Introduction to Python

Lecture 6: Git and Collaboration

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Git

- Git is a version control system that lets you manage and keep track of your source code history.
- Git is a distributed version control system, meaning that the entire codebase and history is available on every developer's computer, which allows for easy branching and merging.
- Git is the most commonly used version control system, and is used as the basis for many other services and tools.

Cloning

- Cloning is the process of downloading or copying a repository to the destination location from the server/source.
- Cloning a repository pulls down a full copy of all the repository data that GitHub has at that point in time, including all versions of every file and folder for the project.
- You can clone your existing repository or clone another person's existing repository to contribute to a project.

Pulling

- Pulling is the process of downloading and merging changes from a remote repository into your local repository.
- You can think of this as the opposite of pushing.
- Pulling is a combination of `git fetch` and `git merge`.

Pushing

- Pushing is the process of uploading your local changes to a remote repository.
- It's the counterpart to `git pull`, but whereas fetching imports commits to local branches, pushing exports commits to remote branches.
- This has the potential to overwrite changes, so you need to be careful.

Committing

- Committing is the process of creating a snapshot of your changes.
- Git compares the committed snapshots and determines what has changed since the last commit.
- You can think of this as a save point in a game.

Branching

- Branching is the process of creating copies of a repository in order to develop features or make bug fixes isolated from the main codebase.
- Each repository has one default branch, and can have multiple other branches.
- You can merge a branch into another branch using a pull request.

Git Workflow

- Create a new branch.
- Add commits.
- Open a pull request.
- Discuss and review your code.
- Deploy.
- Merge.

[language=bash] git checkout -b new-branch git add . git commit -m "message" git push origin new-branch