**Version Control**

* Version control is a system for tracking and managing changes to files over time, allowing developers and teams to collaborate, revert to previous versions, and maintain a clear history of a project's evolution.
* It uses repositories to store project files and their history, with tools like Git enabling features such as parallel development, conflict resolution, and easy access to any past iteration of the project.

**Difference Between Git and GitHub**

|  |  |
| --- | --- |
| **Git** | **GitHub** |
| Git is a distributed version control system. | GitHub is a web-based platform that provides hosting for Git repositories. |
| It helps developers track changes in their code, revert to earlier versions, and collaborate with others. | It lets you store your Git projects online, so you can share them, collaborate with others, and use features like pull requests, issues, and CI/CD. |
| It works locally on your computer. | Requires internet to sync your local Git repo with the remote repo hosted on GitHub. |

**Local Repository**

* This is the copy of your project on your own computer.
* It has:
* Your project files.
* The Git history (commits, branches, etc.).
* You can work offline: commit, branch, merge, etc. all happen locally.

**Remote Repository**

* This is a copy of your project stored on the internet or a server (e.g., GitHub, GitLab, Bitbucket).
* It allows multiple people to work on the same project and share changes.
* To connect the two, you use commands:
* git push → send your local changes to the remote.
* git pull → bring others’ changes from the remote to your local copy.