

DevOps

Month 1: Introduction to DevOps Principles and Practices

Week 1: Introduction to DevOps

- Definition and goals of DevOps
- Evolution and importance in modern software development
- Key principles and cultural aspects

Week 2-3: Continuous Integration and Continuous Deployment (CI/CD)

- CI/CD concepts and benefits
- Jenkins and other CI/CD tools
- Building and deploying a simple pipeline

Week 4-5: Infrastructure as Code (IaC)

- Introduction to IaC principles
- Tools like Terraform or AWS CloudFormation
- Creating and managing infrastructure using IaC

Week 6: Configuration Management and Orchestration

- Introduction to configuration management (e.g., Ansible, Puppet)
- Basics of container orchestration (e.g., Docker, Kubernetes)
- Building scalable and automated environments

Month 2: Advanced DevOps Concepts and Tools

Week 1-2: Monitoring and Logging

- Importance of monitoring in DevOps
- Tools like Prometheus, Grafana, ELK stack
- Implementing effective logging practices

Week 3-4: DevOps in Cloud Environments

- Leveraging cloud services for DevOps (e.g., AWS, Azure, Google Cloud)
- Cloud-native development and deployment
- Managing infrastructure and applications in the cloud

Week 5-6: Security in DevOps and Final Project

- Integrating security into the DevOps lifecycle
- Automated security testing
- Final project: Real-world DevOps implementation