DevOps Roadmap

Phase 1: Foundations (4-6 Weeks)

- **Linux Fundamentals:**
    - Command Line Interface (CLI) mastery: Navigation, file manipulation, process management, permissions.
    - Shell Scripting Basics: Automating tasks, loops, conditional statements, variables.
- **Networking Basics:**
    - TCP/IP Model: Understanding layers, protocols, and addressing.
    - Basic Networking Concepts: DNS, DHCP, Firewalls, Load Balancers.
- **Version Control (Git):**
    - Git Basics: Repository creation, committing changes, branching, merging.
    - Collaboration with Git: Pull requests, code reviews, resolving conflicts.

Phase 2: Core DevOps Tools and Practices (6-8 Weeks)

- **Continuous Integration/Continuous Delivery (CI/CD):**
    - CI Concepts: Automated build, test, and integration.
    - CD Concepts: Automated release and deployment pipelines.
    - CI/CD Tools: Jenkins, GitLab CI, CircleCI (Choose one to focus on initially).
- **Infrastructure as Code (IaC):**
    - IaC Concepts: Managing infrastructure through code.
    - Configuration Management Tools: Ansible, Puppet, Chef (Choose one to begin with).
    - Cloud Provisioning (AWS, Azure, or GCP - Choose one initially): Creating and managing virtual machines, networks, and storage.
- **Containerization (Docker):**
    - Docker Basics: Creating and managing containers, Dockerfiles, Docker Compose.

- Container Orchestration (Kubernetes): Deploying and managing containerized applications at scale.

Phase 3: Advanced DevOps and Specialization (4-6 Weeks)

- **Monitoring and Logging:**
  - Monitoring Tools: Prometheus, Grafana.
  - Logging Tools: ELK stack (Elasticsearch, Logstash, Kibana), Splunk.
- **Cloud-Native Development:**
  - Microservices Architecture: Understanding principles and patterns.
  - Serverless Computing: Exploring serverless platforms and functions.
- **Security in DevOps (DevSecOps):**
  - Security Best Practices: Integrating security throughout the DevOps pipeline.
  - Vulnerability Scanning and Penetration Testing Basics.