GITLAB and GitOps

Duration: 5 Days (8 hours/Day)

Hands-On Format: This hands-on class is approximately 80/20 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

Module 1 – Introduction to CICD and GitLab
What is CI/CD?
What is GitLab
GitLab Features
GitLab Architecture

Module 2 – Creating Projects
Creating a New Project
Building the Project Locally
Short Introduction to Images and Docker
Building the Project using GitLab CI
Adding a Test Stage
Running a Jobs in Parallel
Running Jobs in the
Background
Using Environment Variables for Managing Secrets
Deploying the Project using GitLab CI

Module 3 – Variables in GitLab
CI/CD What are GitLab CI/CD
Variables?
Predefined GitLab
Variables Create Custom
Variables Secret
Variables in GitLab

Module 4 – Integrating Docker and Kubernetes
with GitLab Build Docker Image with GitLab
Push Image to Central Image Registry
Integrating Kubernetes and GitLab CI
Automatic Deploy Application to Kubernetes

Module 5 – Artifacts
Defining Artifacts
Using Artifacts in Future Stages

Module 6 – GitLab Monitoring
Integrate Prometheus with
GitLab Check Metrics of GitLab
Runners

Module 7 – GitOps ArgoCD
Introduction to GitOps
Integration of GitLab and ArgoCD Archicture
Installing ArgoCD
Configuring ArgoCD to Connect with GitLab
Managing Secrets with GitOps and Kubernetes
Auto build image with the help of GitLab and Deploy application to Kubernetes with ArgoCD