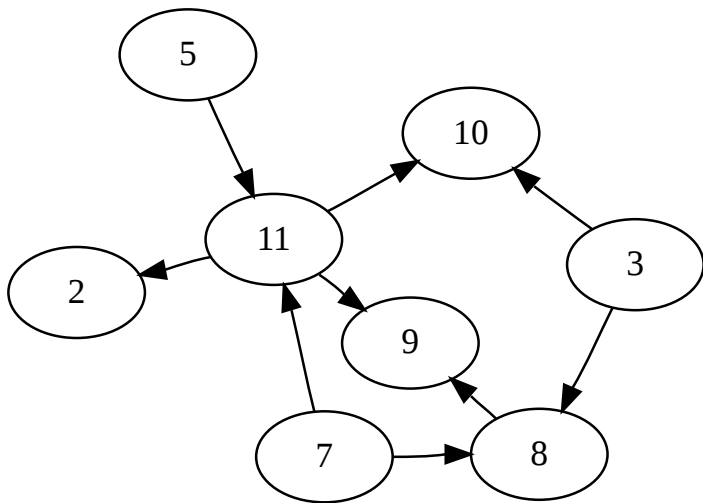


Figure: <http://progit.org/>

A quick note about Git branches

The DAG



refs

```
% cat .git/refs/heads/master  
6bf4e7278d0cd3301ac40874d6aca6636c21975d
```

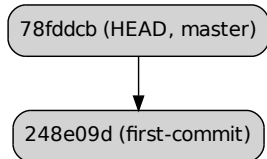
SHA-1

```
% git cat-file -p HEAD
tree c448aecc36a5100553afa394feb0fcdb30aa2ac8
parent 82e9f5ef437004119322389bc9f433655a591e9d
author Seth House <seth@eseth.com> 1311715135 -0600
committer Seth House <seth@eseth.com> 1311715553 -0
```

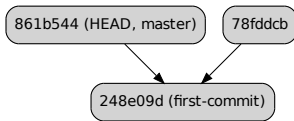
Added B

commit --amend

```
touch A && git add A
git commit -m "Added A"
git tag first-commit
touch B && git add B
git commit -m "Added B"
```



```
git commit --amend \
  -m "Added B and stuff"
```



The reflog

```
git reflog --date=relative
```


Garbage collection

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 - ▶ reflog entries are pruned after 90 days.

Visualizing the DAG

```
git graph-dag HEAD --all \  
$(git fsck --unreachable \  
--no-reflogs | awk '{print $3}') \  
| dot -Tpng | display
```

Using Git as a key-value data store (to build a todo list app)

Inputting data

```
% echo "walk the dog" \  
    | git hash-object -w --stdin  
cfb23f77043b418856a33e4f15178e1298bf02dd
```

Retriving data

```
% git cat-file -p \  
    cfb23f77043b418856a33e4f15178e1298bf02dd  
walk the dog
```

Associating data

```
% git update-index --add --cacheinfo \  
    100644 \  
    cfb23f77043b418856a33e4f15178e1298bf02dd \  
    cfb23f77043b418856a33e4f15178e1298bf02dd  
% git write-tree  
3d936620e22a88f9963e778a85082297e49c2824
```


Searching data

```
% git grep --cached dog
```

```
cfb23f77043b418856a33e4f15178e1298bf02dd:walk the d
```