

Title: Git and GitHub**Submitted by:**

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Duration of Learning:

3 Days

Date:

13 June 2025

About Git

Git is a distributed version control system (DVCS) created by Linus Torvalds. It allows developers to track changes, revert to previous states, and collaborate on code safely and efficiently.

About GitHub

GitHub is a cloud-based platform that hosts Git repositories. It enables team collaboration with features like pull requests, issues, code review, and project management tools.

Feature	Git (Local)	GitHub (Online)
Type	Version Control System	Hosting Service for Repositories
Internet	Not Required	Required
Collaboration	Limited (Manual sharing)	Highly collaborative tools available

Git Basic Commands:

Command	Description
git init	Initialize a new Git repository
git clone <url>	Clone remote repository to local
git add <file>	Stage changes for commit

Command	Description
git commit -m "msg"	Commit staged changes
git status	Check current file states
git log	Show commit history

Branching and Merging:

Create a branch: git checkout -b new-feature

Switch back to main: git checkout main

Merge: git merge new-feature

GitHub Workflow:

1. Clone repository
2. Create branch for new feature
3. Commit and push changes
4. Open pull request (PR)
5. Review and merge into main
6. Delete branch

What is a README.md?

A README.md file is a **Markdown** file placed in the **root of your GitHub repository** that serves as the **first impression** of your project. It explains what your project is about, how to set it up, and how to use it. GitHub automatically renders it on the main page of your repo.

Hands-on Git Practice Log

Over the past few days, I performed and tracked all Git operations using git log --stat, which shows the history of my commits, associated files, and the number of lines changed.

Below is a sample output from my system:

```
C:\Users\nsaba\python-programming\ui-study-ai>git log --stat
```

```
commit ee8d504... (HEAD -> main, origin/main)
```

```
Author: vaishnavisabapathi <p.n.v.vaishu@gmail.com>
```

```
Date: Fri Jun 13 10:16:59 2025 +0530
```

```
new file: question and ans generator using ollama
```

```
ui-study-ai/main.py      | 66  
+++++  
ui-study-ai/requirements.txt | 0  
2 files changed, 66 insertions(+)
```

...

This output proves I practiced several Git operations such as git init, git add, git commit, git push, and also tracked file changes using git log --stat. The changes I made include adding new Python scripts (ocr.py, web scrapper.py, main.py) and editing them over time, which reflects active version control usage.