Day 4 – Daily Diary (Training TR-102)

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Topic Covered: Introduction to Git and GitHub

- **What I Learned Today:**

On the fourth day of my training, we explored **Git and GitHub**, two essential tools for modern software development. Git is a **version control system** that helps developers track changes in their code, while GitHub is an online platform that hosts Git repositories and enables **collaborative development**.

I learned the importance of version control in programming: it allows multiple developers to work on the same project without conflicts, keeps a history of all changes, and makes it easy to revert to previous versions when needed. The trainer explained key concepts such as **repositories, commits, branches, merging, and pull requests**.

We also explored the differences between **local repositories** (stored on our computer) and **remote repositories** (hosted on GitHub). Understanding the workflow of creating, cloning, and pushing repositories helped me realize how professional developers manage projects efficiently.

- **Activities Performed:**

1. Installed Git on my system and configured my username and email.
2. Created a GitHub account and verified it.
3. Learned to create a **new repository** on GitHub and understood the difference between public and private repositories.
4. Initialized a local Git repository using the command:

   git init
5. Added files to staging using:

   git add .
6. Committed changes with meaningful messages:

   git commit -m "Initial commit"
7. Linked the local repository to GitHub:

git remote add origin <repository-URL>

8. Pushed code to GitHub using:

   git push -u origin main

9. Explored GitHub Desktop and practiced committing and pushing changes using a graphical interface.

🔹 **Skills Gained:**

- Understanding the basics of **version control** and its importance in collaborative development.
- Ability to create and manage **local and remote repositories**.
- Knowledge of core Git commands: git init, git add, git commit, git push, and git clone.
- Familiarity with GitHub interface, repository settings, and branching concepts.
- Confidence in tracking and managing changes in a project.

Reflection:
Today's session was extremely valuable because it taught me **how professional software development projects are organized**. Learning Git and GitHub gave me practical skills to manage code efficiently and collaborate with others.

I now understand that version control is not just about saving code; it is about maintaining a **history of changes**, experimenting safely with **branches**, and working effectively in a team environment. This session laid a strong foundation for future project work and prepared me for collaborative development using GitHub.

Overall, Day 4 significantly enhanced my understanding of **code management and collaboration**, which are essential skills for any developer.