GIT AND GITHUB

In essence, Git is the underlying version control system that developers use locally, while GitHub is a web-based platform that provides hosting, collaboration, and project management tools built around Git repositories.

\***\*Git:\*\***

* - Git is a distributed version control system (DVCS) primarily used for tracking changes in source code during software development.
* - It is a command-line tool that operates locally on a developer's machine, allowing them to manage their codebase, commit changes, create branches, merge code, etc., without needing an internet connection.
* - Git focuses on the core functionalities of version control, such as tracking changes, branching, merging, and reverting, and does not provide a web-based interface or centralized hosting for repositories.

****Key Concepts:****

****Repository****

****(Repo):**** A directory or storage space where your projects can live. It can be local to your computer or hosted on a remote server.

****Commit:**** A snapshot of your repository at a specific point in time. It records changes to files over time so you can recall specific versions later.

****Branch:**** A parallel version of a repository. It allows you to work on different features or fixes simultaneously without affecting the main codebase.

****Merge:**** Combining changes from different branches together.

****Pull:**** Fetching changes from a remote repository and merging them into your local repository.

****Push:**** Sending your committed changes to a remote repository.

****Basic Commands:(GIT COMMANDS)****

**git init**: Initializes a new Git repository in the current directory.

**git clone [url]**: Copies a repository from a remote source to your local machine.

**git add [file]**: Adds changes in the specified file(s) to the staging area.

**git commit -m "Message"**: Records changes to the repository with a descriptive message.

**git push**: Uploads your local changes to a remote repository.

**git pull**: Fetches changes from a remote repository and merges them into your local branch.

**git merge [branch]**: Combines the specified branch's history into the current branch.

**\*\*GitHub:\*\***

* - GitHub, on the other hand, is a web-based platform built on top of Git, providing hosting for Git repositories and offering additional collaboration and project management features
* - It acts as a centralized hub for developers to store their Git repositories in the cloud, making them accessible from anywhere with an internet connection.
* - GitHub extends Git's functionalities by providing a user-friendly web interface for managing repositories, browsing code, reviewing changes, and collaborating with other developers.
* - It offers features like issue tracking, pull requests, code review tools, project boards, and social networking features, making it a comprehensive platform for software development collaboration.