**GIT (Global Information Tracker)**

1. **What is Git ?**

* **Git** is a **distributed version control system**
* that tracks changes to our files and allows collaboration among multiple developers working on the same project
* It helps you save, manage, and revisit any version of your project files.

1. **How Does Git Keep Track of Files?**

* Git keeps track of files by taking **snapshots** during commits.
* These snapshots are lightweight because Git stores only **deltas** for tracked files.
* Every snapshot is identified by a unique **commit hash**.

1. **How to track files with the help of Git?**

* **Git init**
* This creates a hidden. git directory in your project folder where Git stores all its tracking and versioning information.
* **git status** it will show the files that are not in track of git.

1. **What is the difference between git add and git commit?**

**git add**: Adds changes to the staging area, preparing them for a commit.

**git commit**: Saves the staged changes to the repository's history.

1. **What is a branch in Git, and why is it useful?**

* Iam developing a new feature for an application. To avoid disrupting the main branch (main), i create a branch named feature/login
* .Once the feature is complete and tested, you merge it back into the main branch.
* **git branch feature/login** # Create a new branch
* **git switch feature/login** # Switch to the branch

1. **What is the difference between git pull and git fetch?**

* **git fetch**: Downloads updates from the remote repository but does not apply them to your local branch**.( Like checking for new mail but not opening it.)**
* **git pull**: Fetches updates and merges them into your current branch**.( Like checking and opening the mail.)**

1. **How can you resolve merge conflicts?**

* Merge conflicts occur when two branches modify the same lines in a file. To resolve:
* Git will mark the conflict in the file.
* Edit the file to fix the conflict manually.
* Stage the resolved file and commit.

1. **What is .gitignore?**

**Example:**You’re packing for a trip but don’t want to take old, unnecessary items like junk files. .gitignore tells Git to skip them.

1. **What is the difference between git merge and git rebase?**

**git merge:** Like merging two rivers and keeping their separate paths visible.

**git rebase:** Like aligning everything into a single straight path.

1. **What is git stash, and how do you use it?**  
   git stash temporarily saves uncommitted changes so we can work on something else.
2. **What is git cherry-pick, and how is it used?**

**git cherry-pick** copies a specific commit from one branch to another.

1. **What is git reflog, and how can it help recover lost commits?**

git reflog shows a log of all actions performed in the repository, including branch movements and resets.

1. **How do you squash commits in Git?**

Squashing combines multiple commits into one.