DevOps Learning Roadmap with Tools

[Step 1] 1. Learn the Basics

Before tools, understand:

- Linux & Shell scripting
- Networking basics
- Git & Version Control
- Agile & DevOps concepts

Tools:

- Git
- GitHub/GitLab

[Step 2] 2. Continuous Integration (CI)

Automate build and test processes.

Learn:

- Writing build pipelines
- Automating test execution

Tools:

- Jenkins
- GitLab CI/CD
- GitHub Actions
- CircleCI

[Step 3] 3. Configuration Management

Automate environment setup.

Learn:

- Writing playbooks or manifests

- Idempotency and inventory management

Tools:

- Ansible

- Puppet or Chef

[Step 4] 4. Containerization

Package apps into containers.

Learn:

- Dockerfile

- Volumes, networks

- Image build, tag, push

Tools:

- Docker

[Step 5] 5. Orchestration

Manage container clusters.

Learn:

- Pods, Services, Deployments

- Helm

Tools:

- Kubernetes

- Minikube or Kind

- Helm

[Step 6] 6. Infrastructure as Code (IaC)

Manage cloud infrastructure using code.

Learn:

- Writing Terraform scripts

- Managing AWS/GCP resources

Tools:

- Terraform

- AWS CloudFormation

[Step 7] 7. Monitoring & Logging

Track app and infra health.

Learn:

- Metrics, logs, alerts

- Dashboards and performance tuning

Tools:

- Prometheus + Grafana

- ELK Stack

- Datadog

[Step 8] 8. Security & Secrets Management (DevSecOps)

Secure CI/CD and manage secrets.

Tools:

- HashiCorp Vault

- Snyk

- Aqua Security

[Step 9] 9. Collaboration & Issue Tracking

Track tasks and documentation.

Tools:

- Jira

- Slack / Microsoft Teams

- Confluence

[Projects] DevOps Portfolio Projects

1. CI/CD Pipeline Project - Use Jenkins/GitLab CI to deploy an app.

2. Docker + Kubernetes Project - Containerize and deploy a microservice.

3. Infrastructure as Code - Use Terraform on AWS.

4. Monitoring Dashboard - Use Prometheus + Grafana.

[Tip] Pro Tip:

Use free-tier AWS or GCP + local tools (Docker Desktop, Minikube) for practice.