



ZERO TO HERO

DevSecOps & Cloud DevOps

Ultimate RoadMap

2025

Module 1: Introduction to DevOps & DevSecOps

- **Introduction to DevOps**

- What is DevOps & DevSecOps ?
- Benefits and challenges
- DevOps Workflow



- **Real-Time Corporate DevOps Workflow**

- Understanding Real End-to-End CI/CD workflows
- Jira Ticketing
- DevOps Tools
- Roles & Responsibilities
- Deployment Strategies
 - Blue-Green, Canary, Rolling & Other deployments



- **Detailed Documentation**

- DevOps Notes
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA



Module 2: Linux & Shell Scripting



- **Linux Basics**
 - What is Linux? Overview and key features
 - Linux file system hierarchy and key directories
- **Virtual Machines**
 - Introduction to VMs: structure, components, and ports
 - Creating and connecting to a VM via SSH
 - Managing ports and access
- **Essential Linux Commands**
 - Basic and advanced Linux commands
 - File and directory manipulation
- **Package Management**
 - Installing, updating, and removing packages
- **File and Folder Permissions**
 - Understanding and managing permissions
- **User & Group Management**
 - Adding, modifying, and deleting users/groups
- **Linux Networking**
 - IP Addresses, Subnetting
 - Common networking commands
 - Managing network interfaces
- **Linux Troubleshooting**
 - Practical examples and error handling
- **Shell Scripting**
 - Writing and executing scripts for automation
 - Corporate-level shell scripting examples
- **Detailed Documentation**
 - Linux Notes
 - 200 Interview Questions
 - 100 Errors, Cause, Solutions & RCA

Module 3: Git



- **Introduction to Git**
 - Version control basics
 - Setting up Git repositories
- **Essential Git Concepts**
 - Git commands: add, commit, push, pull
 - Git Branch Management
 - Merge vs Rebase With Demo
 - Cherry-Pick With Demo
 - Stash & Pop With Demo
 - Git Squash, Git Revert & Reset
 - Git bisect, Git Blame
 - Handling Merge Conflicts With Demo
 - GitOps Workflows
- **Corporate Branching Strategies**
 - Real Company Branching Strategies
 - Feature, release, and hotfix branches
 - Git workflows in corporate projects
- **Errors & Troubleshooting**
 - Git Errors & Troubleshooting Scenarios
- **Detailed Documentation**
 - Git Notes
 - 200 Interview Questions
 - 100 Errors, Cause, Solutions & RCA

Module 4: Build Tools



- **Maven**

- Introduction to Maven
- Building Java projects
- Understanding Project Files (dependencies)

- **Npm**

- Introduction to NPM
- Building NodeJS Projects
- Understanding Dependencies in NodeJS

- **Multi-Tier Projects [Local Building]**

- NodeJS + MySQL
- DotNET + MongoDB
- Python + Postgres
- Java Full Stack Project

- **App Deployment To Tomcat Server Manual**

- Setup Tomcat Server
- Deploy a Java Application on Tomcat

- **Detailed Documentation**

- Build Tools Notes
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA

Module 5: CI/CD Tools



- **Jenkins, GitHub Actions, GitLab CI/CD**
 - Jenkins setup, configurations, and plugins
 - **Creating Jenkins jobs**
 - Freestyle,
 - Pipeline,
 - Multibranch
- **Jenkins Shared libraries**
- **Jenkins Parameters**
 - Creating Pipelines With Different Types Of Parameters
- **Access Management Using Matrix**
- **Generic Webhook Trigger Setup For Jenkins Pipelines**
 - Configuring Webhooks in GitHub & Jenkins For automatic trigger of Jenkins Job on Git Push
- **Multibranch Pipeline Webhook Setup**
 - Configuring Webhooks in GitHub & Jenkins For automatic trigger of Multibranch Jenkins Job on Git Push
- **Jenkins Integration With SonarQube**
 - Perform Sonar analysis on Java, NodeJS & Python projects

Module 5: CI/CD Tools



- **Jenkins Integration With Nexus**
 - Building & Deploying Application Artifacts to Nexus
- **Jenkins Integration With Security Tools**
 - Integrating Security Tools Like Trivy, OWasp
Dependency Check for FS & Docker Image Scanning
- **Jenkins Scenario Based Implementations**
 - Implementing Different scenarios using Jenkins Pipelines
- **Jenkins Upstream & Downstream Job in Jenkins**
 - Creating Jenkins Jobs Dependent on Other JObs & Getting triggered by one.
- **Jenkinsfile**
 - Creating & Working With Jenkinsfile
- **Jenkins Backups**
 - Taking Jenkins Jobs & Jenkins Backup
- **Jenkins Troubleshooting**
 - Understanding Jenkins Errors & how To resolve those.
- **Jenkins Mail Notifications**
 - Configure Pipelines to send mail notifications over Outlook or Gmail
- **Web Application Build & Deploy To Tomcat Web Server**

Module 5: CI/CD Tools



- **Full-stack CI/CD Jenkins pipelines [In K8 Modules]**
 - 11 Microservice Project Pipeline
 - Multi-Tier Projects
 - FULL Stack Projects
- **GitHub Actions**
 - Configuration & Agent Setup
 - End-To-End CICD Pipeline From Scratch
- **GitLab CI/CD**
 - Configuration + Runner Setup
 - End-To-End CICD Pipeline From Scratch
- **Detailed Documentation**
 - Jenkins Notes & Code
 - 200 Interview Questions
 - 100 Errors, Cause, Solutions & RCA

Module 6: SonarQube



- **What is SonarQube & How It Works?**
 - Sonar Server VS Sonar Scanner
 - Code Quality Check & Code Coverage
 - What Issues Sonar Finds
- **SonarQube Local Setup With SSL Certificate & HTTPS**
 - Setting Up SonarQube Locally
 - Understanding Quality Profiles & Rules
 - Understanding Quality Gate
- **Jenkins Integration With SonarQube**
 - Connect to Jenkins Using Server URL & Token
 - Code Quality and Coverage With Quality Gate Check
- **[Hands On Projects]**
 - Integrating SonarQube with CI/CD tools
 - SonarQube Analysis on Java Project
 - SonarQube Analysis on NodeJS Project
 - SonarQube Analysis on Python Project
- **Multibranch Analysis in SonarQube**
 - Analysis On Multiple Branches using Community Branch Plugin
- **Detailed Documentation**
 - SonarQube Notes With Steps
 - 200 Interview Questions
 - 100 Errors, Cause, Solutions & RCA

Module 7: Security Tools



- **Trivy**

- File System Scan & Docker Image Scanning
- Filter Results & Export Report in Tabular Format

- **OWASP Dependency Check**

- Scan For Vulnerabilities In Project Dependencies

- **Prowler**

- Scans AWS Account for security assessments, compliance checks, and audits

- **OWASP ZAP**

- Penetration Testing for Deployed Applications

- **HashiCorp Vault**

- HashiCorp Vault: secrets management

- **Detailed Documentation**

- Notes
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA

Module 8: Nexus Artifact Management



- **Artifact Management in DevOps**
- **Setup Nexus & Configuration**
 - Setting up Nexus in Local
 - Setting up Nexus Using Docker
- **Configuring repositories and artifacts**
 - Create Repos & Configure Nexus
 - Understand Different Kind Of Repos
- **CICD Integration With Jenkins [Project]**
 - Build & Deploy Java Project Artifact To Nexus
 - Build & Deploy NodeJS Project Artifact To Nexus
- **Downloading Nexus Artifacts in Local & Pipelines**
 - Local Download & in Pipeline download
- **Private Docker Registry Setup In Nexus [Corporate Task]**
 - Private Docker Registry setup in Nexus & Pushing Docker Images To It
- **Detailed Documentation**
 - Notes
 - 200 Interview Questions
 - 100 Errors, Cause, Solutions & RCA

Module 9: Docker



- **Docker Basics**

- What is Docker & What Problem Does it Solve?

- **Docker Architecture**

- Docker Daemon(Dockered) , Docker CLI
- Docker Image, Docker Container, Dockerfile

- **Writing optimized Dockerfiles**

- Learn How To Write Dockerfiles
- Keywords In Docker

- **Docker Commands**

- Learn the most important Docker Commands

- **ADD VS COPY & CMD VS ENTRYPOINT**

- **Building images and running containers**

- **Pushing Docker Images To DockerHub Repo**

- **Pushing Images to ECR [Elastic Container Registry]**

- **Multi-Stage Dockerfile**

- Understanding & Writing Multi-Stage Dockerfiles
- MultiStage Dockerfile for Java Project
- MultiStage Dockerfile for NodeJS Project

Module 9: Docker



- **Docker Compose**

- Writing Docker Compose Files
- MongoDB + MongoExpress Project
- Multi-container deployments

- **Docker Networking and Volumes**

- Understanding Docker Networks & Volumes Hands-On

- **Hands-On Projects**

- Docker Integration With CICD
- Multi-tier Node.js + MySQL
- Multi-tier .NET + MongoDB
- Multi-tier Python + PostgreSQL
- Multi-Tier Java + MySql
- Full-Stack Java Application
- Virtual Browser Project
- Ekart [Java Project]
- TaskMaster [Java Project]

- **Detailed Documentation**

- SonarQube Notes With Steps
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA

Module 10:Kubernetes



- **What Problem Does K8 Solves?**
- **K8 Architecture**
 - Kubernetes Detailed architecture & Workflow with Diagram
 - Kubernetes Resources Deployment, Pods, Namespaces, Services, Secrets, ConfigMaps , PVC, PV, Storage Class
 - Service Types
 - Kubernetes Networking
- **Kubernetes Setups**
 - Local K8 Setup Using Kubectl [Hands-On Demo]
 - EKS [Elastic Kubernetes Service] [Hands-On Demo]
 - AKS Setup [Shown in Azure Module] [Hands-On Demo]
 - Highly Available K8 Cluster [Hands-On Demo]
 - Role Based Access Control [Hands-On Demo]
- **Kubernetes Important Tasks**
 - Rollbacks [Hand-On Demo]
 - Horizontal Pod Autoscaling [Hands-On Demo]
 - Vertical Pod Autoscaling [Hands-On Demo]
 - Taints & Tolerations [Hands-On Demo]
 - Dynamic Volumes for Persistent Storage With EBS [Hands-On Demo]

Module 10:Kubernetes



- **Kubernetes Projects**

- Full-Stack Mega Project With Persistent Volume [Hands-On Demo]

- **Helm Chart Project**

- Full-Stack Mega Project With Helm Charts [Hands-On Demo]

- **SSL Cert Project**

- Multi-Tier CICD Project With SSL Certificate [Hands-On Demo]

- **GITOPS Project**

- Multi-Tier Production Level GitOps Project [Hands-On Demo]

- **Blue-Green Deployment**

- Blue-Green Deployment Project-1 [Hands-On Demo]
- Blue-Green Deployment Project-2 [Hands-On Demo]

- **MicroServices Project**

- 11- Microservice Project [Hands-On Demo]

- **Ingress + SSL Certificate Project**

- Ingress SSL Integration [Hands-On Demo]

- **Detailed Documentation**

- Notes & Documentation
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA

Module 11: Azure DevOps



- **Azure DevOps Setup**

- Azure organization setup
- Exploring Core services (Repos, Pipelines, Artifacts, AKS, ACR)

- **Azure DevOps Hands-on Projects**

- **Classic Pipeline**

- Full Stack CI/CD with AKS [Classic Pipeline]
 - Full Stack CI/CD with AKS & ACR [Classic Pipeline]
 - 10-Microservice Deploy To AKS
 - NodeJS + MongoDB Project Deploy To Azure App Service [Classic Pipeline]

- **YAML Pipeline**

- Secret Santa CI/CD With AKS [YAML Pipeline]
 - Multi-Tier Project CI/CD With AKS [YAML Pipeline]
 - NodeJS + MongoDB Project Deploy To Azure App Service [YAML Pipeline]

- **Multi Cluster Deployment**

- **Detailed Documentation**

- Steps Document
 - 200 Interview Questions
 - 100 Errors, Cause, Solutions & RCA

Module 12: Infrastructure as Code (IaC)



- **Terraform**

- Infrastructure as Code (IaC)
- Benefits of using Terraform
- Setting up Terraform
- Writing & Understanding the Terraform files from Scratch
- State Management, State locking, Terraform Backends
- Terraform Modules
- Conditional Expressions & Loops
- Managing Secrets
- Terraform Workspaces
- Terraform With Jenkins

- **Terraform Hand-On Projects**

- Infrastructure Deployment
- EC2 Creation With Infra
- Multi-Environment Infra Setup

Module 12: Infrastructure as Code (IaC)



- **Ansible**

- Ansible Introduction & Basics [Hands-On Demo]
- Ansible Playbooks Hands-On
- Ansible Collections [Hands-On Demo]
- Ansible Roles[Hands-On Demo]
- Ansible With Jenkins [Hands-On Demo]
- Ansible CICD Project [Hands-On Demo]
- Ansible Vault
- Ansible + Terraform Corporate Project

- **Detailed Documentation**

- Documentation
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA

Module 13: Monitoring



- **Monitoring Tools**

- Prometheus, Grafana, Node Exporter, Black Box Exporter
- Understanding Monitoring Tools

- **Projects**

- Local Monitoring With Alert Manager [Receiving Mail Notifications]
- Monitoring Setup Using Docker
- Kubernetes node monitoring
- Application Deployed in K8 monitoring

- **Detailed Documentation**

- Steps Documentation
- 200 Interview Questions
- 100 Errors, Cause, Solutions & RCA

Projects in DevOps BootCamp

- **Ultimate Hands-On Projects**

- Multi-tier Node.js + MySQL
- Multi-tier .NET + MongoDB
- Multi-tier Python + PostgreSQL
- Multi-tier Java + MySQL
- Mega Project for EKS
- Mega Project With Helm Chart
- GitOps Project
- Virtual Browser Project
- 11 Microservice Based Project
- Terraform + Ansible Project
- Kubernetes Worker Node Monitoring
- Monitoring Application Deployed in Kubernetes