NodeOps Syndicate

Curriculum

📌 DevOps Cohort (For Web3 Blockchain Professionals)

Objective: Equip blockchain professionals with the necessary DevOps skills to manage and scale infrastructure effectively.

📖 Module 1: DevOps Fundamentals for Web3

- What is DevOps?
- CI/CD for blockchain projects
- Version control & Git workflows

📝 **Assignment:** Set up a Git repository and implement a basic CI/CD pipeline.

📖 Module 2: Cloud Infrastructure & Automation

- Overview of cloud providers (AWS, GCP, Azure, DigitalOcean)
- Infrastructure as Code (Terraform, Pulumi)
- Automating deployments with Ansible & GitHub Actions

📝 **Assignment:** Deploy an infrastructure component using Terraform.

📖 Module 3: Linux, Networking, & Security

- Essential Linux commands for DevOps
- Secure Shell (SSH), firewalls, and networking basics
- Hardening Linux servers for blockchain applications
  📝 **Assignment:** Set up a secure SSH connection and configure firewall rules.

📖 Module 4: Containerization & Orchestration

- Docker fundamentals & best practices
- Kubernetes for blockchain workloads
- Helm charts for node deployments

📝 **Assignment:** Containerize a simple blockchain application using Docker.

📖 Module 5: Monitoring & Logging

- Observability stack (Prometheus, Grafana, Loki, ELK)
- Security monitoring with Falco & Wazuh
- Log aggregation & alerting strategies

📝 **Assignment:** Set up a monitoring dashboard using Prometheus and Grafana.

📖 Module 6: Advanced Cloud & Automation

- Serverless computing for blockchain analytics
- Autoscaling & self-healing infrastructure
- Immutable infrastructure with Packer

📝 **Assignment:** Implement autoscaling for a cloud-based blockchain node.

📖 Module 7: Final Project & Practical Exercises

- Set up an automated blockchain node deployment pipeline
- Build a Kubernetes-based blockchain infrastructure
- Present a DevOps implementation for a Web3 project

📝 **Assignment:** Build and deploy a fully automated blockchain infrastructure using the tools learned.
