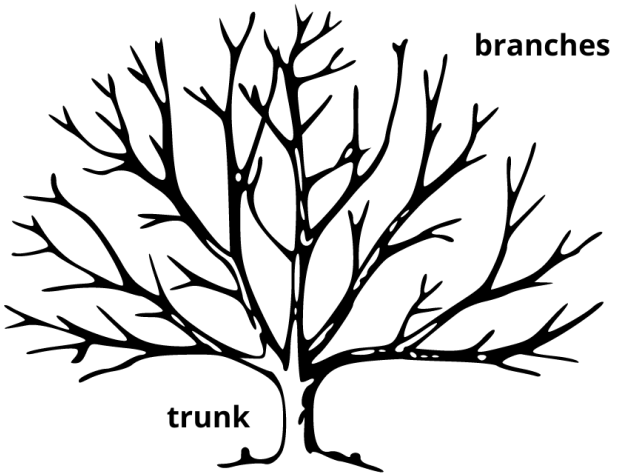
# Introduction to Branching

# Branching



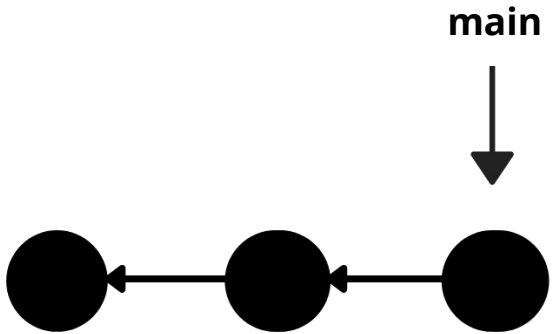
- Branch in git comparable to branch of a tree
- Creates copies of programs or objects in the development process
- Allows you to work in the parallel environment



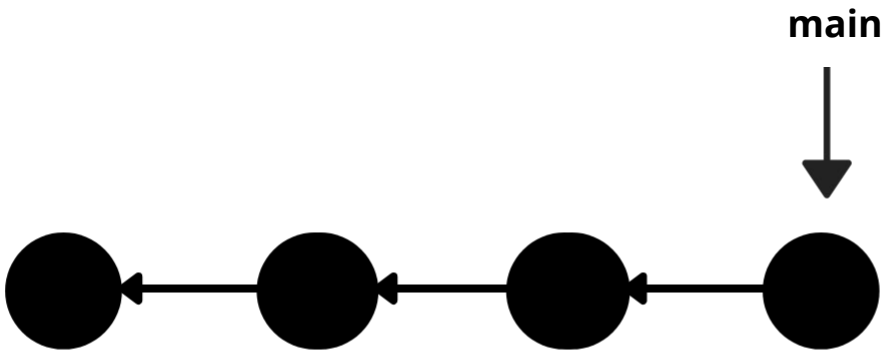
# Main Branch



- Comparable to the trunk of the tree
- Created as soon as you create your repository (default branch)
- Head points to the last commit you made
- Moves forward automatically



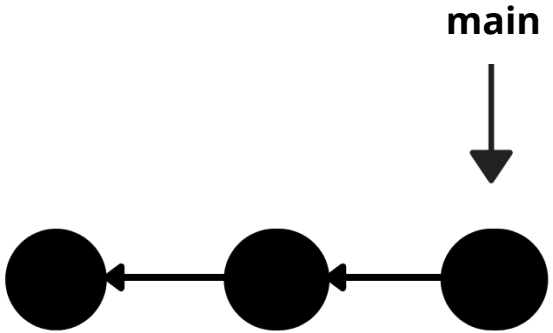
# Another Commit



# Why Branching?



- Let us see an example

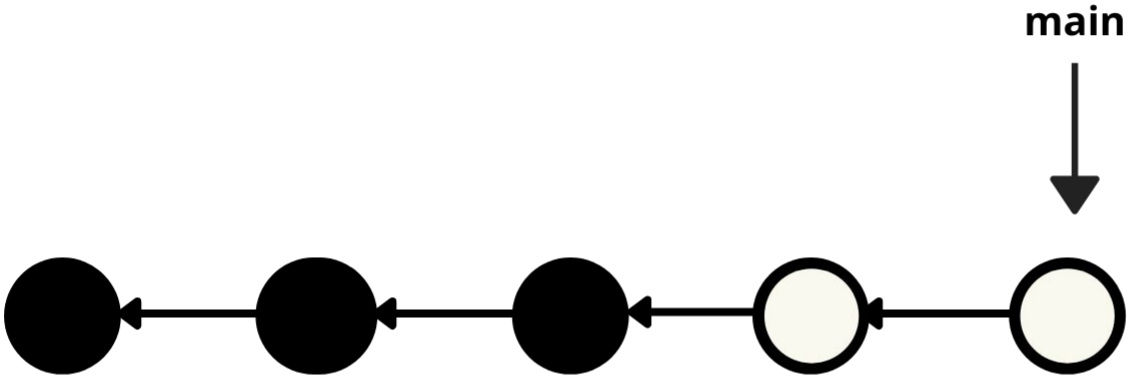



Initial Condition

# Why Branching?



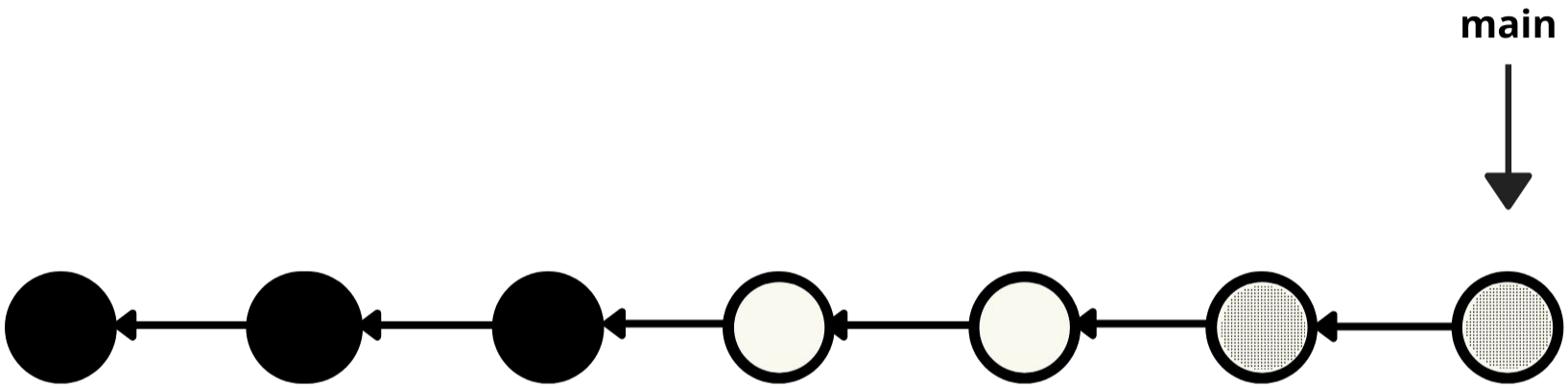
- You want to add a feature



# Why Branching?



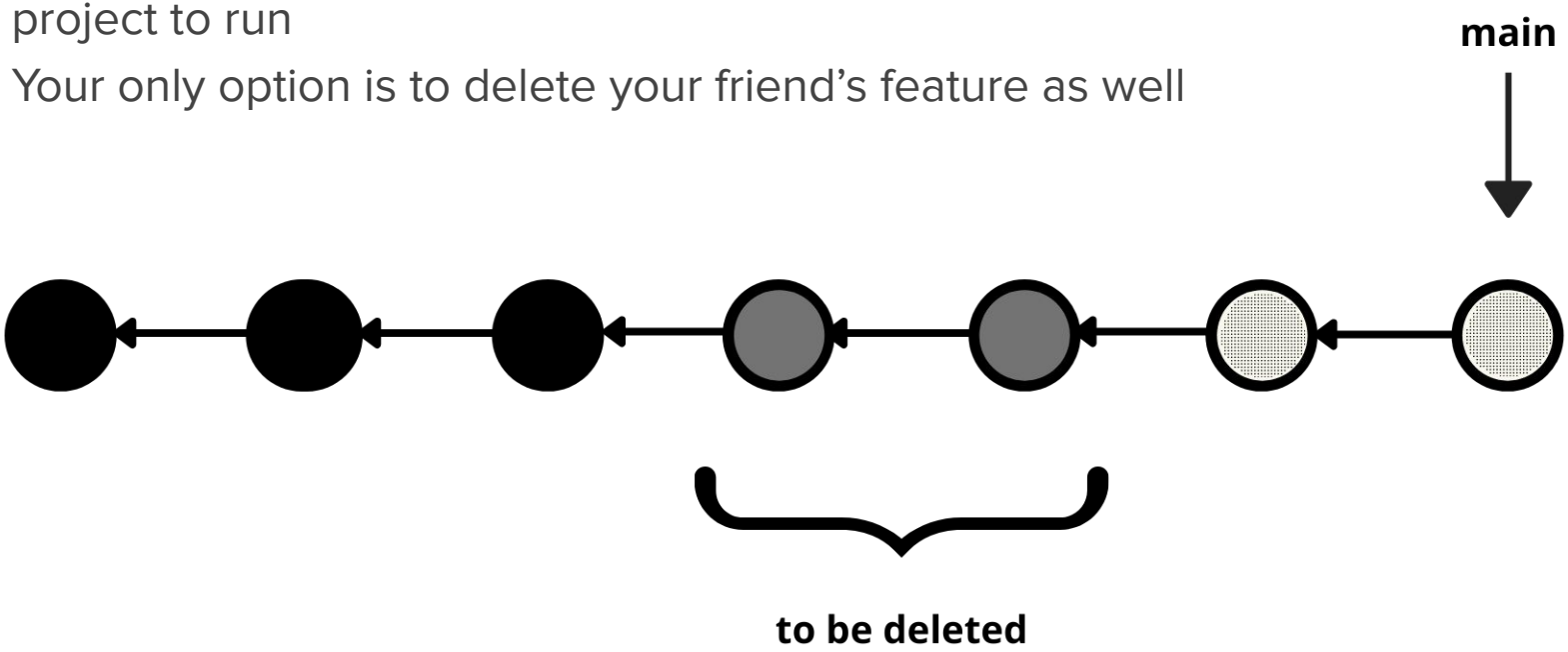
- Your project partner adds another feature



# Why Branching?



- Later you realize, your feature was buggy and you have to delete it for the project to run
- Your only option is to delete your friend's feature as well

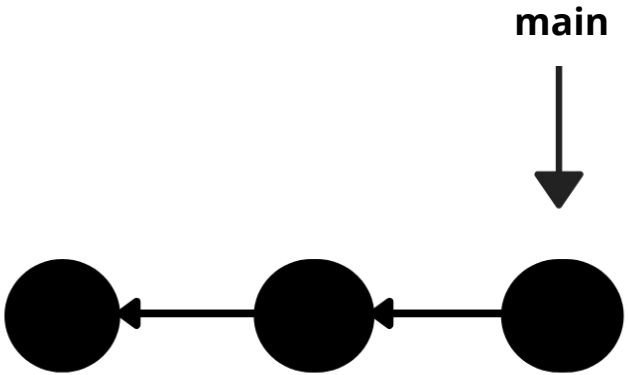


# Why Branching?

# Why Branching?



- If you had used branching,

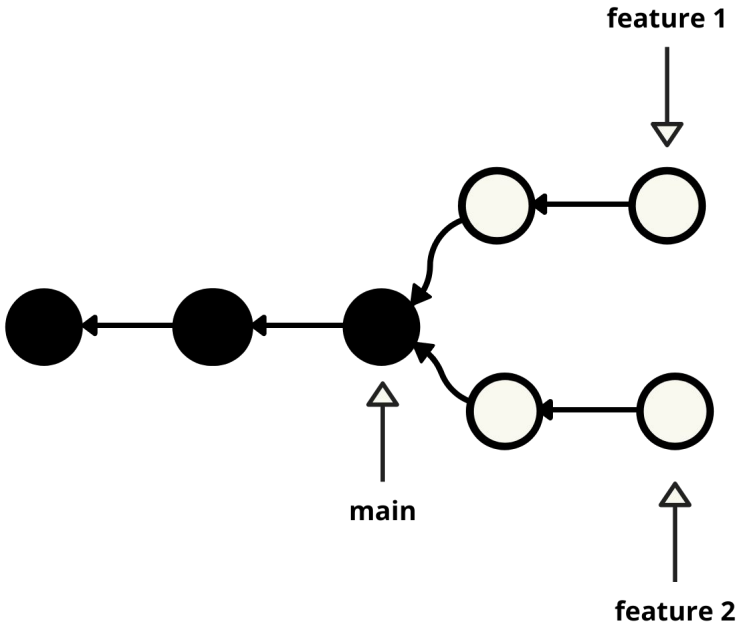



Initial Condition

# Why Branching?



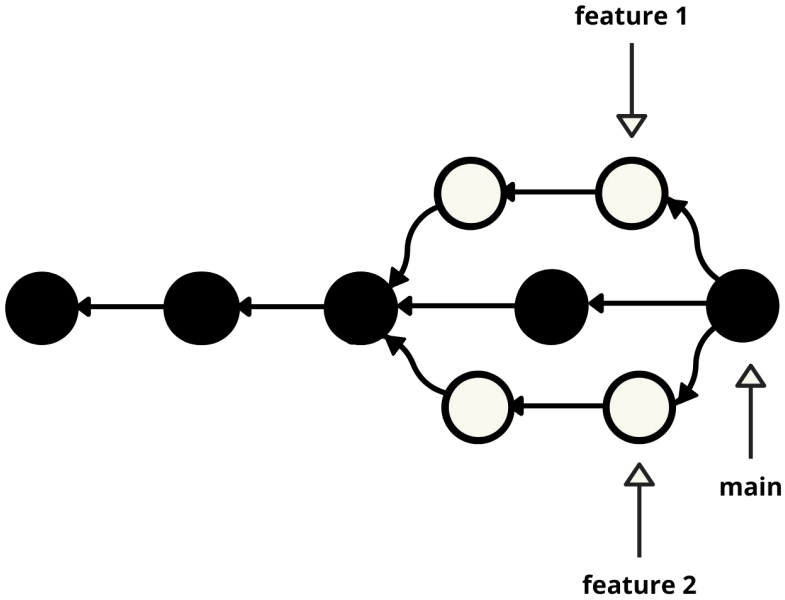
- Both you and your friend work on your respective feature on your respective branches



# Why Branching?



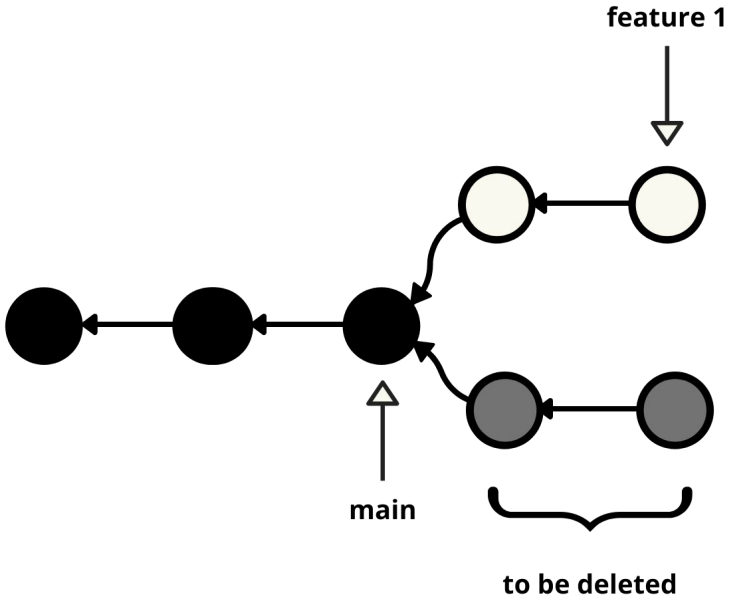
- After you are happy with your features, you can combine them
- Combining is technically called merging



# Why Branching?



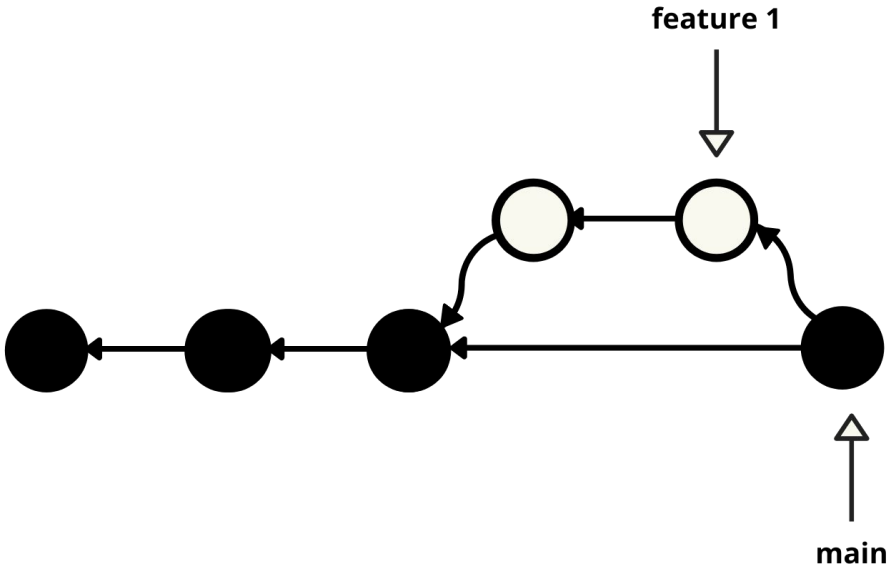
- If you are not happy with your feature, you can delete it very simply



# Why Branching?



- You can combine the remaining brach with your main branch



# Why Branching?

# Important Commands



**git branch** : List branches (the asterisk denotes the current branch)

**git branch [branch name]** : Create a new branch

**git branch -d [branch name]** : Delete a branch

**git checkout -b [branch name]** : Create a new branch and switch to it

**git checkout [branch name]** : Switch to a branch

**git branch -m [old branch name] [new branch name]** : Rename a local branch

# Branching

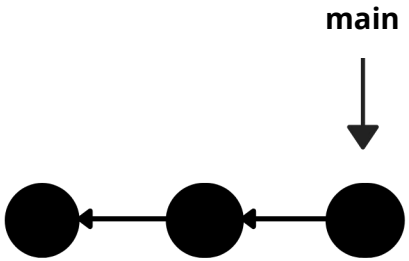


Let’s do some demonstrations

# Merging



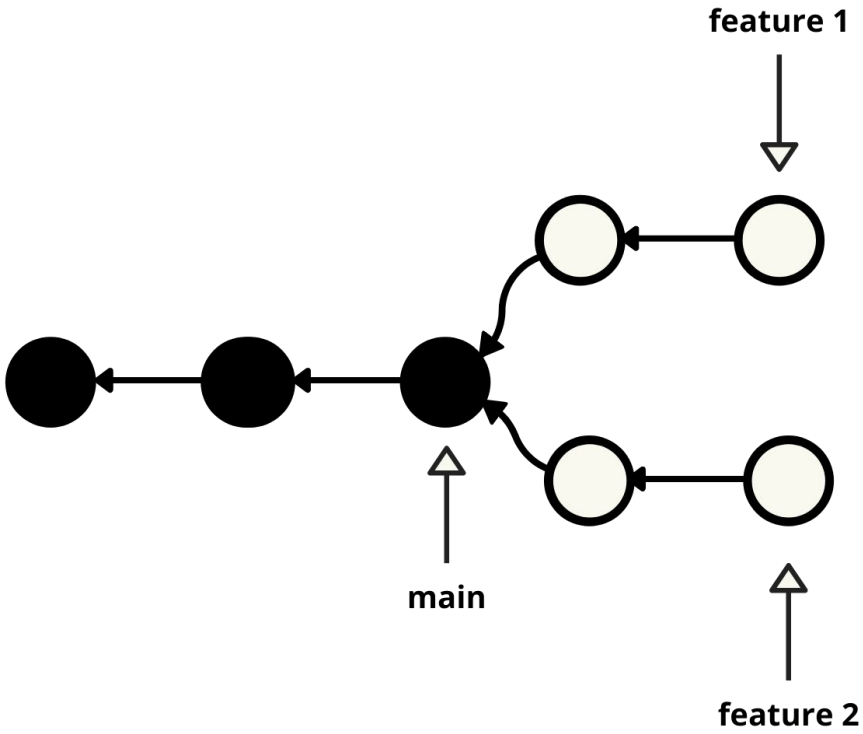
- Merging simply means combining
- Different lines of code present in independent branches are integrated into a single branch (generally the main branch)
- Let us revisit our example




**Initial Condition**

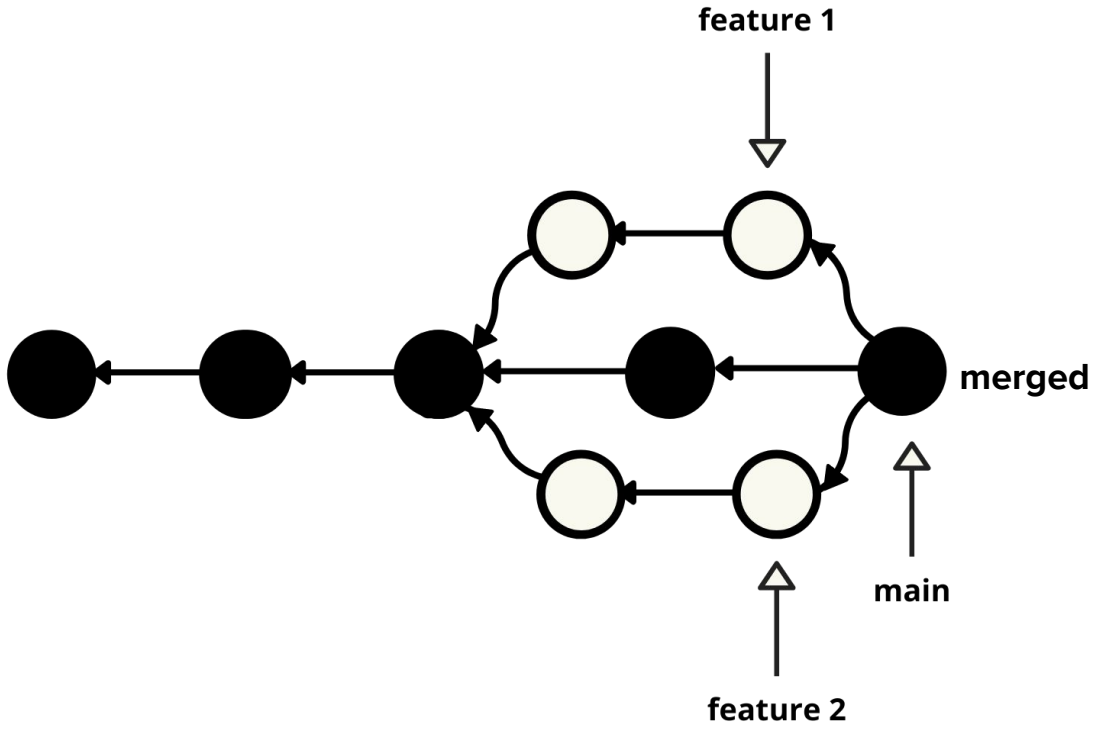
# Merging





# Merging





# Merging

# Important Commands



**git merge [branch name]** : Merge a branch into the active branch

**git merge [source branch] [target branch]** : Merge a branch into a target branch

# Merging

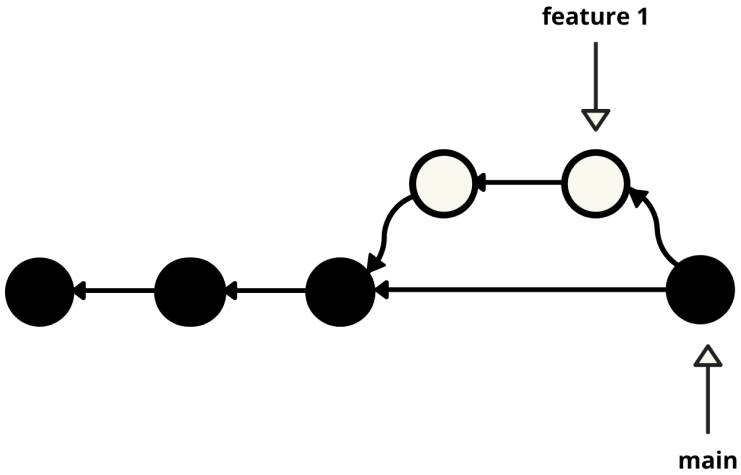


Let’s do some demonstrations

# Fast Forwarding



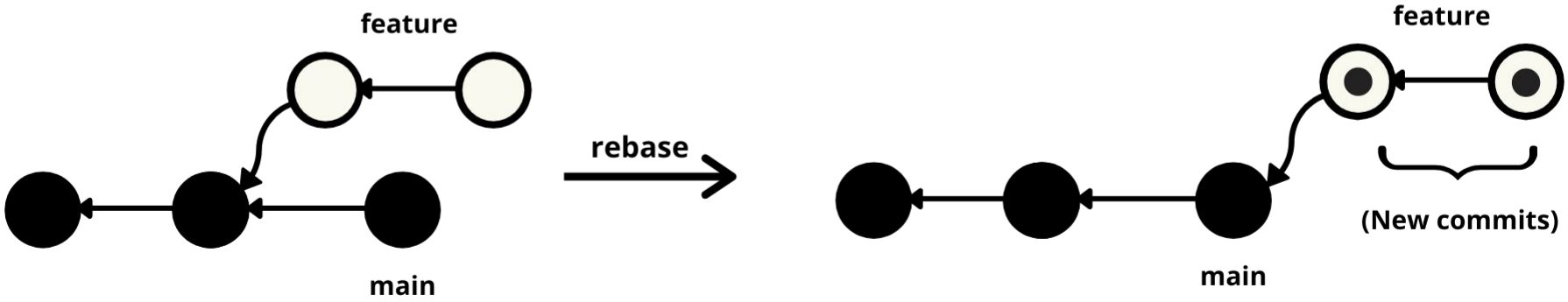
- Merging that occurs when there is a linear path from the current branch tip to the target branch
- In fast forwarding, instead of merging, the histories are integrated



# Rebasing

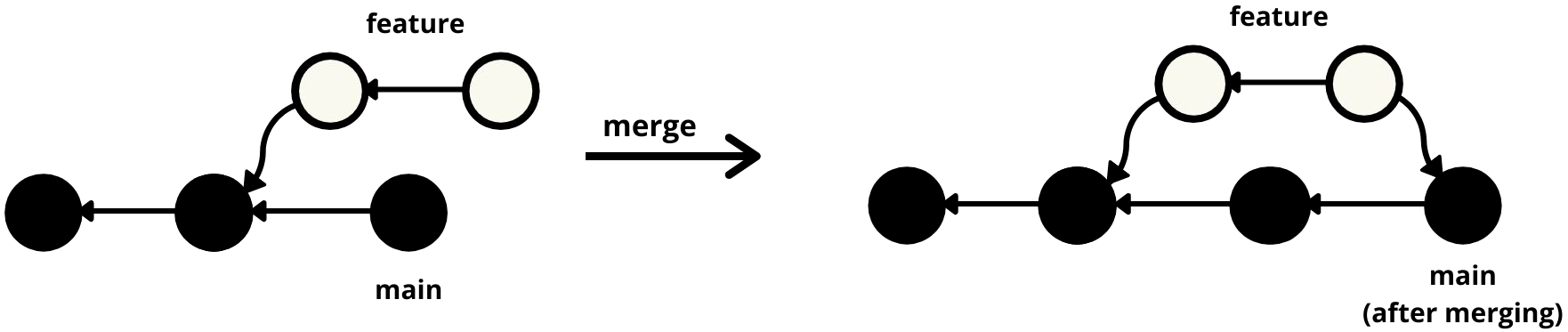


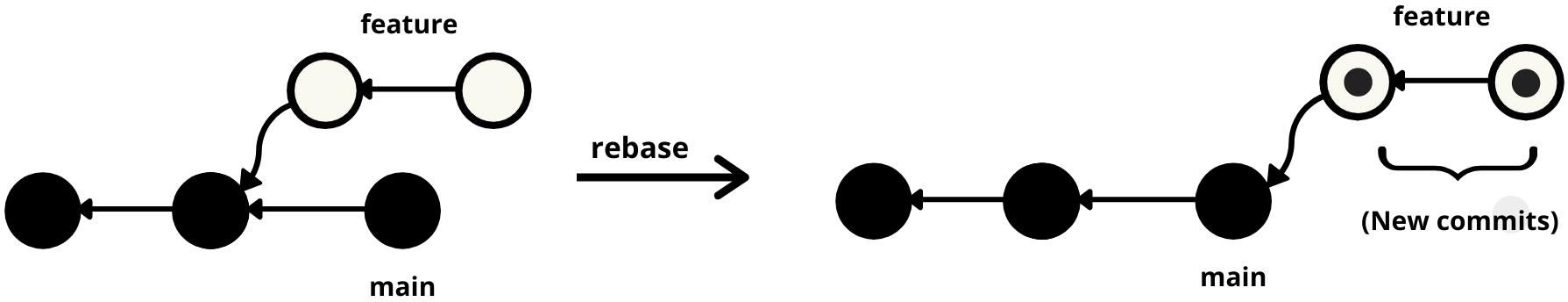
- Another way to integrate changes from one branch to another.
- Rewinds the head to replay your work on top of it.
- Rewrites history by creating new commits



# Merge vs. Rebase





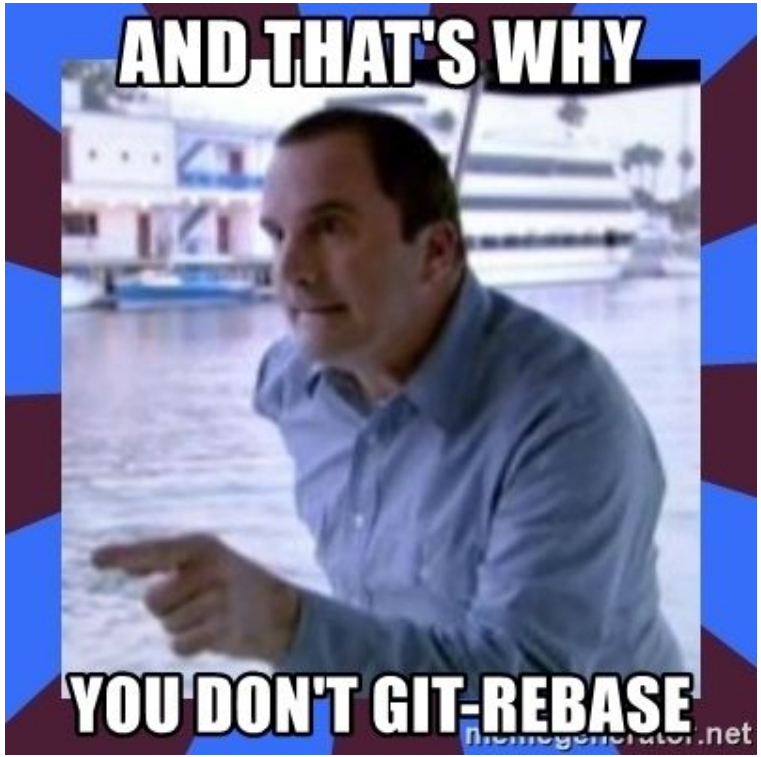
# Merge vs. Rebase



Let’s do some demonstrations

# Merge vs. Rebase





# A final demonstration

# Merging

BRACE YOURSELF
MERGE CONFLICTS ARE COMING
memegenerator.net

# Thank You!