

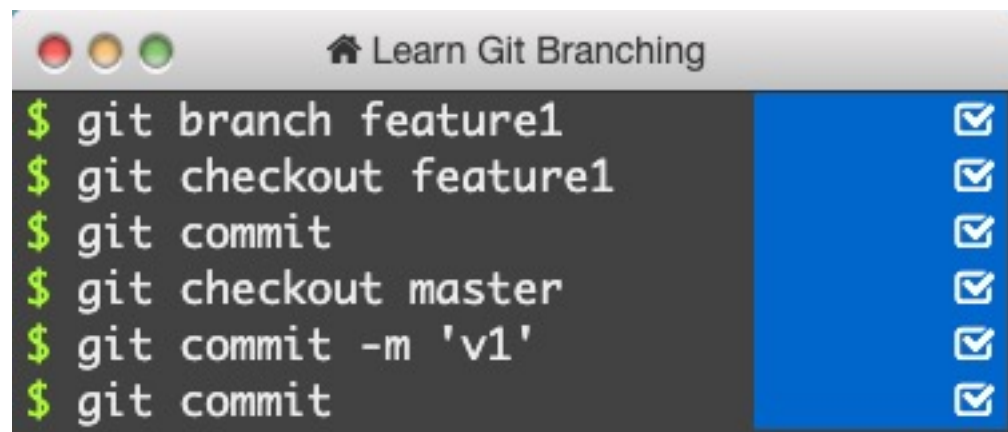
# [320] Branching and Merging

Yiyin Shen

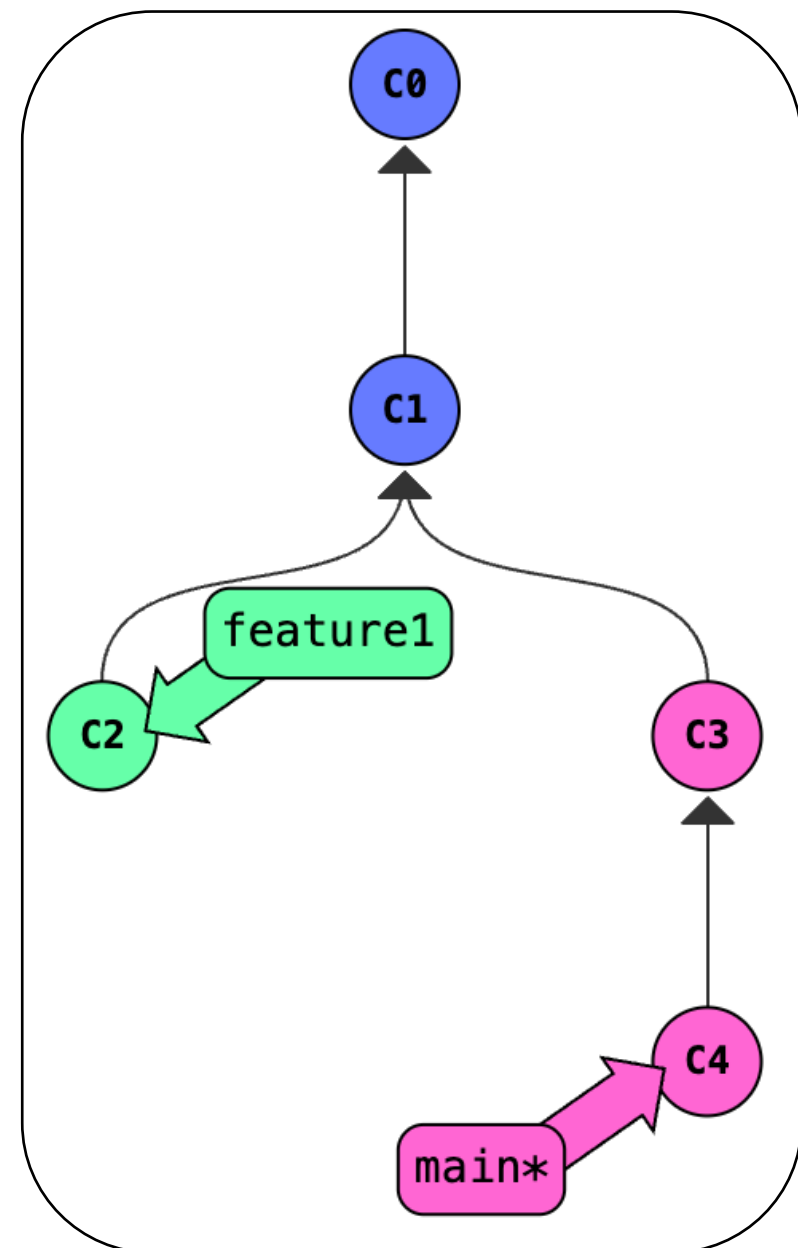
# Practice Branching

Git Simulator:

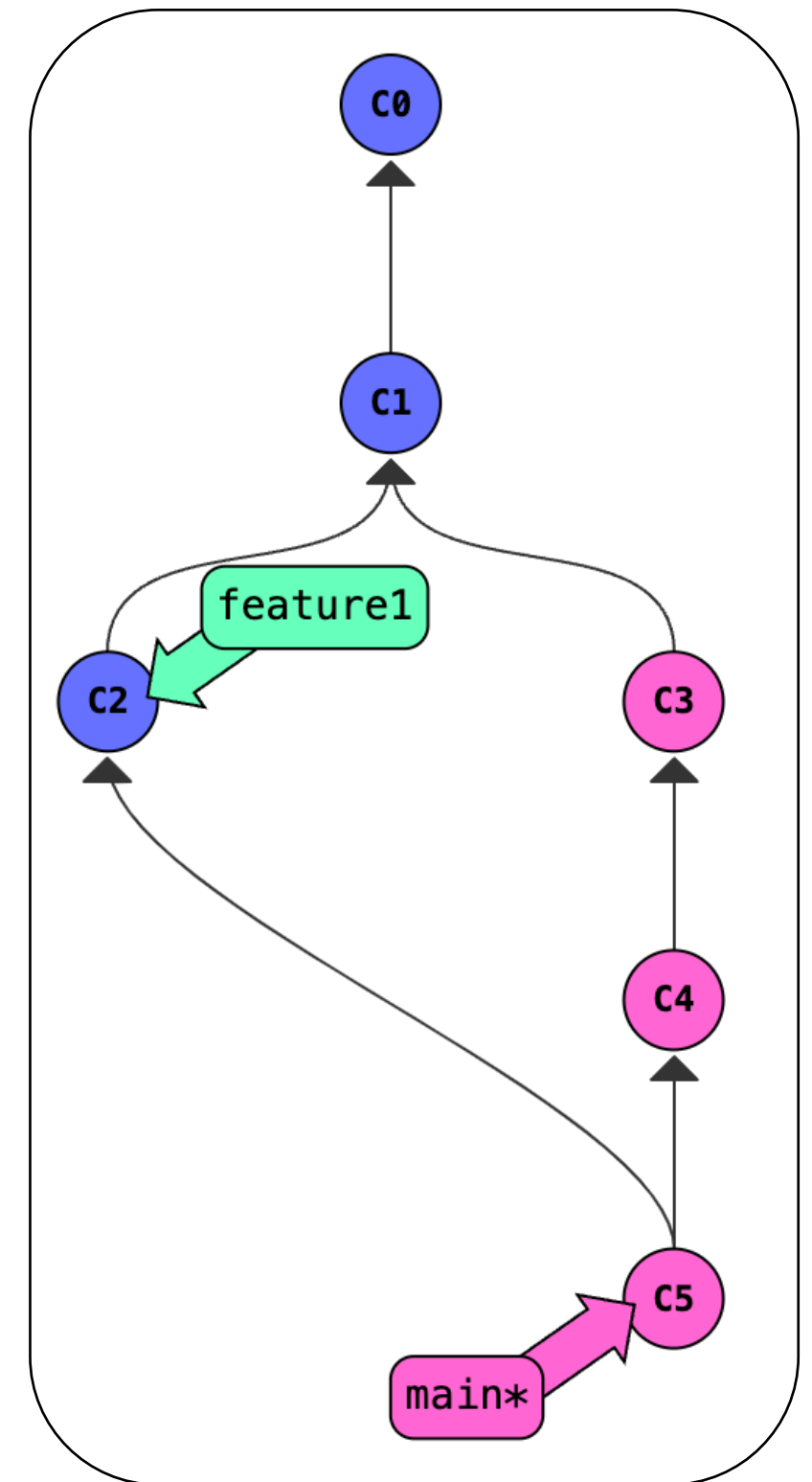
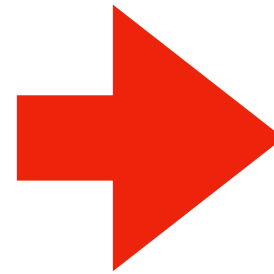
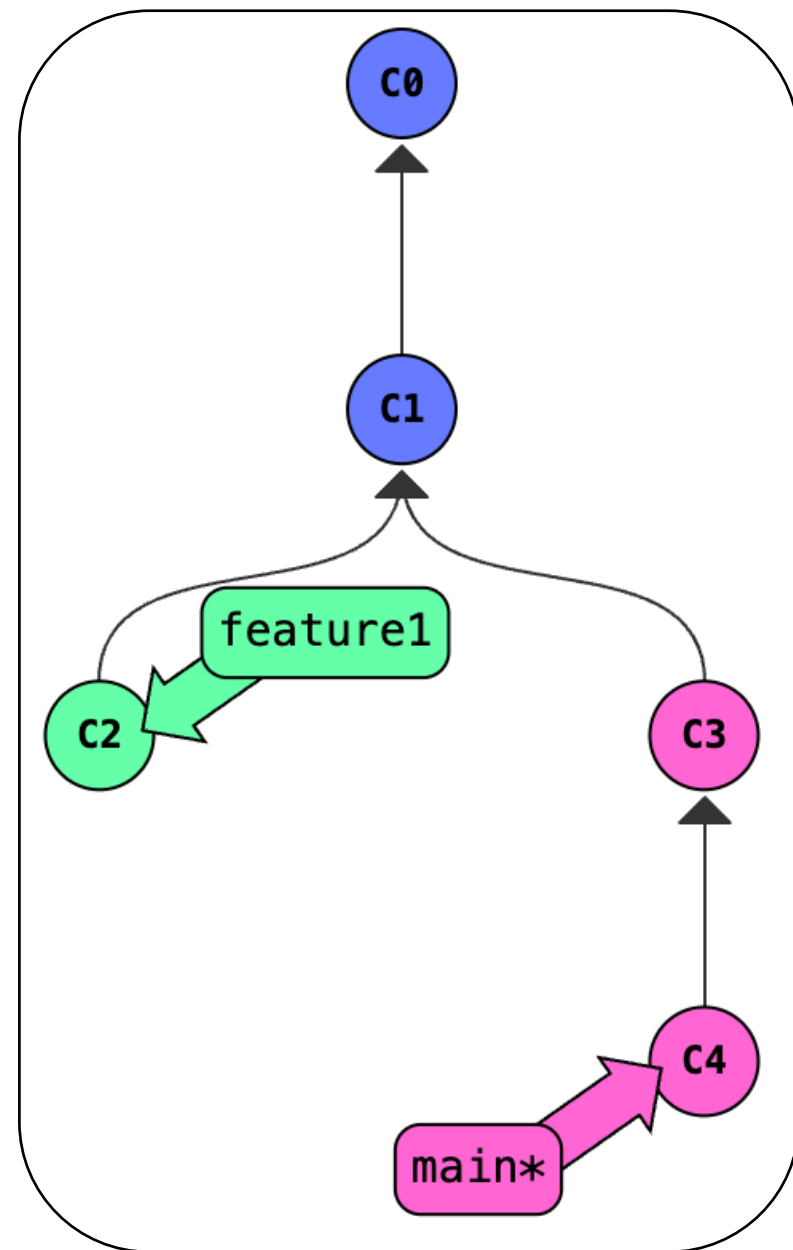
<https://tyler.caraza-harter.com/cs320/learnGitBranching/index.html>



```
$ git branch feature1
$ git checkout feature1
$ git commit
$ git checkout master
$ git commit -m 'v1'
$ git commit
```



# Merging without Conflicts



**Switch branch**

`git merge frombranch`

add whatever is there to the current branch

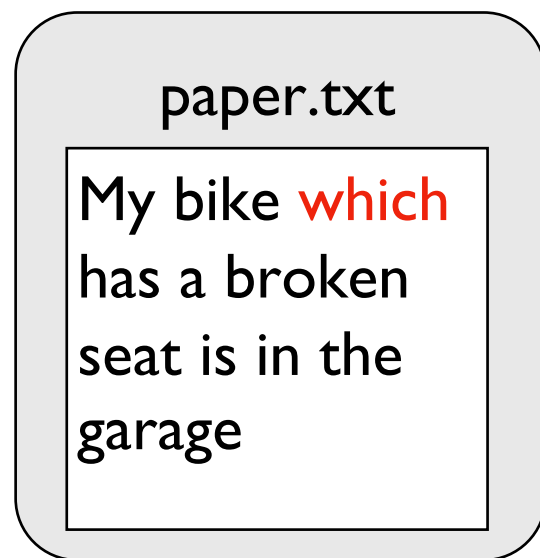
tip (or learn vim):

`export EDITOR=nano`

# Merging with Conflicts

What happens when two people try to fix the same issue, in two different (incompatible) ways?

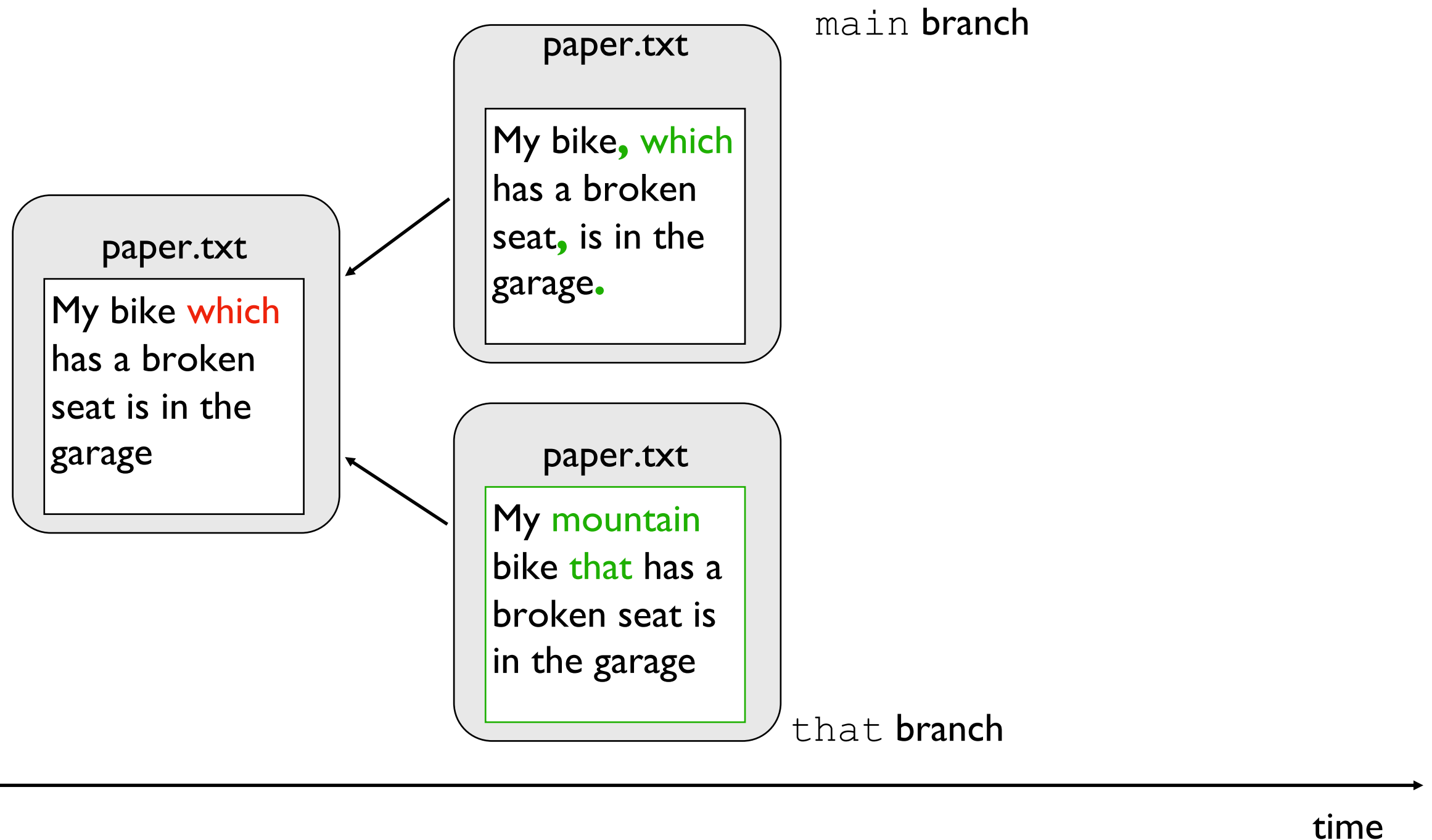
main branch



time

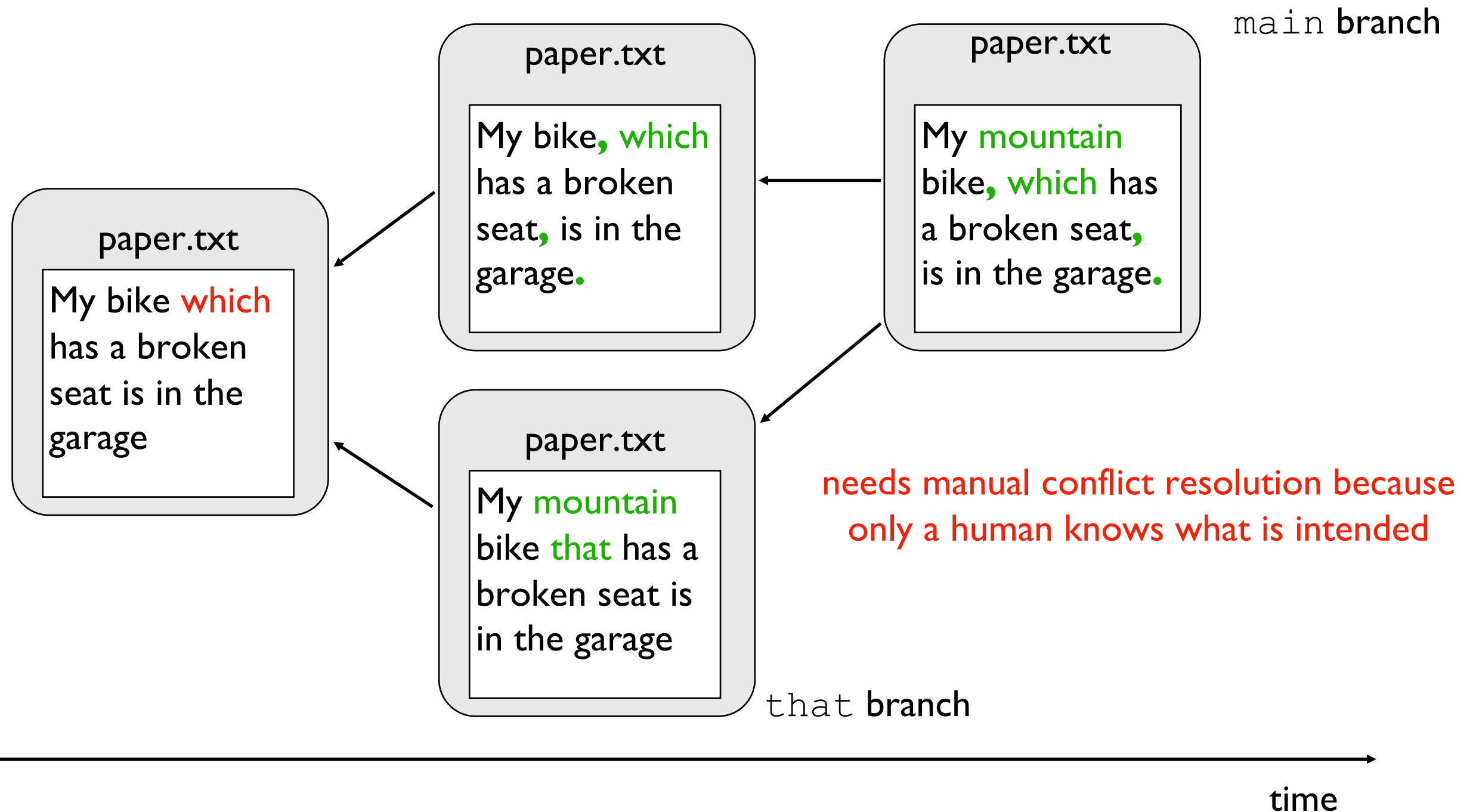
# Merging with Conflicts

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# Merging with Conflicts

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# Summary of Terms

**commit:** a snapshot of files at a point in time

**HEAD:** a convenient label for the current commit

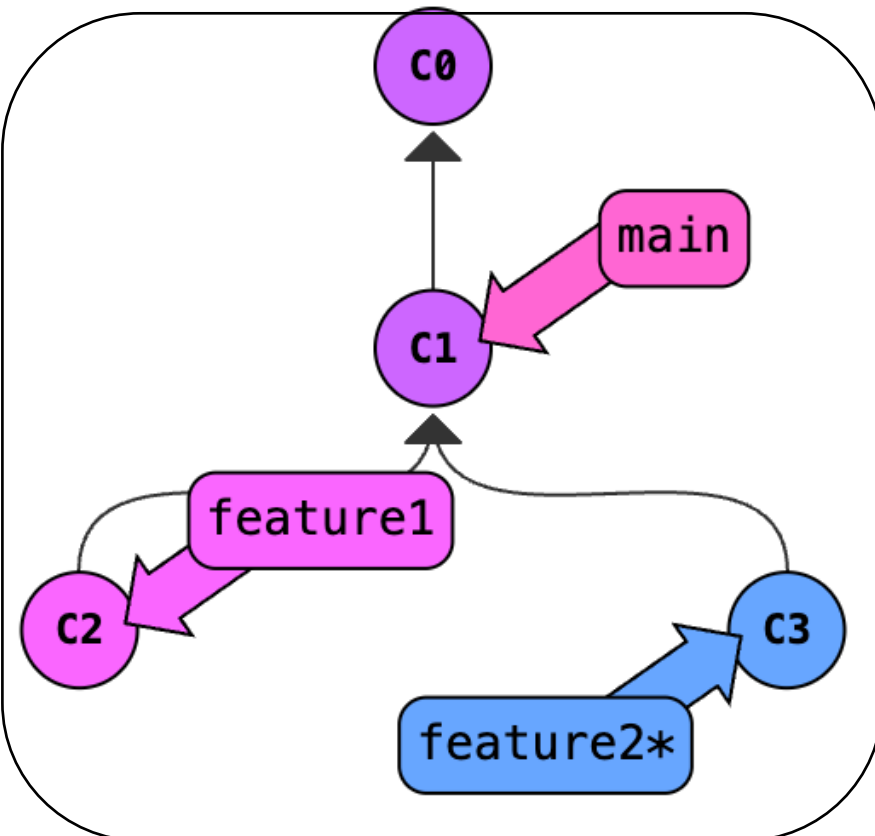
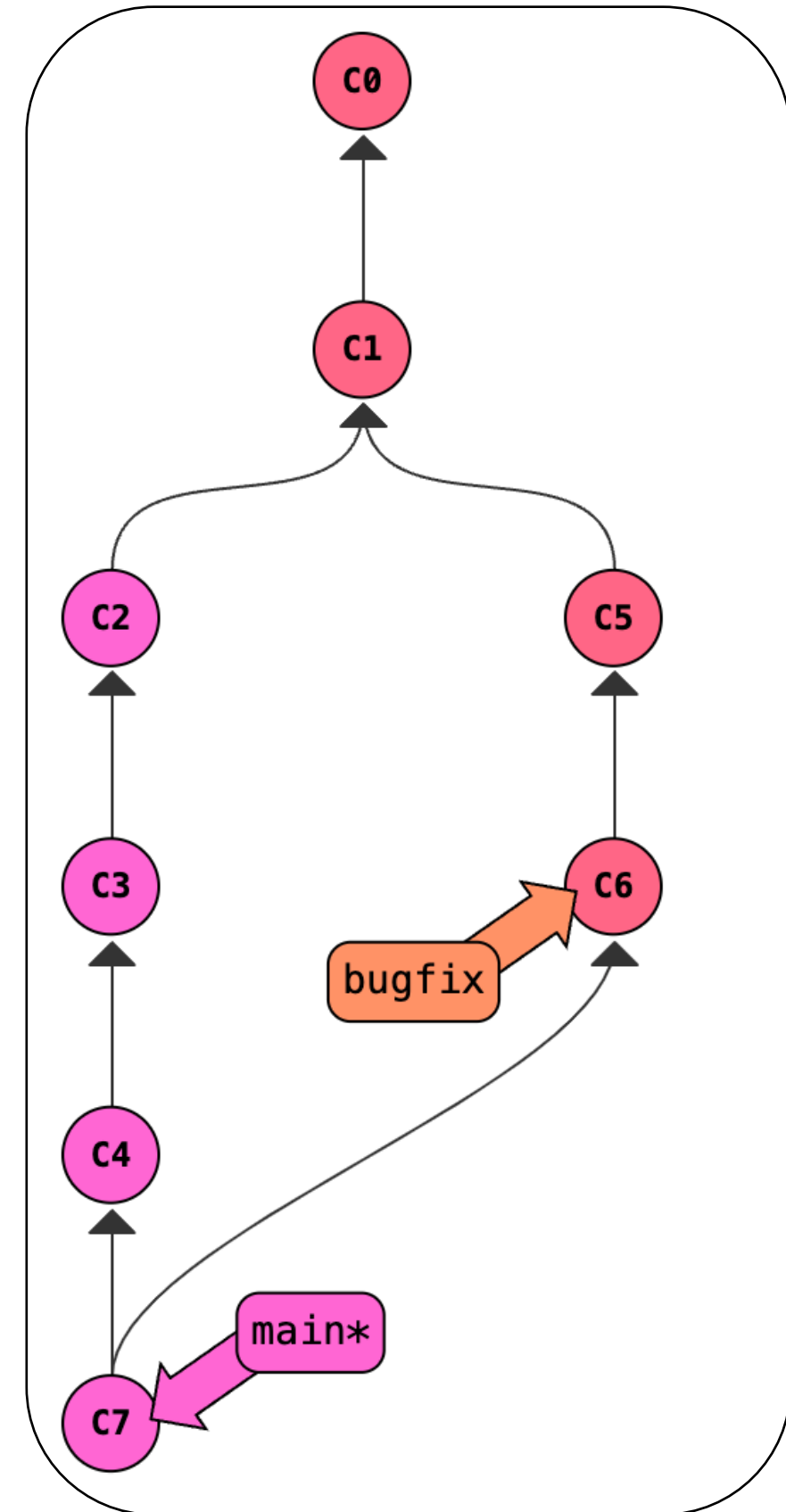
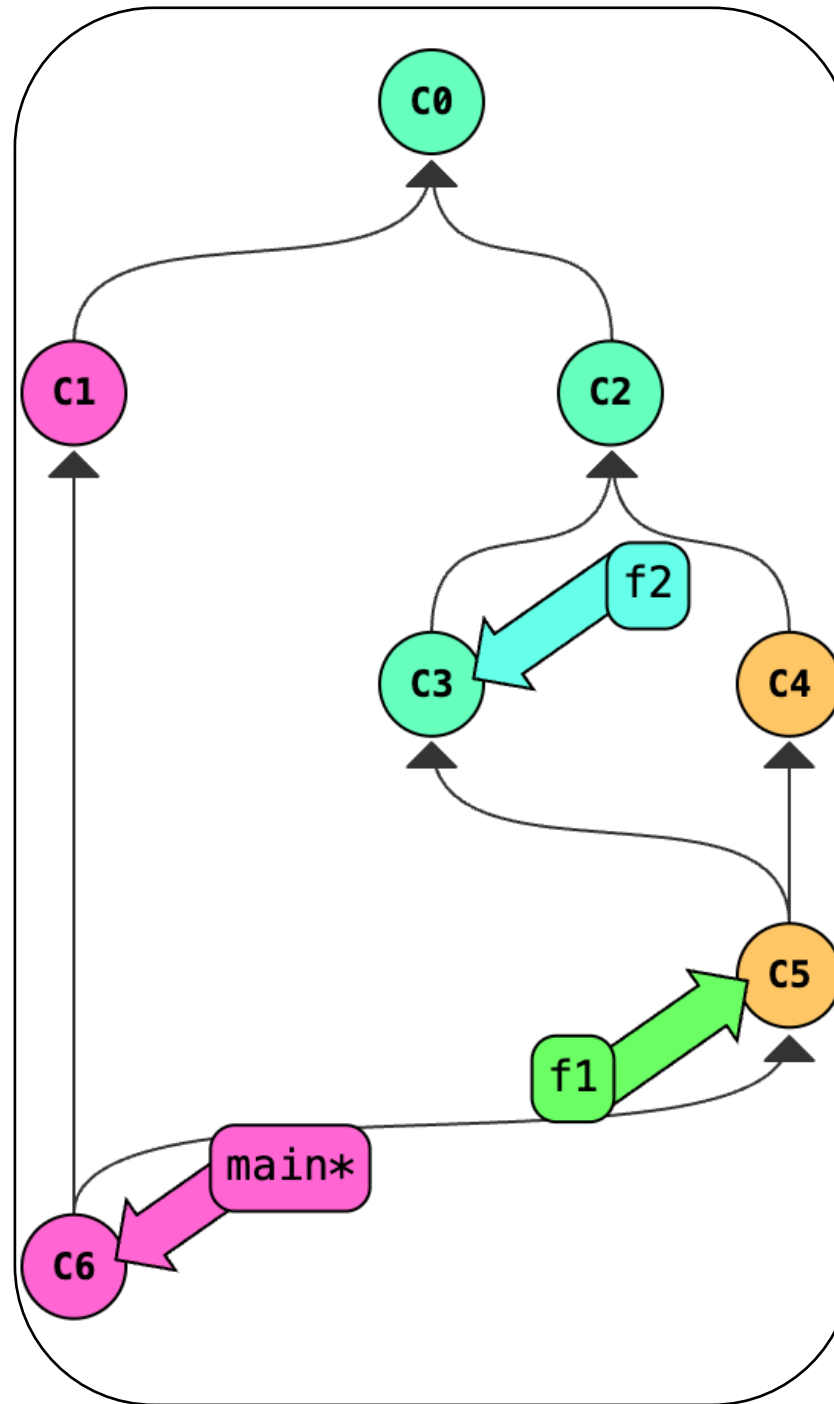
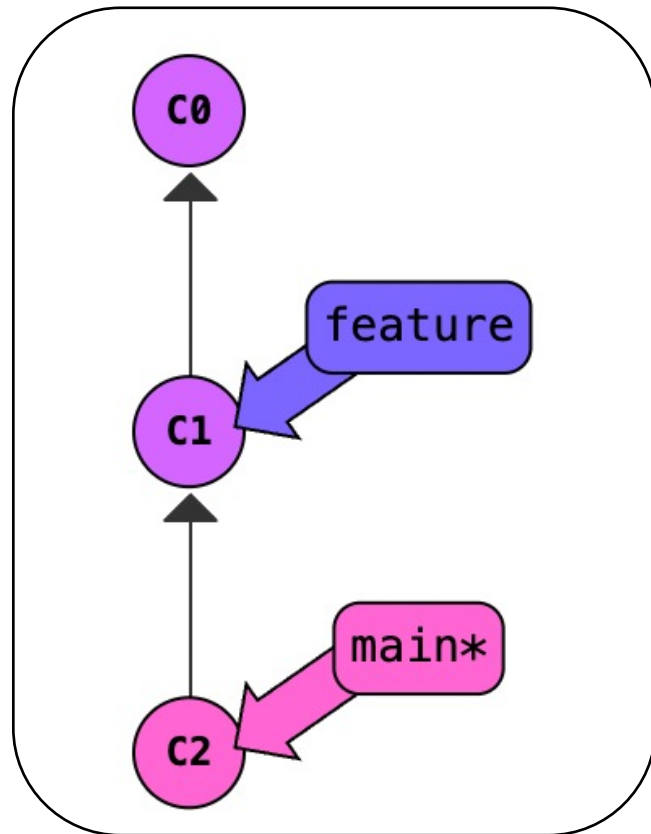
**tag:** a long-term label associated with a commit

**branch:** a label attached to a commit that re-attaches to new commits

**merge:** to combine changes on another branch into the current branch

**conflict:** differences that cannot automatically be merged

Challenges (figure out how to reproduce):





Before class:

1. P1 release
2. Student information survey due tonight
3. Screenshots for lab 1A due tonight
4. Quiz 1 due Thursday night

### **Bug Tracing:**

Ctrl + R:

pwd:

ls:

git clone URL:

cd directory:

cd ..:

git pull:

cat:

python3 xxx.py:

<xxx>:

[xxx]:

Tab:

sys.argv:

git status:

git diff:

git restore file:

:q:

git add file:

git commit + nano:

git commit -m "msg":

git log:

git checkout commit\_number:

git checkout main:

git push:

### **Git Simulator:**

Detached head:

Attached head (branch\_name\*):

Ghost commit:

git branch:

git checkout branch\_name:

git checkout -b branch\_name:

git tag:

A head can only point to a branch (never a tag)

git merge:

fast forward merge:

non fast forward merge:

**Conflict Resolution:**

mkdir:

git init:

# of commits in git log: