

Bootcamp 134 | Python

Course 07 | Version Controlling



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Content

- Introduction to Version Control
- Git Basics
- Creating a Local Repository
- Working with GitHub
- Basic GitHub Workflow
- Group Practice

Introduction to Version Control

► Purpose of version control and why developers use it

Feature	Git	SVN (Subversion)
 Version Control Model	Distributed	Centralized
 Repository	Each developer has a full local copy	Only one central repository
 Internet Dependency	Most operations can be done offline	Requires connection for most operations
 File Management	Stores snapshots of entire project	Stores file-based changes (deltas)
 Branching & Merging	Fast, lightweight, and easy	Slower and more complex
 Access Control	Harder to manage fine-grained access	Better access control per directory
 Speed	Very fast (local operations)	Slower due to network dependence
 Binary File Support	Not great	Better than Git
 Repository Size	Typically smaller	Larger due to storing file history
 Tag & Branch Management	Tags/branches as lightweight refs	Treated as full directories
 Popular Tools/Hosting	GitHub, GitLab, Bitbucket	Apache Subversion, VisualSVN
 Learning Curve	Steeper (more concepts to learn)	Easier to start with

Git Basics | Installing

- ▶ Check the Git version :

```
git --version    # git version 2.34.1
```

- ▶ If you get error like this: *<command not found: git>*, install it:

```
sudo apt update
```

```
sudo apt install git
```

- ▶ Check the Git version again.

```
git --version    # git version 2.34.1
```

Git Basics | Setting Up

- Introduce yourself to the Git

git config --global user.name <name of account>

git config --global user.email <mail of account>

Creating a Local Repository

- Create a new repository

git init

Basic commands

git add .

add to staging area

git commit -m <your message>

add to local repo

git status

check status

Working with GitHub

- Creating a GitHub Account
- Creating a Remote Repository
- Connecting Local Repo to GitHub
 - `git remote add <remote name> git@github.com:<yourusername>/project.git`
 - `git push -u <remote name> main`

Basic GitHub Workflow

➤ Pushing Changes

- *git add .*
- *git commit -m <your message>*
- *git push*

➤ Cloning a Repository

- *git clone <repo address>*

➤ Pulling Update

- *git checkout <your dist branch>*
- *git pull*

Group Practice

- Collaborating on a Repository
- Simple Team Workflow

Any question?

Next course

- Overview of Object-Oriented Programming
- Defining Classes and Creating Objects
- The `__init__` Method
- Instance Methods and Attributes
- Class Variables vs. Instance Variables
- Class Methods and Static Methods
- Inheritance