Git & Version Control - Coding Challenges

Topic: Introduction to Version Control

Create a Simple File and Track It

Create a file named "hello.txt", write "Hello, Version Control" in it. Initialize a Git repo and commit it.

Commands:

echo "Hello, Version Control" > hello.txt

git init

git add hello.txt

git commit -m "Initial commit: Add hello.txt"

Modify a File and Commit Changes

Append "Learning Git!" to hello.txt and commit the changes.

Commands:

echo "Learning Git!" >> hello.txt

git add hello.txt

git commit -m "Updated hello.txt with learning message"

View Commit History

List the commit history of the repository.

Command:

git log --oneline --author

Topic: Understanding Git

Clone a Public Repository

Clone the repository at https://github.com/octocat/Spoon-Knife

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Command:

git clone https://github.com/octocat/Spoon-Knife.git

Inspect File Differences

After making changes to a file, view what has changed.

Command:

git diff

View Status and Current Branch

Check current branch and status of your files.

Commands:

git branch

git status

Topic: Setting Up Git

Configure Git User Globally

Set global Git username and email.

Commands:

git config --global user.name "Student Dev"

git config --global user.email "student@example.com"

Initialize and Check Configuration

Initialize a new Git repo and verify username.

Commands:

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git init

git config --global user.name

Create a .gitignore File

Create a .gitignore to ignore all .log files.

Commands:

echo "*.log" > .gitignore

git add .gitignore

git commit -m "Add .gitignore to exclude .log files"

Topic: Basic Git Commands

Create a New Branch and Switch to It

Create and switch to a branch named feature-1.

Commands:

git branch feature-1

git checkout feature-1

Merge Branch to Main

Switch to main and merge feature-1.

Commands:

git checkout main

git merge feature-1

Revert the Last Commit

Undo the last commit but keep changes unstaged.

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Command:

git reset --soft HEAD~1