### ****Difference Between Git and GitHub****

| **Aspect** | **Git** | **GitHub** |
| --- | --- | --- |
| **Type** | Version Control System (Tool) | Hosting service built on Git |
| **Purpose** | Tracks code changes locally | Hosts repositories for collaboration |
| **Functionality** | Local repository management | Cloud-based remote repository hosting |
| **Dependency** | Does not depend on GitHub | Requires Git for version control |
| **Offline Use** | Works offline | Needs internet to access repositories |
| **Examples** | git init, git commit | Pull requests, issue tracking, wikis |
| **Alternatives** | Mercurial, SVN | GitLab, Bitbucket, Azure Repos |

### ****Basic Git Commands****

| **Command** | **Description** |
| --- | --- |
| git init | Initializes a new Git repository in the current directory. |
| git clone <repo\_url> | Clones a remote repository to your local machine. |
| git status | Shows the status of changes in the working directory and staging area. |
| git add <file> or git add . | Stages files for commit. . adds all changes. |
| git commit -m "message" | Records changes in the repository with a descriptive message. |
| git log | Displays the commit history of the repository. |
| git branch | Lists all branches in the repository. |
| git branch <branch\_name> | Creates a new branch. |
| git checkout <branch\_name> | Switches to the specified branch. |
| git merge <branch\_name> | Merges the specified branch into the current branch. |
| git remote add origin <url> | Links a local repository to a remote repository. |
| git push origin <branch> | Pushes changes from the local branch to the remote repository. |
| git pull origin <branch> | Fetches and integrates changes from the remote repository into the local branch. |
| git diff | Shows the differences between the working directory and the staging area. |