



GIT & GITLAB CODE VERSIONING

Programming & development

Course Curriculum

Basic – 30 Hours



GIT AND GITLAB CODE VERSIONING

Module 1 : Introduction

- What is a Version Control System (VCS)?
- Distributed VS Non-distributed VCS

Module 2 : Introduction to Git

- What is Git?
- Alternatives to Git
- Cloud-based solutions (Github, Gitlab, BitBucket, etc.)

Module 3 : Installation and Configuration

- Obtaining Git
- Installing Git
- Common configuration options
- GUI tools



Module 4 : Key Terminology

- Clone
- Working Tree
- Checkout
- Staging area
- Add
- Commit
- Push
- Pull
- Stash

Module 5 : Git – Local Repository



- Creating a repository (git init)
- Checking status (git status)
- Adding Files to a repository (git add)
- Committing files (git commit)
- Removing staged files (git reset)
- Removing committed files (git rm)
- Checking logs (git log)

Module 6 : Git – Remote Repository

- Creating a remote repository (git init)
- Cloning repositories (git clone)
- Updating the remote repository from the local (git push)
- Updating the local repository from the remote (git pull)

Module 7 : Git Tag

- Listing tag
- Lightweight tags
- Displaying tag details
- Annotated tags
- Checking out tags
- Pushing tags
- Pulling tags



Module 8 : Branching in Git

- What is branch?
- Listing branches
- Create new branch
- Checkout branch
- Pushing branches
- Pulling branches

Module 9 : Merging in Git



- Fetching changes (git fetch)
- Rebasing (git rebase)
- Git pull

Module 10 : Git – Stashing Changes

- What is Stashing?
- Using Stash
- Creating a branch from a Stash

Module 11 : Advanced Repository

- Removing untracked files (git clean)
- Remove staged changes (git reset)
- Revert a commit (git revert)
- Checkout a previous commit (git checkout)

Module 12 : Advanced Branching and Merging

- Deleting a branch
- Fast forward merge
- Three way merge
- Resolving merge conflicts

Module 13: Introduction to GitLab

- Introduction to Gitlab
- Creating a Gitlab Account
- Creating a new project
- Navigating the Gitlab interface
- Project settings and permissions

Module 14: Gitlab Repositories

- Cloning a Gitlab repository



- Pushing changes to Gitlab
- Merge requests in Gitlab
- Code review in Gitlab
- Issue tracking in Gitlab

Module 15: Git Advanced Concepts

- Rebasing
- Tagging
- Git hooks
- Git submodules
- Git Stash

Module 16: CI/CD with Gitlab

- Introduction to continuous integration and continuous Deployment
- Configuring CI/CD pipelines in Gitlab
- Jobs and stages in CI/CD
- Monitoring and troubleshooting pipelines

