Internship Day 1 Documentation

Topic: Git & GitHub Basics

Name: Soumya Ranjan Das
Internship Mode: Online
Day: 1
Date: 20/01/2026

---

1. Objective of Day 1

The objective of Day 1 was to understand the basics of **Git** and **GitHub**, including version control concepts, commonly used Git commands, and how GitHub helps in collaborative software development.

2. What is Git?

Git is a **distributed version control system** used to track changes in source code during software development. It helps developers:

- Track code changes
- Work collaboratively
- Maintain different versions of a project
- Roll back to previous versions if needed

3. What is GitHub?

GitHub is a **cloud-based platform** that hosts Git repositories. It allows developers to:

- Store code online
- Collaborate with teams
- Manage issues and pull requests
- Review code

Git vs GitHub:

- Git is a tool (installed locally)
- GitHub is a platform (online service)

4. Git Installation & Setup

For windows:
type this command in command prompt or Powershell.
winget install --id Git.Git -e --source winget

Git was successfully installed on the system and verified using:

git --version

Basic configuration:

git config --global user.name "Your Name"

git config --global user.email "your@email.com"

5. Basic Git Commands Learned

Command	Description
git init	Initialize a new Git repository
git status	Check current repository status
git add .	Add files to staging area
git commit -m "message"	Save changes with a message
git log	View commit history
git branch	List branches
git checkout -b branch-name	Create and switch branch
git merge branch-name	Merge branches
git pull	Get updates
git push	Upload code

6. GitHub Workflow (Basic)

1. Create a repository on GitHub
2. Clone the repository locally
3. Make changes to the project
4. Add and commit changes
5. Push changes to GitHub

Commands used:

git clone <repo-url>

git push origin main

7. What is a Commit?

A commit is a **snapshot of changes** in the project. Each commit has:

- Unique commit ID
- Commit message
- Author details

Why Atomic Commits Matter

- ✅ Easy to review in PRs
- 🐞 Easy to find bugs
- ↩️ Easy to revert one change
- 📜 Clean commit history

Why We Use .gitignore

- 🔐 Hide sensitive data (passwords, API keys)
- 🗑️ Ignore unnecessary files
- 🧹 Keep repository clean
- 🚀 Reduce repo size

🔹 Example .gitignore File

```
node_modules/
.env
*.log
dist/
__pycache__/
.vscode/
```

8. What is a Branch?

A branch is used to work on new features without affecting the main codebase.

9. What is Pull Request (PR)?

A Pull Request is used to request merging changes from one branch to another after review.

10. Tools Used

- Git
- GitHub
- Visual Studio Code

11. Key Learnings

- Understood version control concepts
- Learned basic Git commands

- Learned how GitHub supports team collaboration
- Gained hands-on experience using Git with VS Code

12. Conclusion

Day 1 helped in building a strong foundation of Git and GitHub, which are essential tools for modern software development and team collaboration.

Signature:
Soumya Ranjan Das