(TR-102) MASTERING THE SEMANTIC WEB –

Training Day 14 Report :

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What is Git?

Git is a tool that helps people keep track of changes to files, especially when working on projects with others. Think of it like a super-powered undo button that can go back to any point in time.

Why Use Git?

Version Control: Git helps to save different versions of the project so one can go back and see what it looked like at any point.

Collaboration: Multiple people can work on the same project at the same time without overwriting each other's changes.

Backup: The work is saved in different locations, reducing the risk of losing the project.

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Key Concepts in Git:

- Repository (Repo): This is where Git stores all the files and the history of changes. It's like a folder for your project.
- Commit: A commit is like taking a snapshot of your project. It saves the state of your files at a particular point in time.
- Branch: A branch is a separate line of development. We can create a branch to work on a new feature without affecting the main project.
- Merge: Merging is how you bring changes from one branch into another. It combines the work done on different branches.
- Clone: Cloning is making a copy of an existing Git repository from somewhere else (like GitHub) to your computer.
- Push/Pull: Pushing is sending the changes to a remote repository (like GitHub). Pulling is getting the latest changes from the remote repository to the computer.

Why Merge Conflicts Occur in Git?

Merge conflicts happen when changes made in different branches cannot be automatically combined by Git. This usually happens in the following situations:

- Same Line Edit: Two people edit the same line in a file on different branches.
- File Deletion: One person edits a file while another person deletes it in a different branch.

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<u>Some Platforms that use Git:</u>

GitHub

- Description: A web-based platform that uses Git for version control and provides additional features like issue tracking, code review, and project management.
- Features: Pull requests, GitHub Actions (CI/CD), GitHub Pages (static site hosting), and community collaboration.

GitLab

- Description: A web-based DevOps lifecycle tool that provides a Git repository manager with features like CI/CD, issue tracking, and project management.
- Features: Integrated Continuous Integration (CI)/Continuous Deployment (CD), Docker registry and GitLab Pages.

Various task management tools like Trello and Jira were introduced and some different domains of Computer Science field were discussed.

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