DevOps Curriculum

Module 1: Introduction to DevOps

- Introduction to DevOps: Definition, principles, and benefits.
- History and evolution: From traditional IT operations to DevOps.
- DevOps Culture: Collaboration, automation, and continuous improvement.

Module 2: Version Control with Git

- Introduction to Git: Basics of version control, history of Git.
- Git Basics:
- Branching and Merging:
- Git Workflows: Centralized, feature branching, GitFlow.

Module 3: Linux Fundamentals

- Introduction to Linux: Overview of Linux distributions.
- Basic Linux Commands:
- Shell Scripting:
- Networking Basics:

Module 4: Continuous Integration with Jenkins

- Introduction to Jenkins: Overview and architecture.
- Installing Jenkins: Step-by-step installation.
- Configuring Jenkins:
- Creating Jobs:
- Integrating with Git: Setting up GitHub integration.
- Building and Testing: Automating build and test processes.

Module 5: Configuration Management with Ansible

- Introduction to Ansible: Overview and architecture.
- Installing Ansible: Setting up Ansible environment.
- Ansible Basics:
- Writing Playbooks:
- Advanced Ansible:
- Ansible Galaxy: Using and creating roles.

Module 6: Containerization with Docker

- Introduction to Docker: Overview and architecture.
- Installing Docker: Setting up Docker environment.
- Docker Basics:
- Dockerfile: Writing Dockerfiles to create custom images.
- Docker Compose: Defining and running multi-container Docker applications.
- Networking and Volumes: Managing container networking and persistent storage.

Module 7: Container Orchestration with Kubernetes

- Introduction to Kubernetes: Overview and architecture.
- Installing Kubernetes: Setting up a Kubernetes cluster (Minikube).
- Kubernetes Basics:
- Configuring Kubernetes:
- Advanced Kubernetes:

Module 8: Build Automation with Maven

- Introduction to Maven: Overview and architecture.
- Installing Maven: Setting up Maven environment.
- Maven Basics:
- Dependency Management: Managing project dependencies.
- Building and Testing: Automating build and test processes.

Module 9: Infrastructure as Code with Terraform

- Introduction to Terraform: Overview and architecture.
- Installing Terraform: Setting up Terraform environment.

- Terraform Basics:
- Managing Infrastructure:
- Terraform Modules: Reusing configuration with modules.
- State Management: Understanding and managing state files.

Module 10: Monitoring and Visualization with Prometheus and Grafana

Prometheus

- Introduction to Prometheus: Overview and architecture.
- Installing Prometheus: Setting up Prometheus environment.
- Prometheus Basics:
- Exporters: Using exporters to collect metrics.
- Alerting: Setting up alert rules and Alertmanager.

Grafana

- Introduction to Grafana: Overview and architecture.
- Installing Grafana: Setting up Grafana environment.
- Grafana Basics:
- Integrating with Prometheus: Visualizing Prometheus data in Grafana.
- Advanced Grafana: