**GIT**

What is Git?

* Git is a distributed version control system.
* Created by Linus Torvalds in 2005 to manage the development of the Linux kernel.
* Open source, free
* Cross platform
* Scalable
* No centralized connectivity is needed.
* Powerful and cheap branching with easy to merge.

Goals of Git

* Speed
* Support for non-linear development (thousands of parallel branches)
* Fully distributed
* Able to handle large projects efficiently

Git Commands

1. **git init**

Initializes a new Git repository in the current directory.

1. **git clone <repository URL>**

Copy a project from the internet onto our local machine.

1. **git add <file>**

Adds changes in a specific file to the staging area, preparing them to be committed.

1. **git add .**

Prepare all the changes in our current directory to be saved.

1. **git commit -m "commit message”**

Records changes staged in the current branch with a descriptive message.

1. **git push**

Uploads local repository content to a remote repository.

1. **git pull**

Fetches and downloads content from a remote repository and updates the local repository.

1. **git status**

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

1. **git log**

Displays a history of commits.

1. **git branch**

Lists all existing branches and indicates the currently active branch.

1. **git checkout <branch>**

Switches to the specified branch.

1. **git merge <branch>**

Merges changes from the specified branch into the currently active branch.

1. **git remote -v**

Lists all remote repositories associated with the local repository along with their URLs.

1. **git remote add <name> <URL>**

Adds a new remote repository.

1. **git remote rm <name>**

Removes a remote repository.

1. **git fetch**

Bring in all the changes from the shared online repository, but don't apply them to our current files yet..

1. **git reset <file>**

Undo adding a file to be saved, so it won't be part of the next save.

1. **git reset - -hard**

Discards all changes and resets the repository to the state of the last commit.

1. **git diff**

Shows the differences between the working directory, staging area, and last commit.

1. **git tag**

Lists, creates, or deletes tags to mark specific points in history.