Git Commands with Explanations

1. Git Setup & Configuration

Command	Explanation
git --version	Checks the installed Git version to verify installation.
git config --global user.name "vallabha-dev"	Sets the global username for commits.
git config --global user.email "vallabhd60@gmail.com"	Sets the global email for commits.
git config --list	Displays all configured Git settings.

2. Repository Creation

Command	Explanation
mkdir gitrepos	Creates a directory to store repositories.
cd gitrepos/	Moves into that directory.
mkdir devopsclass	Creates a new project folder.
cd devopsclass/	Navigates into the new project folder.
git init	Initializes a new local Git repository.

3. Basic Git Workflow

Command	Explanation
git status	Shows the working tree status.
git add .	Stages all new and modified files for commit.
git commit -m "message"	Commits staged changes with a message.
git log --oneline	Shows the commit history in short format.
git show <commit-id>	Displays details of a specific commit.

4. Working with Remote Repositories

Command	Explanation
git remote add origin <URL>	Connects the local repo to a remote repository.
git branch -M main	Renames current branch to main.
git push -u origin main	Pushes commits to remote and sets upstream.
git clone <URL>	Clones a remote repository to local machine.
git pull	Fetches and merges changes from remote.

5. Branching & Merging

Command	Explanation
git branch sprint1	Creates a new branch named sprint1.
git checkout sprint1	Switches to the sprint1 branch.
git merge sprint1	Merges sprint1 branch into current branch.
git branch -d sprint5	Deletes local branch sprint5 safely.
git push origin --delete sprint5	Deletes remote branch sprint5.

6. Rollback & Comparison

Command	Explanation
git diff	Shows changes between working directory and last commit.
git restore --staged <file>	Unstages a file from the staging area.
git revert HEAD	Creates a new commit to undo last commit.
git reset --hard <commit-id>	Resets repository to a specific commit.

7. Useful Linux Commands

Command	Explanation
pwd	Displays current working directory.
clear	Clears terminal screen.
df -h	Shows disk space usage.
free -m	Displays memory usage.
uptime	Shows system uptime.

Git Commands Reference Guide

1■■ Delete Git Tags

Delete local tag:
```
git tag -d v1.0.0
```
Deletes the tag locally.

Delete remote tag:
```
git push origin --delete tag v1.0.0
```
or
```
git push origin :refs/tags/v1.0.0
```
Deletes the tag from the remote repository.

2■■ Delete Git Branches

Delete local branch (safe):
```
git branch -d branch_name
```
Deletes a branch locally if it has been merged.

Force delete local branch:
```
git branch -D branch_name
```
Forcefully deletes a branch locally even if not merged.

Delete remote branch:
```
git push origin --delete branch_name
```
or
```
git push origin :branch_name
```
Deletes the branch from the remote repository.

Verify deletion:
```
git branch
git branch -r
```

3■■ Push Tags to Remote Repository

Push a single tag:
```
git push origin v1.0.0
```

Push all tags:
```
git push origin --tags
```
These commands make local tags visible in your remote repository.

4■■ Add Version Tag While Committing

Step 1: Commit your code
```
git commit -m 'Added new feature X'
```

Step 2: Create tag with version
```
git tag -a v1.0.3 -m 'Release version 1.0.3'
```

Step 3: Push code and tags to remote
```
git push origin main
git push origin v1.0.3
```

5■■ Verify Tags

```
git tag
git ls-remote --tags origin
```
Lists all local and remote tags respectively.