Class1: Understanding basic DevOps Terminology

* Introduction to OS [Operating system]
* Open-Source vs freeware
* Infrastructure vs platform vs Software
* Provisioning
* Introduction to Killerkoda lab
* installing of docker, git and terraform

Class2- Understanding Developer mindset

* Development lifecycle phase [Plan code build test]
* Understanding Operation Mindset
* How DevOps created[#DevOpsDay]
* Agile [TDD, BDD and FDD]
* Design Thinking
* Greenfield and Brownfield projects in a DevOps

**Class 3: Git Fundamentals**

**Goal**: Understand Git basics and local version control

**Topics**:

* What is Git and why use it
* Git vs GitHub/GitLab/Azure Repos
* git init, git add, git commit
* .gitignore, staging area, commit history
* Viewing logs, diffs, aliases

**Hands-on**:

* Initialize a repo, make commits
* Use. gitignore for common files

**Class 4: Branching and Merging**

**Goal**: Learn powerful branching strategies and how to manage them

**Topics**:

* Branch creation (git branch, git checkout -b)
* Merge vs Rebase
* Fast-forward and recursive merges
* Conflict resolution
* Branching strategies (Git Flow, trunk-based)

**Hands-on**:

* Create multiple branches and merge changes
* Practice resolving merge conflicts

**Class 5: Working with Remote Repositories**

**Goal**: Collaborate using Git remotes like GitHub/GitLab

**Topics**:

* Cloning, fetching, pulling, and pushing
* Setting upstream branches
* git remote management
* Forking and contributing via Pull Requests
* Signing commits (GPG)

**Hands-on**:

* Clone a repo, push changes, create a PR
* Sync forks and resolve diverged branches

**Class 6: Git Internals and Advanced History Management**

**Goal**: Master Git internals and rewrite history safely

**Topics**:

* How Git stores data (blobs, trees, commits)
* Reflog, stash, and cherry-pick
* Reset vs revert vs checkout
* git bisect for debugging
* git filter-branch and git rebase -i

**Hands-on**:

* Use reflog to recover lost commits
* Rewrite history with interactive rebase

**Class 7: Git for DevOps and CI/CD**

**Goal**: Integrate Git into DevOps pipelines and automation

**Topics**:

* Git hooks (pre-commit, pre-push)
* GitOps fundamentals
* Branch protection rules
* Version tagging and semantic versioning
* Git in CI/CD pipelines (e.g., Azure DevOps, GitHub Actions)

**Hands-on**:

* Create a pre-commit hook for linting
* Use Git tags for deployment pipelines

Class8: DevSecOps Handson

1. DAST [Zap tool]
2. SAST [horusec tool]
3. SCA

Class9: Understating YAML/json, and getting expertise in writing yamls file.

Class10: Introduction to Docker

Class11: Writing Dockerfile [FROM, RUN and CMD]

Class12: Writing Dockerfile [Remaining instruction]

Class13: Docker storage, Volume, networking, Compose and swarm

Class14: Introduction to CICD pipeline [Build, release and deploy pipeline]. Continuous integration, delivery and deployment pipeline.

Class15: Monolithic, microservice and service mesh introduction

Cloud-10

Pipeline-5

Terraform-5

Kubernetes-5

Ansible-2

SRE-1

Planform Engineering-1