Intro to Git

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Last week...

Last week we covered pointers and interfaces. We looked at how a pointer type stores the address where the computer can find the value.

We also looked at interfaces, and how they are special types which describe **functionality**, which are useful for making your programs more flexible.

Today

- Intro to Git
  - What is it?
  - Why Git?
  - How do we use it?
  - Terms
- Creating a repository
- Working with a repository

What is Git?

TLDR: Git is a tool for tracking changes to files.

Git is all about **change tracking**. In programming, we primarily use it to track changes to our files over time. This is useful if you want to see what a piece of code looked like in the past.

Git works within set *repositories*. Each repository is separate from one another, and all file changes within the repository are tracked.

What is Git?

Git is also about tracking **who** made changes. Each change is recorded with a corresponding email, so the person making changes can identify themselves.

Information about **when** changes were made is also stored. Through proper use, it is also able to track **why** changes have been made.

Why Git?

Git is used by >70 percent of developers.

Git is distributed, meaning there is no single source of truth. However, we do use services which can host git repositories, like Github.

It allows us to propose changes in a structured manner. This makes development much easier when you have a large number of people contributing to the same set of files.

There are other *version control systems* around. Some alternatives to Git are, Mercurial, Apache SVN, Bazaar, Fossil etc. However these are less widely used in the industry.

Terms

- **Repository**: encompasses the entire collection of files and folders associated with a project, along with each file's revision history.
- **Commit**: an individual set of changes made to a repository at a given time, also points to the previous and next commits in the chain.
- **Branch**: a line of development within the repository, can be multiple in parallel.

Installing Git

If you're using a Mac, then you already have Git installed.

Otherwise, you can download it at:

https://git-scm.com/downloads

Practical: Creating a Repository

Let's create our first repository.

1. Open up a terminal

Practical: Creating a Repository

Let's create our first repository.

1. Open up a terminal
2. Something