GIT

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CONTENT

Version Control Systems
Git
Installing Git
Getting Started
Collaboration
Branches
Merge

Version Control System

Manages changes to source code of a project

Version Control System

Advantages

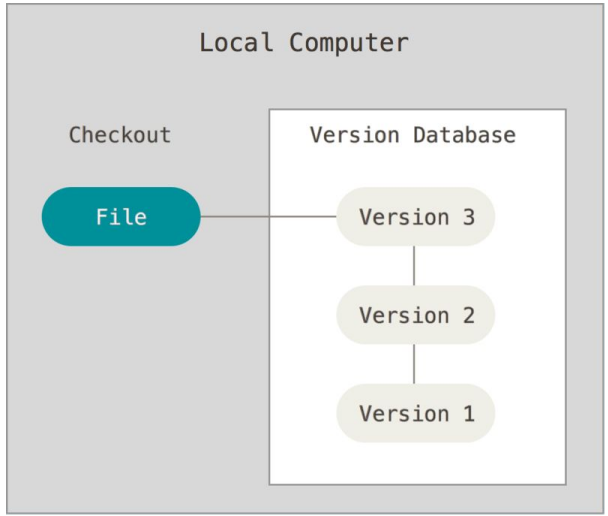
- Backup and Restore
- Synchronisation
- Undo changes
- Track changes
- Track ownership
- Sandboxing
- Branching and Merging

GIT

Basically a Distributed Version Control System

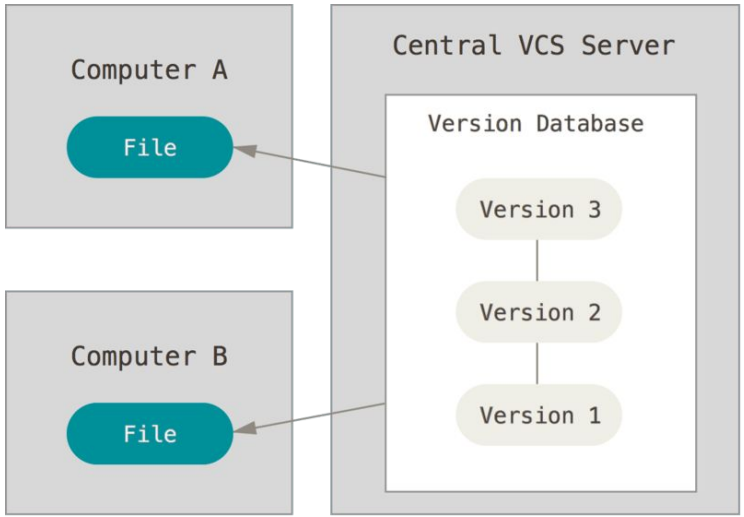
GIT

Local Version Control Systems



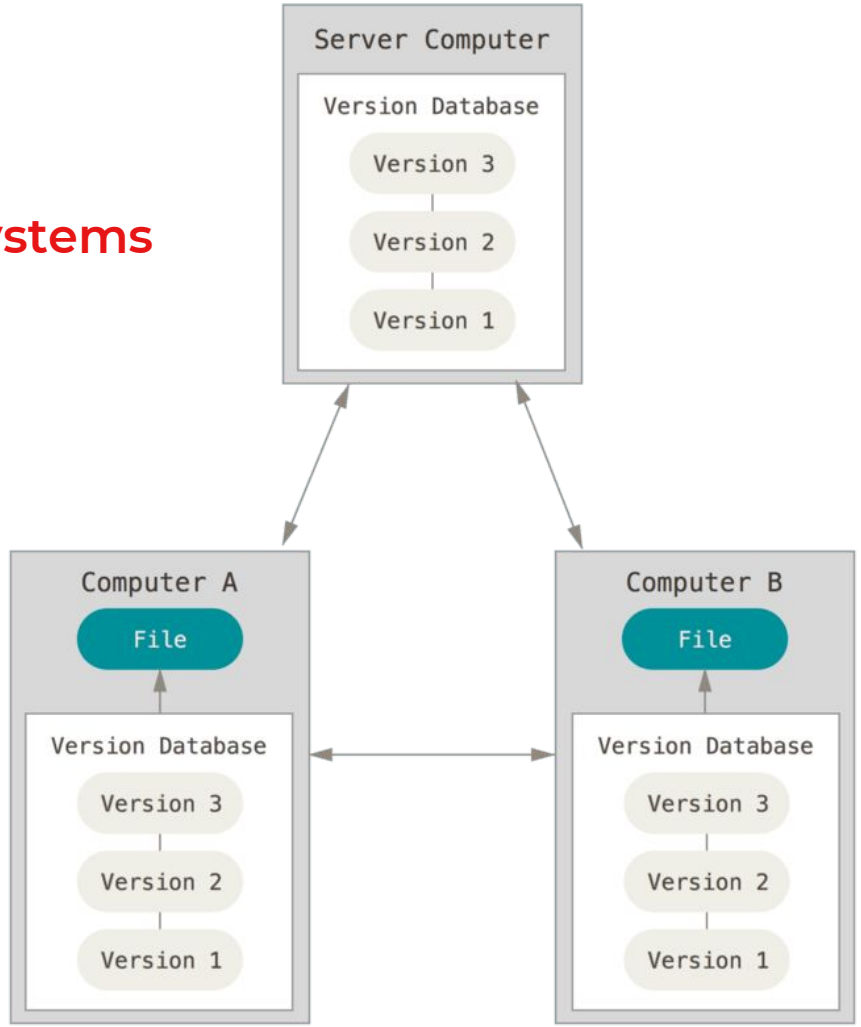
GIT

Centralized Version Control Systems



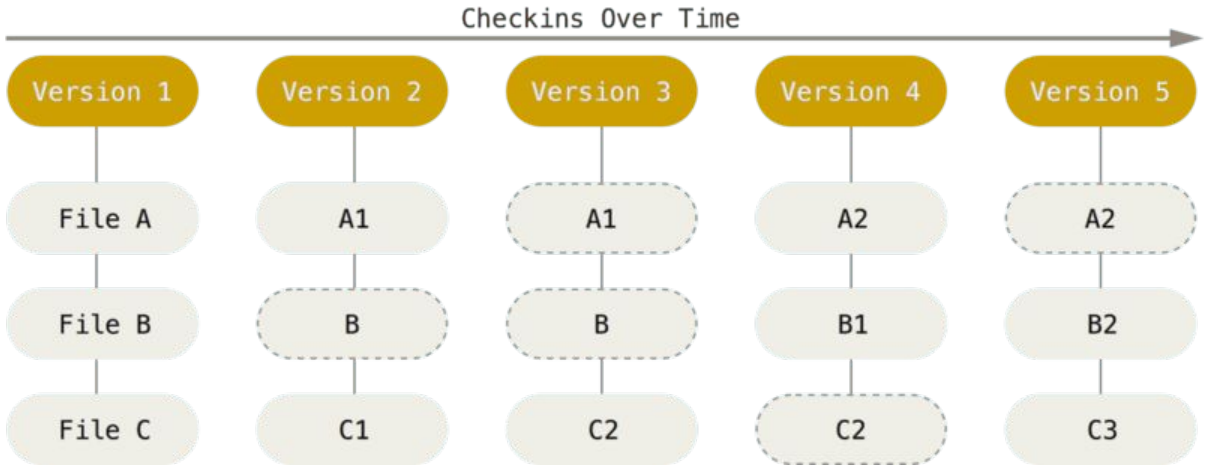
GIT

Distributed Version Control Systems



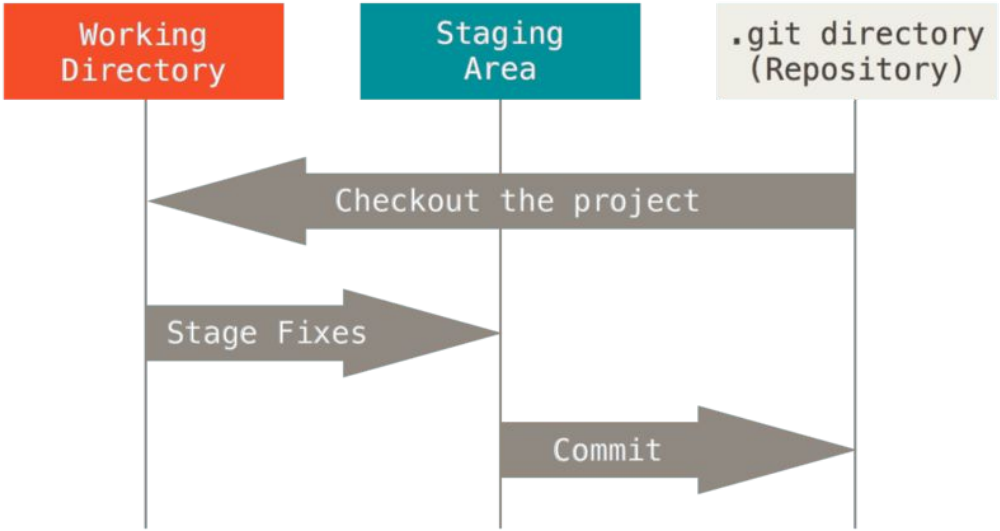
GIT

How it works?



GIT

Workflow



INSTALLING GIT

Linux

```
$ sudo apt install git-all
```

Mac

```
$ git --version
```

Windows

http://git-scm.com/download/win

GETTING STARTED

identification

```
$ git config --global user.name "John Doe"
$ git config --global user.email johndoe@example.com
```

GETTING STARTED

identification

```
$ git config --global user.name "John Doe"
$ git config --global user.email johndoe@example.com
```

Need Help?

```
$ git <command> -h
```

GETTING STARTED

Create a repository

```
$ git init
```

Add files

```
$ git add file_name
```

```
$ git add *.py
```

Commit

```
$ git commit -m “There is a meaningful comment”
```

Check Log

```
$ git log
```

COLLABORATION

Cloning a repository

$ git clone https://github.com/eee3096s/practical4.git

Information about remote repository

$ git remote -v

From origin to local

$ git fetch <remote_repo>/<remote_branch>

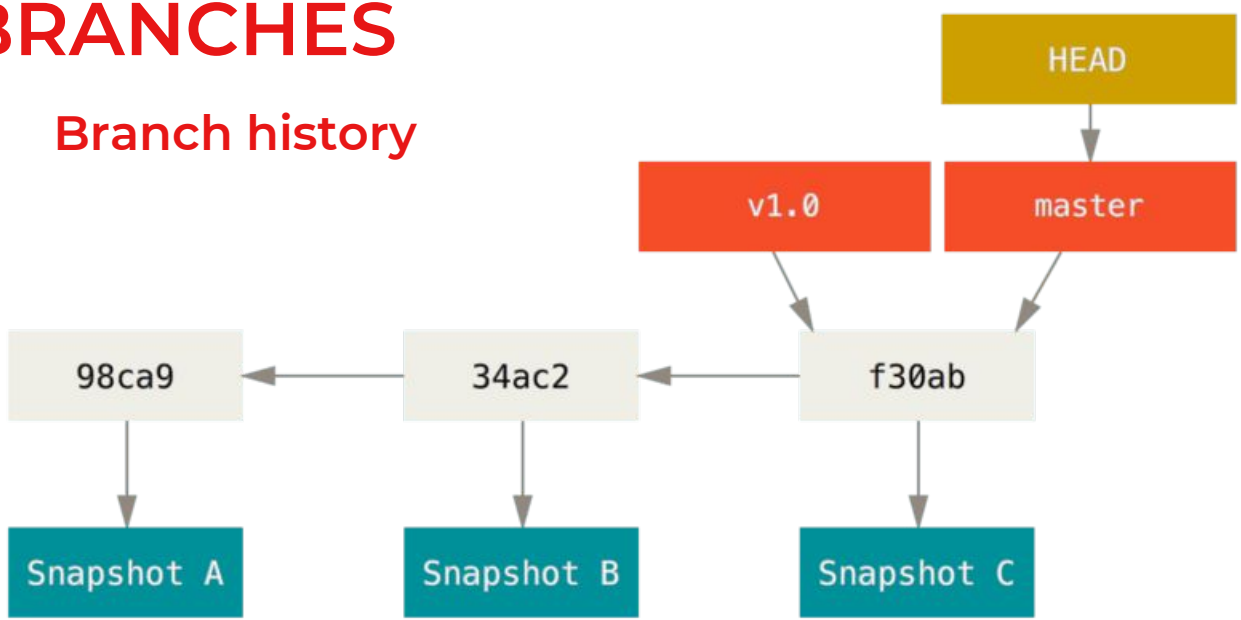
$ git pull <remote_repo>/<remote_branch> (fetch and merge)

From local to origin

$ git push origin <local_branch>

BRANCHES

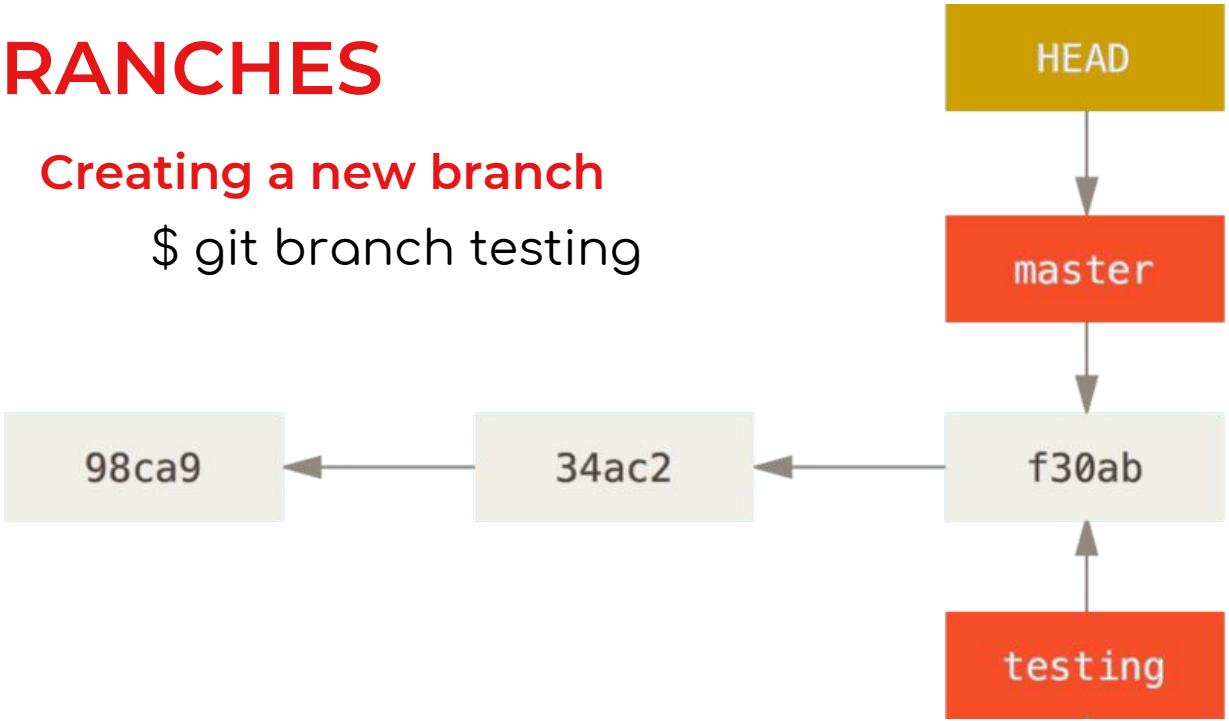
Branch history



BRANCHES

Creating a new branch

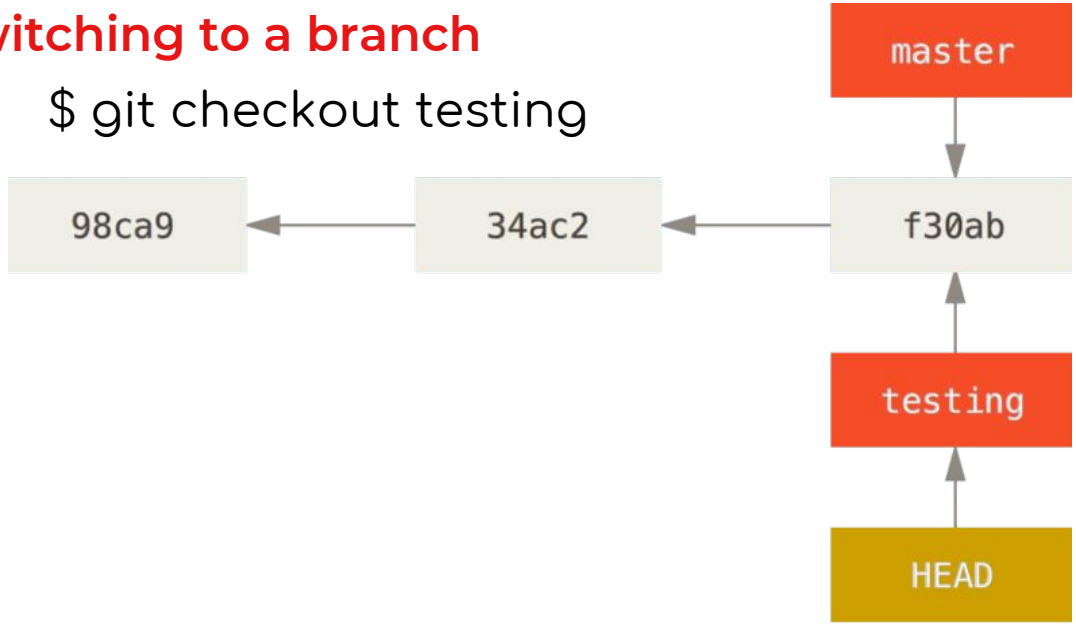
$ git branch testing



BRANCHES

Switching to a branch

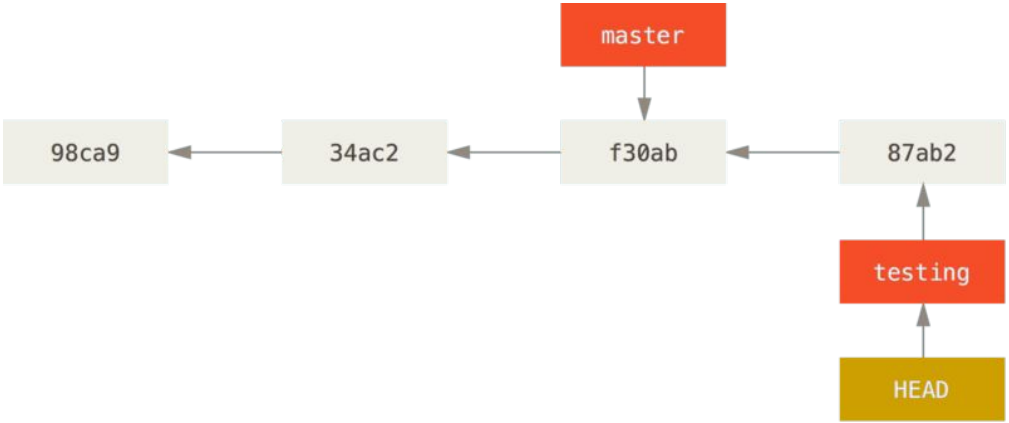
$ git checkout testing



BRANCHES

Convergent Branches

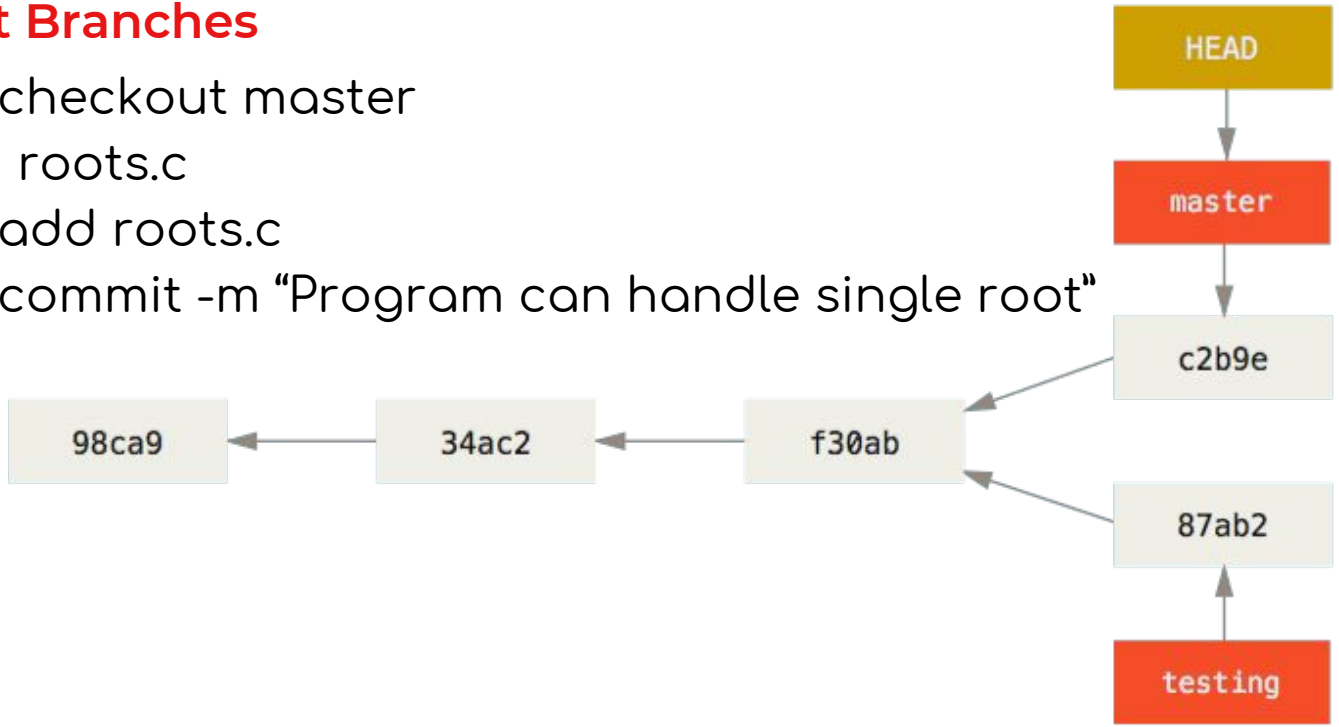
$ vim roots.c
$ git add roots.c
$ git commit -m “Program can handle single root”



BRANCHES

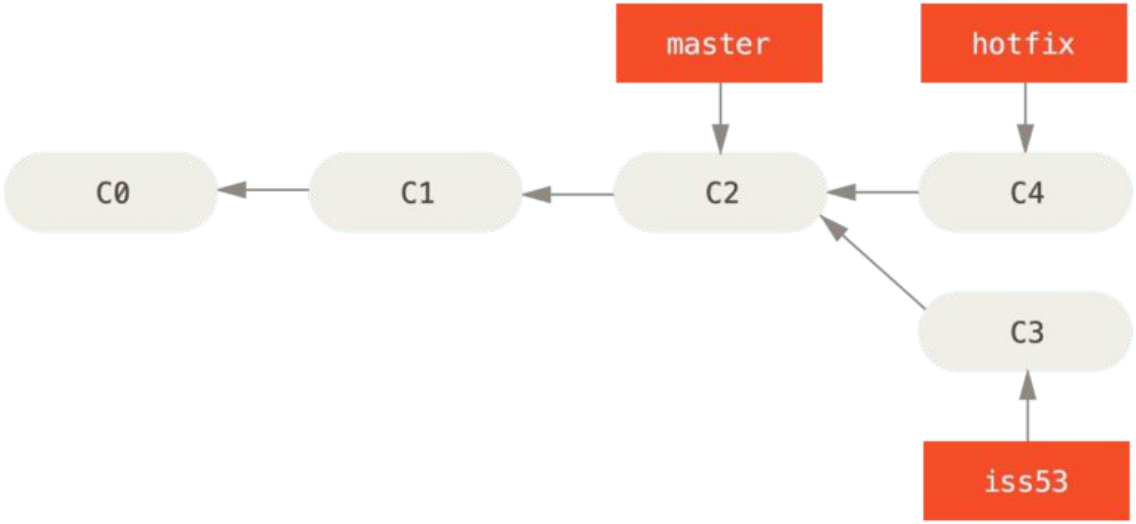
Divergent Branches

$ git checkout master
$ vim roots.c
$ git add roots.c
$ git commit -m “Program can handle single root”



MERGE

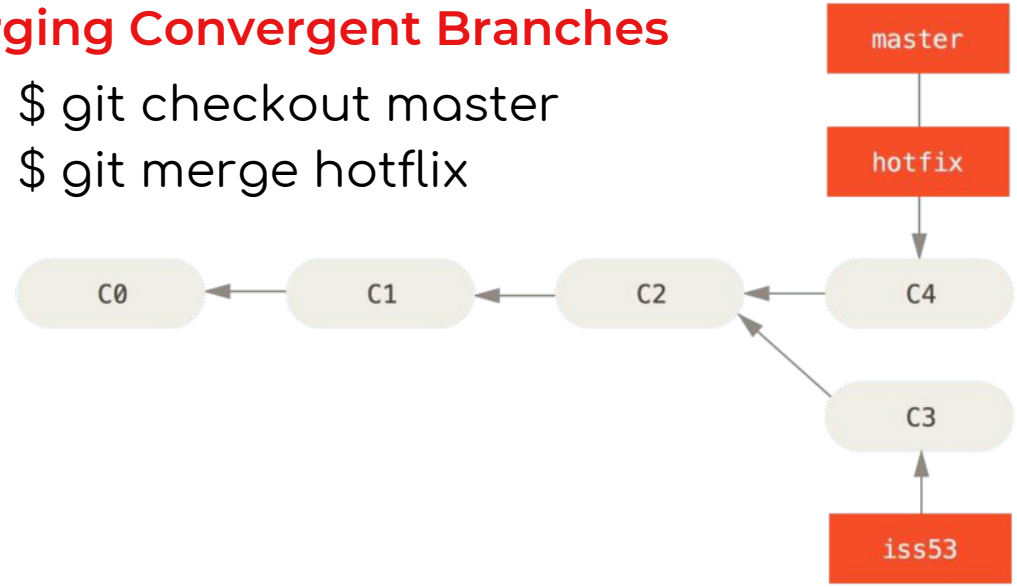
Basic Branching



MERGE

Merging Convergent Branches

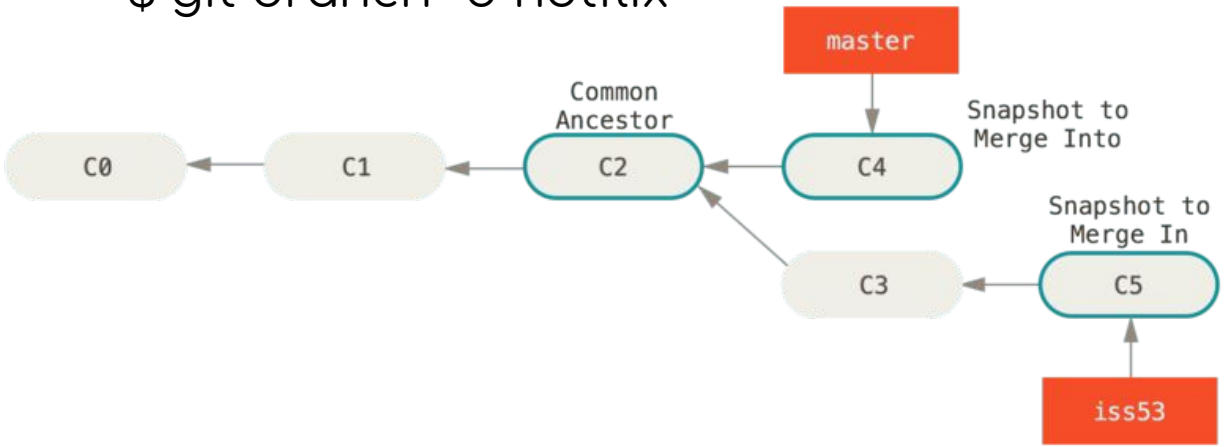
$ git checkout master
$ git merge hotfix



MERGE

Merging Divergent Branches

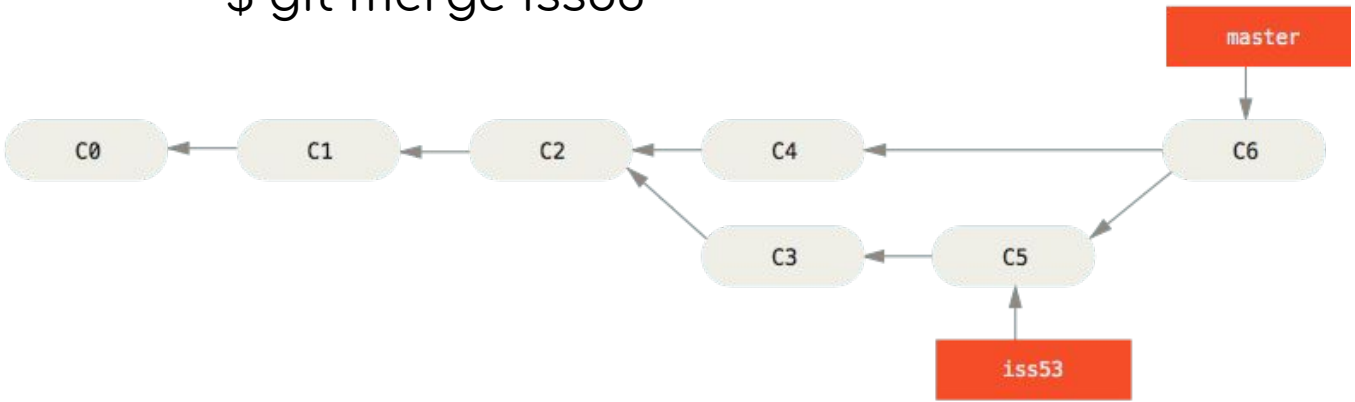
$ git branch -d hotflix



MERGE

Merging Divergent Branches

$ git checkout master
$ git merge iss53



MERGE

Merge Conflicts

```
$ git merge iss53
Auto-merging index.html
CONFLICT (content): Merge conflict in index.html
Automatic merge failed; fix conflicts and then commit the
result.
```

MERGE

Merge Conflicts

```
$ git status
On branch master
You have unmerged paths.
  (fix conflicts and run "git commit")

Unmerged paths:
  (use "git add <file>..." to mark resolution)

    both modified:      index.html

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

MERGE

Merge Conflicts

```
<<<<<<< HEAD:index.html
<div id="footer">contact : email.support@github.com</div>
=======
<div id="footer">
 please contact us at support@github.com
</div>
>>>>>>> iss53:index.html
```

FOR MORE INFORMATION

Git documentation

https://git-scm.com/doc

Git cheat sheet

https://services.github.com/on-demand/downloads/github-git-cheat-sheet.pdf

Github

https://github.com/

Github assistance

https://help.github.com/