**Devops:**

**To start learning DevOps as a beginner, you need a structured approach covering foundational topics and practical tools. Below is a step-by-step guide:**

**1. Linux: Bash:**

File system: ls, cp, mv, rm

permissions: chmod, chown

processes: ps, top, kill

packages: apt, yum

**2. Networking concepts: Wireshark:**

OSI and TCP/IP models

IP addressing and subnetting

DNS and DHCP

HTTP, HTTPS,FTP, and SSH

Firewalls and security groups

ping, traceroute, and netstat

**3. GIT:**

Clone, commit, push, and pull

Branching and merging

Resolving merge conflicts

working with remote repositories

**4. Programming language: Python**

Python syntax and data structure

Modules and packages

write and execute Python scripts

work with files

handle errors

write automation scripts

**5. Cloud Providers: AWS:**

Launch, configure, and mange virtual servers

store and manage data

manage users, groups, and roles

setup and manage isolated networks

**6. Containerization: Docker:**

Create Docker images

starting, stopping and managing containers

write Docker files

Run multi-container apps using Docker compose

**7.CI/CD: Jenkins:**

create and manage Jenkins pipelines

write Jekinsfiles

Integrate automate tests

Automate the build process

Automate the deployment

**8. Orchestration and management: Kubernetes:**

overall architecture

key components

Manage resources

scale application

Networking model in Kubernetes

**9. Networking and Infrastructure as services: Nginx:**

Configure Nginx as a reverse proxy

configure it to act as a forward proxy

caching strategies

configure firewalls and security groups

**10. Configuration management: Ansible:**

write Ansible playbooks

Use roles and modules

Manage variables and templates

**11. Infrastructure as code (IAC): Terraform:**

Basic Concepts

Terraform Configuration files

Terraform modules

Advanced concepts

**12. Monitoring and Logging: Prometheus and Grafana**

Architecture and data model

collect metrics

write queries

set up alerts