

Git And GitHub

Git :

- **Version control system(VCS)** - Git is a version control system that allows a team of developers to work in a collaborative environment on a single project where Git maintains each version of the code and we can visit any version of the code at any time
- **Local Repository** - It stores project file code on the local repo so that the developer can access their work any time and in offline mode all the history of a project is stored on the local repo
- **Branching and merging** - Git allows us to create separate branches so that developers can work independently without having to alter the original branch of the project file
- **Commit** - Commit is a way of git to save the data of the project onto the repository constantly and we can visit any commit done to the repo at any time that gives us snapshots of our project suppose we mess up something in our project to handle this situation we can go back to the previous commit at any time

GitHub :

- **Hosting service** - GitHub is a web-based platform that hosts Git repositories, providing a centralized location for collaboration
- **Remote Repository** - GitHub allows developers to push their local repo to the remote repo making it accessible to others working on the same project
- **Collaboration tool** - GitHub offers features like issue tracking, pull requests code reviews, etc
- **Visibility and Transparency** - Repositories on GitHub can be public or private, enabling open-source contribution

Advantages -

- **Collaboration** - Enable seamless cooperation between developers working on the same project
- **Version Control** - Helps in tracking changes made to the codebase over time and reverting to previous versions if needed.
- **Backup and Recovery** - Acts as a remote backup for project repositories, reducing the risk of data loss.
- **Code Quality**- Facilitates code review processes, leading to improved code quality through feedback and suggestions.
- **Project Management** - Provides tools for project management, such as issue tracking and milestones, enhancing team productivity and organization.