**GIT & GITHUB**

**GIT:**

It is a distributed version control system (VCS) designed to handle everything from small to very large projects with speed and efficiency. It allows multiple developers to work on the same project simultaneously and independently of each other. Git tracks changes in the source code, enabling you to review, revert to previous states, and collaborate effectively.

Key concepts in Git include:

Repository (Repo): A repository is a collection of files and the entire history of changes made to those files. Repositories can be local (on your machine) or remote (on a server).

Commit: A commit is a snapshot of changes to the repository at a particular point in time. It includes information about what changes were made and who made them.

Branch: A branch is a parallel version of a repository, allowing you to work on different features or fixes simultaneously without affecting the main codebase. Branches can be merged back into the main branch when the work is complete.

**GITHUB:**

GitHub is a web-based platform built around Git. It provides a graphical interface for managing Git repositories, collaboration features, and additional tools to enhance the development workflow. Some key features of GitHub include:

Remote Repositories: GitHub hosts remote repositories, allowing multiple developers to collaborate on projects.

Pull Requests: Developers can propose changes to a repository by creating a pull request. This is a way to review, discuss, and merge code changes before they are applied to the main codebase.

Issues: GitHub provides a built-in issue tracking system, allowing users to report bugs, request features, and discuss ideas.

Wiki and README: GitHub allows you to create documentation for your projects using wikis and README files.

GitHub Actions: This is a feature that allows you to automate various aspects of your software development workflow, such as testing, building, and deploying

Some Basic commands of git include:

**1. git init:**

Initializes a new Git repository.

**2. git clone <repository\_url>**

Copies a repository from a remote source to your local machine.

**3. git add:**

Adds changes in the working directory to the staging area.

**4. git commit -m "message":**

Records changes in the repository.

**5. git status:**

Shows the status of changes as untracked, modified, or staged.

**6. git pull:**

Fetches changes from a remote repository and merges them into the current branch.

**7. git push origin <branch\_name>:**

Pushes changes to a remote repository.

https://github.com/Mande25/Pothole\_detection/tree/master

