



Chapter 22

Git More Collaboration



Chapter Breakdown

- 22.1 What is Git?
- 22.2 Repositories and Commits
- 22.3 Remote Repositories
- 22.4 Branches
- 22.5 Merging in Git



22.1 What is Git?

What is Git?

Version Control Systems Getting Started with Git

Version Control Systems(VCS)

- Tracks changes to a code base and stores each version.
- Allows programmers to roll back to previous versions of things blow up
- A VCS has a repository or storage container for the code base
- A Commit is when a programmer updates the repository.

Install Git and Visual Studio Code



22.2 Repositories and Commits



Repositories and Commits

Create a repository
Making Commits

```
Students-Computer:~ student$ mkdir homework
Students-Computer:~ student$ cd homework
Students-Computer:homework student$ git init
Initialized empty Git repository in /Users/student/homework/.git/
```

```
Students-Computer:homework student$ git status
On branch master

Initial commit

Untracked files:
  (use "git add <file>..." to include in what will be committed)

    learning-git.js

nothing added to commit but untracked files present (use "git add" to track)
Students-Computer:homework student$ git add .
Students-Computer:homework student$ git commit -m "My first commit"
[master (root-commit) 2c1e0af] My first commit
 1 file changed, 1 insertion(+)
   create mode 100644 learning-git.js
Students-Computer:homework student$ git log
commit 2c1e0af9467217d76c7e3c48bcf9389ceaa4714b
Author: Student <lc101.student@email.com>
Date:   Wed Apr 24 14:44:59 2019 -0500

    My first commit
```

22.3 REMOTE REPOSITORIES

REMOTE REPOSITORIES

Local, Remote, Github, Oh My!
Collaborating with Colleagues
Contributing to a Remote Repository

- Instead of using just your local repository you can store your code in a remote repository.
- Github/Gitlab/BitBucket are all places where you could store your remote repository
- You can clone a remote repository by using the git clone <url> command.
- Once you make a change/new feature it is time to commit.
 - `git status`
 - `git add`
 - `git commit`
 - `git push origin master`
 - `git log`

22.4 BRANCHES

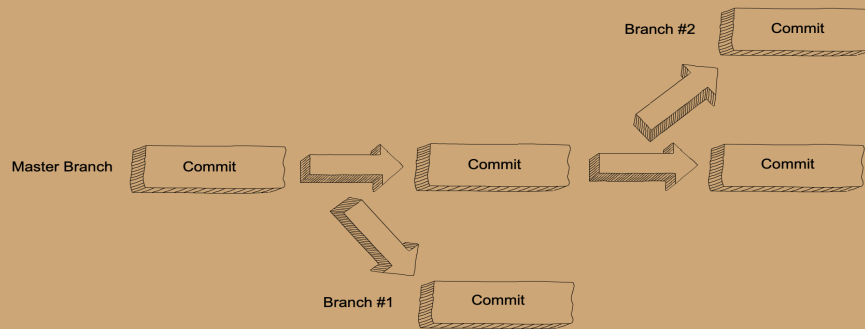


BRANCHES

Branching in Git

Creating a new Branch

Switching to an Existing Branch



A Branch is a separate version of the same code base. He is also a Troll.

Can be used in collaboration and when developing new features.

`git checkout -b <branch name>`

`git checkout <branch name>`

22.5 MERGING IN GIT

MERGING IN GIT

How to merge
Merge Conflicts
Ways to avoid Merge Conflicts

- How to Merge
 - Command to merge a branch into master is
 - `git merge <branch>`
 - You will want to do this in the GUI if possible
 - Merge Conflicts
 - These happen when developers change the same code on multiple branches
 - Ways to Avoid Merge Conflicts
 - Git can do a dry run. It will output what will happen but it won't actually merge the code
 - Communication with your team. If you think there could be a Merge Conflict its good to resolve it sooner rather than later.
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