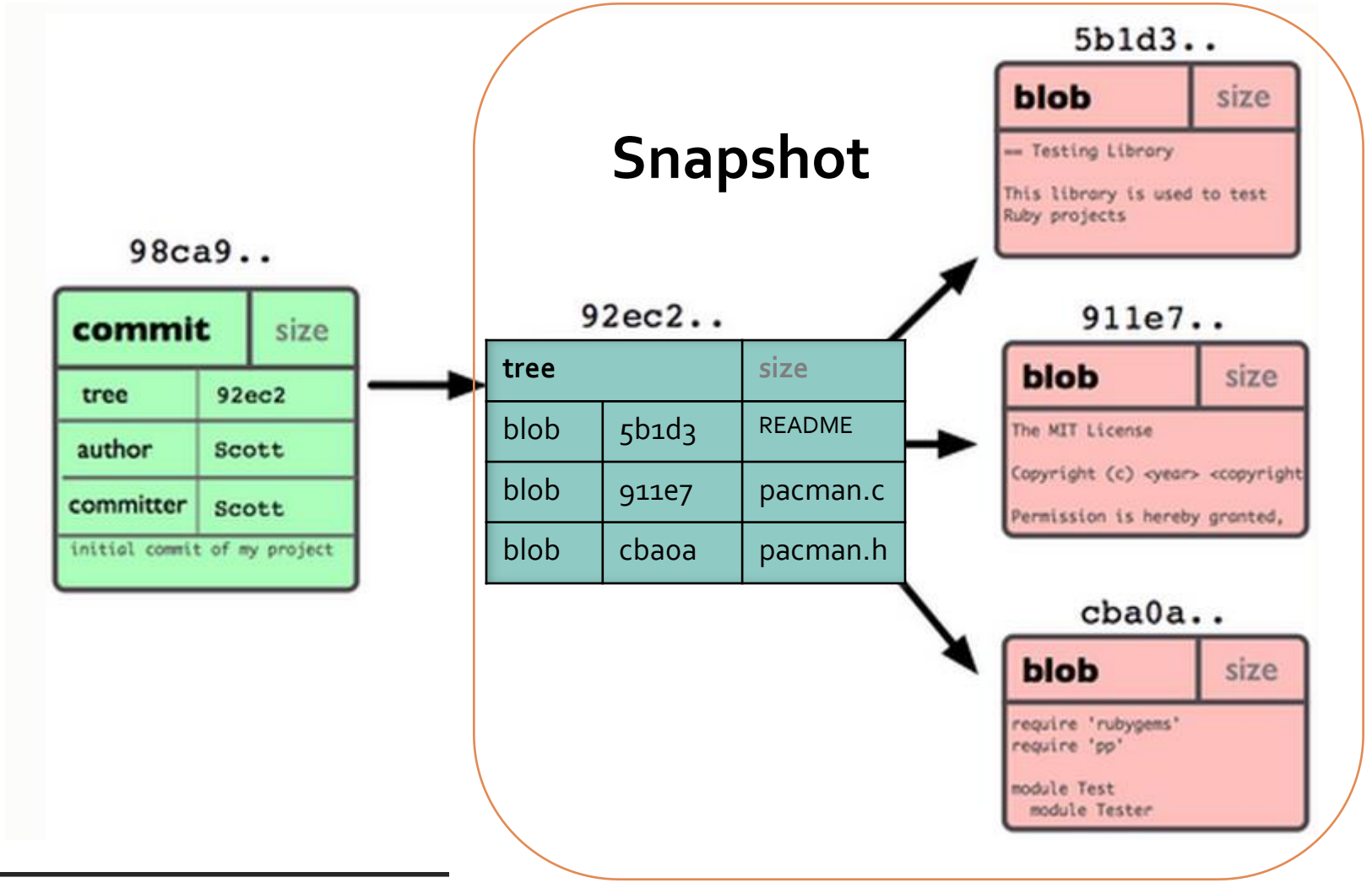
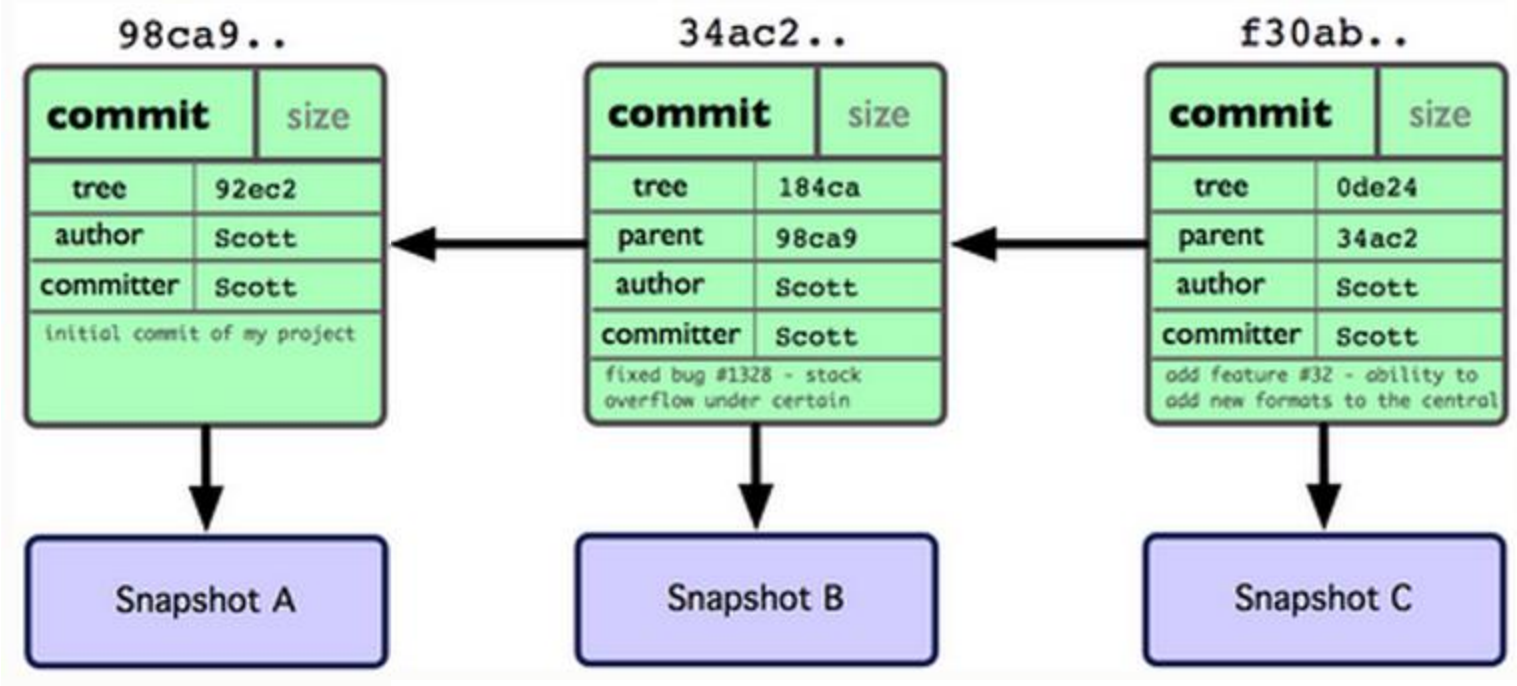
CS35L – Winter 2019

Slide set:	9.2
Slide topics:	Source control, Git
Assignment:	9

Git Repo Structure



After 2 More Commits...

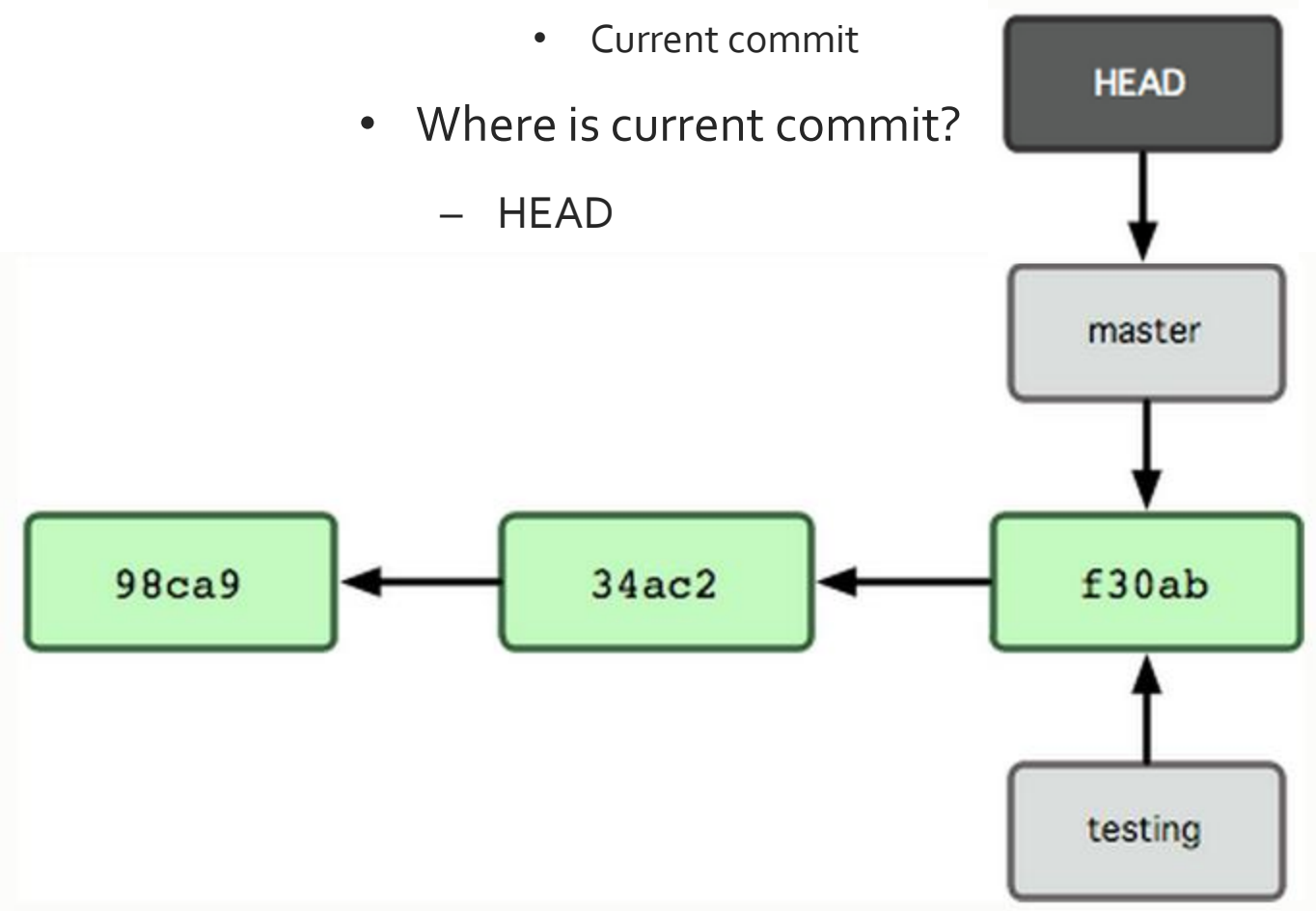


What Is a Branch?

- A pointer to one of the commits in the repo (head) + all ancestor commits
- When you first create a repo, are there any branches?
  - Default branch named ‘master’
- The default master branch
  - points to last commit made
  - moves forward automatically, every time you commit

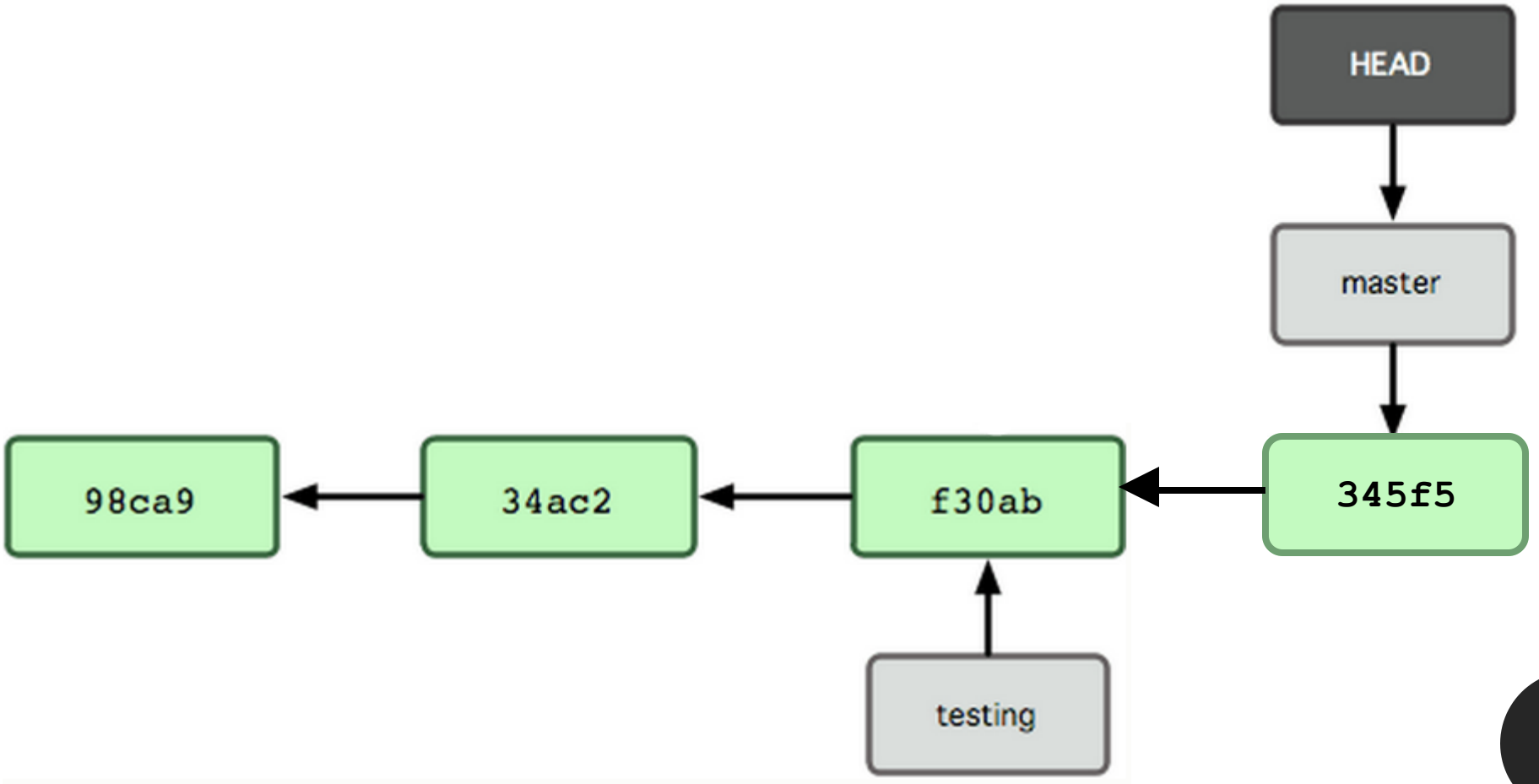
New Branch

- Creating a new branch = creating new pointer
  - `$ git branch` testing
  - Where is new branch created?
    - Current commit
- Where is current commit?
  - HEAD



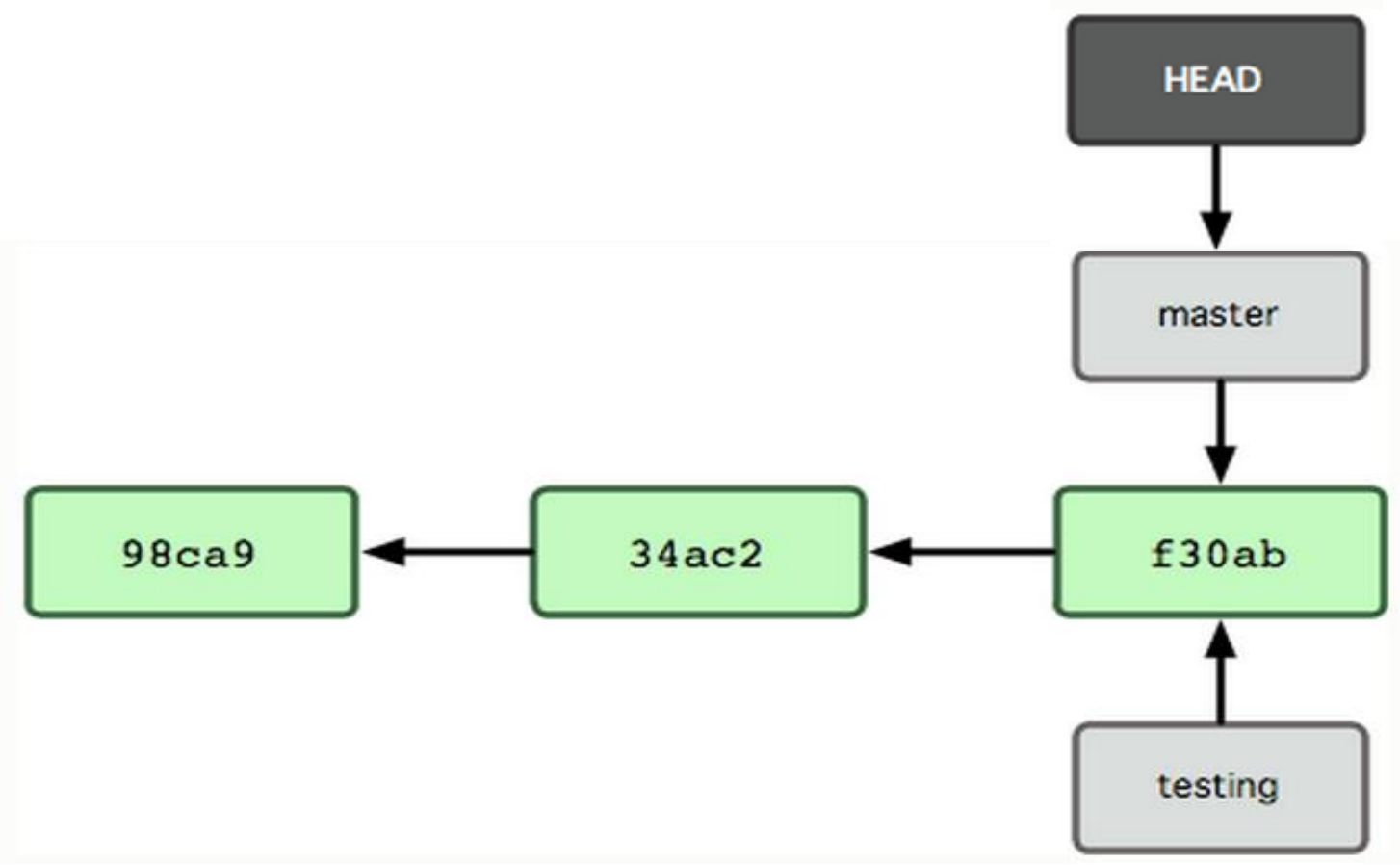
New Commit

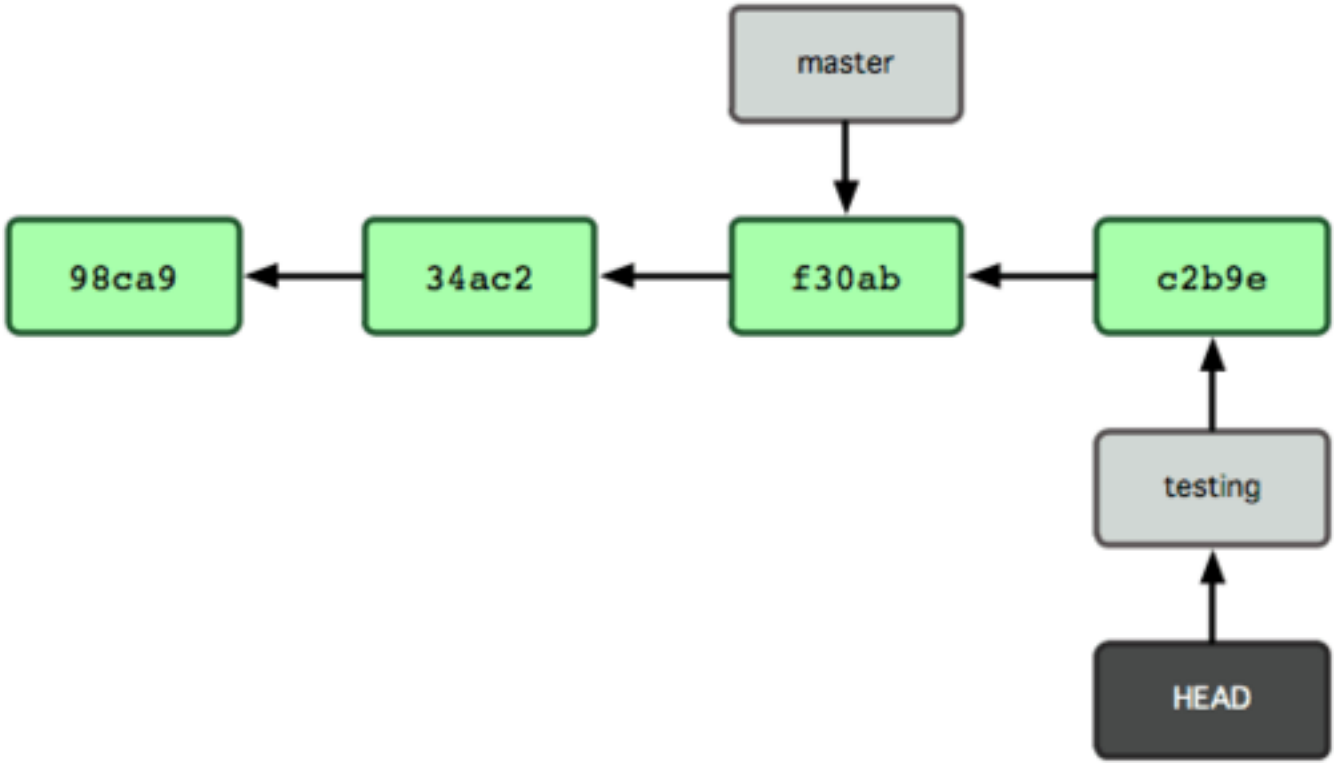
- What happens if we make another commit?



Switching to New Branch

- Check out new branch
  - `$ git checkout <branch_name>`
  - `$ git checkout` **`testing`**





COMMIT AFTER SWITCH


In case of fire
1. git commit
2. git push
3. leave building

Why Branching?

- Experiment with code without affecting main branch
- Separate projects that once had a common code base
- 2 versions of the project

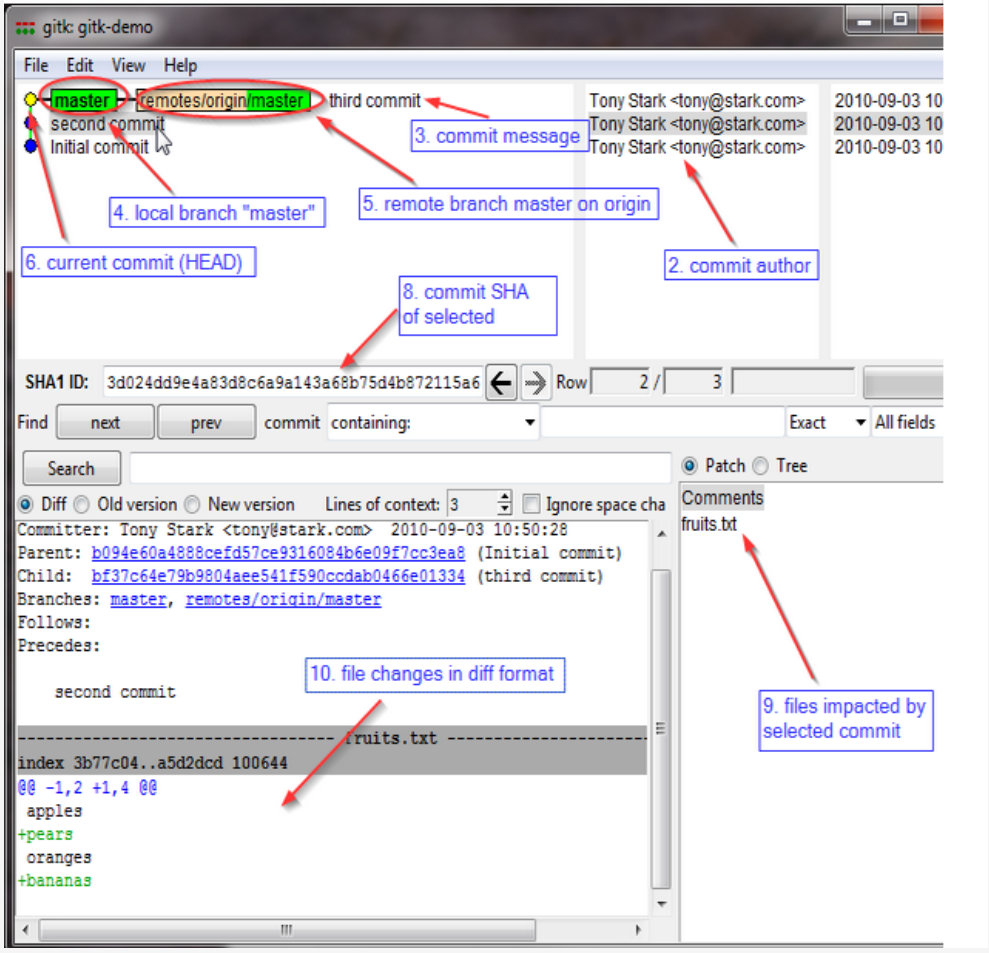
Publish patch you made in lab 9

- Create a new branch "quote" of version 3.0
  - Branch command + checkout command **(git branch quote v3.0; git checkout quote)**
  - `$ git checkout v3.0 -b quote`
- Use patch from lab 9 to modify this branch
  - Patch command
  - `$ patch -pnum <quote-3.0-patch.txt`
- Modify ChangeLog file in diffutils directory
  - Add entry for your changes similar to entries in ChangeLog
- Commit changes to the new branch
  - `$ git add .` `$ git commit -F <Changelog file>`
- Generate a patch that other people can use to get your changes
  - `$ git format-patch -[num] --stdout > formatted-patch.txt`
- Test your partner's patch
  - Check out version 3.0 into a temporary branch `partner`
  - Apply patch with `git am` command: `$ git am < formatted-patch.txt`
  - Build and test with `$ make check`
  - Make sure partner's name is in HW9.txt for #8

Homework 9

gitk

- A repository browser
  - Visualizes commit graphs
    - Used to understand the structure of the repo
      - Tutorial: http://lostechies.com/joshuaflanagan/2010/09/03/use-gitk-to-understand-git/



Gitk

- SSH into the server with X11 enabled
  - ssh -X for OS with terminal (OS X, Linux)
  - Select "X11" option if using putty (Windows)
- Run gitk in the ~eggert/src/gnu/emacs directory
  - Need to first update your PATH
    - $ export PATH=/usr/local/cs/bin:$PATH
  - Run X locally before running gitk
    - Xming on Windows, Xquartz on Mac