Training Report – Day 4

Topic Covered Today:

- Introduction to **Git and GitHub**
- Difference between Git and GitHub
- Setting up a GitHub account and repository
- Configuring Git on Ubuntu Linux
- Basic Git commands for version control

Key Learning:

Today I learned about **Git** and **GitHub**, which are essential tools for developers and data scientists to manage code, track versions, and collaborate with teams.

- **Git** is a distributed **version control system** that allows us to track changes in code, revert to previous versions, and collaborate with multiple developers.
- **GitHub** is a cloud-based platform where Git repositories can be stored, shared, and collaborated on.

I also learned how to set up and configure Git on Ubuntu Linux using the following commands:

- `git config --global user.name "Your Name"` → sets the Git username
- `git config --global user.email "your_email@example.com"` → sets the email for commits

Then, I practiced creating and working with repositories:

- `git init` → initializes a new Git repository
- `git clone <repo_url>` → clones a remote repository to local system
- `git status` → shows the status of changes in the repository
- `git add <filename>` → adds files to staging area
- `git commit -m "message"` → commits changes with a message
- `git push origin main` → pushes committed changes to GitHub
- `git pull origin main` → pulls latest changes from GitHub
- `git log` → shows commit history

I also understood the importance of **branching** in Git:

- `git branch branch_name` → creates a new branch
- `git checkout branch_name` → switches to another branch
- `git merge branch_name` → merges changes from one branch to another

These concepts are crucial for working in teams where multiple people contribute to the same project.

Activities / Assignments:

- Created a **GitHub account** and set up a new repository.
- Configured Git with my name and email on Ubuntu Linux.
- Practiced creating a new Git repository using `git init`.
- Added a sample Python file, committed it, and pushed it to GitHub.
- Cloned a repository from GitHub to my local machine.
- Practiced pulling updates and pushing changes to ensure synchronization.
- Learned how to check commit history and undo mistakes.

Personal Reflection for Day 4:

Today's session was very practical and useful for my future projects. I realized that **Git and GitHub are must-have tools** for any developer, especially in AI/ML projects where multiple scripts, datasets, and models are updated regularly.

At first, I was a little confused about the difference between Git and GitHub, but after practicing commands, I understood that **Git is the tool** (version control system) and **GitHub is the service** (online hosting platform).

I also understood the value of version control—without Git, it would be very difficult to manage project changes, especially when working in teams. The session gave me the confidence to use GitHub for my upcoming projects and collaborate effectively.