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git cheat sheet

getting started

start a new repo:
```
git init
```
clone an existing repo:
```
git clone $URL
```

know where you are

```
git status
```

prepare to commit

add untracked file:
(or unstaged changes)
```
git add $FILE
```
add ALL untracked files and unstaged changes:
```
git add .
```
choose which parts of a file to stage:
```
git add -p
```
delete or move file:
```
git rm $FILE
git mv $OLD $NEW
```
tell git to forget about a file without deleting it:
```
git rm --cached $FILE
```
unstage everything:
```
git reset HEAD
```

make commits

make a commit:
(and open a text editor to write the message)
```
git commit
```
make a commit:
```
git commit -m 'message'
```
commit all unstaged changes:
```
git commit -am 'message'
```

move between branches

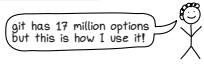
switch branches:
```
git switch $NAME  OR
git checkout $NAME
```
create a branch:
```
git switch -c $NAME OR
git checkout -b $NAME
```
list branches:
```
git branch
```
delete a branch
```
git branch -d $NAME
```
force delete a branch:
```
git branch -D $NAME
```
list branches by most recently committed to:
```
git branch
  --sort=-committerdate
```

look at a branch's history

log the branch
```
git log main
```
show how two branches relate to each other:
```
git log --graph a...b
```
one line log:
```
git log --oneline
```

code archaeology

show who last changed each line of a file:
```
git blame $FILENAME
```
show every commit that modified a file:
```
git log $FILENAME
```
find every commit that added or removed some text:
```
git log -S banana
```



diff commits

show diff between a commit and its parent:
```
git show $COMMIT_ID
```
diff two commits:
```
git diff $COMMIT_ID $COMMIT_ID
```
just show diff for one file:
```
git diff $COMMIT_ID $FILENAME
```
show a summary of a diff:
```
git diff $COMMIT_ID --stat
git show $COMMIT_ID --stat
```

diff staged/unstaged changes

diff all staged and unstaged changes:
```
git diff HEAD
```
diff just staged changes:
```
git diff --staged
```
diff just unstaged changes:
```
git diff
```

configure git

set a config option:
```
git config user.name 'Julia'
```
name value

see all possible config options:
```
man git-config
```
set option globally:
```
git config --global ...
```
add an alias:
```
git config alias.st status
```

important git files

local git config:
```
.git/config
```
global git config:
```
~/.gitconfig
```
list of files to ignore:
```
.gitignore
```

trash your changes

delete all staged and unstaged changes to one file:
```
git checkout HEAD $FILE
```
delete unstaged changes to one file:
```
git checkout $FILE
```
delete all staged and unstaged changes:
```
git reset --hard
```
delete untracked files:
```
git clean
```
"stash" all staged and unstaged changes (pretend I might get them back later)
```
git stash
```

edit history

"undo" the most recent commit (Keep your working directory the same):
```
git reset HEAD^
```
squash the last 5 commits into one:
```
git rebase -i HEAD^^^^^^
```
(and change "pick" to "fixup" for any commit I want to combine with the previous one)

undo a failed rebase:
```
git reflog BRANCHNAME
```
do a painstaking search
```
git reset --hard $COMMIT_ID
```
change a commit message:
(or add a file you forgot)
```
git commit --amend
```

restore an old file

get the version of a file from another branch or commit
```
git checkout $COMMIT_ID $FILE
```
OR
```
git restore $FILE
  --source $COMMIT_ID
```

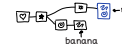
combine diverged branches

how the branches look before:

→ combine with rebase:
```
git switch banana
git rebase main
```

→ combine with merge:
```
git switch main
git merge banana
git commit
```

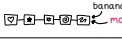
→ combine with squash merge:
```
git switch main
git merge --squash banana
git commit
```



bring a branch up to date with another branch

(aka "fast-forward merge")


```
git switch main
git merge banana
```



copy one commit onto another branch

before:


```
git cherry-pick $COMMIT_ID
```

after:

add a remote

```
git remote add $NAME $URL
```

push your changes

push the `main` branch to the remote `origin`:
```
git push origin main
```
push a branch to the remote `origin` that you've never pushed before:
```
git push -u origin $NAME
```
push the current branch to its remote "tracking branch":
```
git push
```
force push:
```
git push --force-with-lease
```
push tags:
```
git push --tags
```

pull changes

fetch changes:
(but don't change any of your local branches)
```
git fetch origin main
```
fetch changes and then merge them into your current branch:
```
git pull origin main  OR
git pull
```
fetch changes and then rebase your current branch:
```
git pull --rebase
```
fetch all branches:
```
git fetch --all
```

ways to refer to a commit

every time we say $COMMIT_ID, you can use any of these:

a branch	main
a tag	v0.1
a commit ID	3e887ab
a remote branch	origin/main
current commit	HEAD
3 commits ago	HEAD^^^
3 commits ago	HEAD~3