30-Day DevOps + Cloud Practice Guide

Week 1 – Linux & Git Basics

Day 1: Linux Intro & Navigation

Notes: ls, pwd, cd, mkdir, touch, rm
Task: Explore directories
Project: Create folder devops-learning and inside it, create files day1.txt to day5.txt.

Day 2: File Handling

Notes: cp, mv, cat, nano, vi
Task: Edit & move files
Project: Create notes.txt, write commands in it using nano, move it to /home//projects/.

Day 3: Permissions

Notes: chmod, chown
Task: Create new user & assign file ownership
Project: Create secret.txt and allow access only to your new user.

Day 4: Networking Basics

Notes: ip a, ping, curl, nslookup
Task: Ping a domain
Project: Script to ping google.com 5 times and save output to ping.log.

Day 5: SSH & EC2

Notes: ssh, scp
Task: Connect to AWS EC2
Project: Launch free-tier EC2 instance, connect using SSH with .pem key.

Day 6: Git Basics

Notes: git init, git clone, git add, git commit
Task: Create repo & commit
Project: Push devops-learning folder to GitHub.

Day 7: Git Branches

Notes: git branch, git checkout, git merge
Task: Create branch & merge
Project: Add a file in feature-branch and merge it into main.

Week 2 – Docker Basics

Day 8: Containers vs VMs

Notes: Docker architecture
Task: Install Docker, run hello-world
Project: Write difference between VM & Container with diagram.

Day 9: Running Containers

Notes: docker run, docker ps
Task: Run NGINX
Project: Run NGINX container → access on localhost:8080.

Day 10: Container Access

Notes: docker exec -it
Task: Enter container
Project: Run Ubuntu container, install curl inside it.

Day 11: Images

Notes: docker images, docker pull
Task: Pull MySQL
Project: Run MySQL container, connect with mysql -u root -p.

Day 12: Dockerfile

Notes: FROM, RUN, CMD
Task: Write Dockerfile
Project: Dockerfile for Python app that prints 'Hello DevOps'.

Day 13: Build & Tag

Notes: docker build -t
Task: Build image
Project: Build & run Python Docker image.

Day 14: DockerHub

Notes: docker push
Task: Push image
Project: Push Python app image to DockerHub.

Week 3 – CI/CD & Kubernetes Basics

Day 15: Jenkins Setup

Notes: Pipelines overview
Task: Install Jenkins
Project: Create Jenkins pipeline to print 'Hello Jenkins'.

Day 16: CI/CD Basics

Notes: GitHub Actions
Task: Create workflow
Project: Setup GitHub Actions pipeline to auto-build Python Dockerfile.

Day 17: Kubernetes Intro

Notes: Pod, Node
Task: Install Minikube
Project: Run NGINX pod.

Day 18: Deployments

Notes: kubectl apply
Task: Create YAML file
Project: Deploy sample app using Deployment YAML.

Day 19: Services

Notes: ClusterIP, NodePort
Task: Expose app
Project: Expose app via NodePort and access in browser.

Day 20: ConfigMaps & Secrets

Notes: Store env variables
Task: Create ConfigMap
Project: Deploy MySQL pod with username/password in Secrets.

Day 21: Scaling

Notes: kubectl scale
Task: Scale pods
Project: Scale app from 1 to 3 pods.

Week 4 – Terraform & Cloud Basics

Day 22: Terraform Intro

Notes: Providers, resources
Task: Install Terraform
Project: Write config to create hello-world.txt.

Day 23: EC2 with Terraform

Notes: aws_instance
Task: Launch EC2
Project: Terraform script to create EC2 with security group.

Day 24: S3 with Terraform

Notes: aws_s3_bucket
Task: Create bucket
Project: Terraform → create S3 bucket.

Day 25: AWS EC2 Basics

Notes: Key pairs, SG
Task: Launch EC2 manually
Project: Deploy NGINX on EC2.

Day 26: AWS S3 Basics

Notes: Static site hosting
Task: Create bucket
Project: Host static HTML page on S3 bucket.

Day 27: Azure Basics

Notes: Resource groups, VMs
Task: Launch VM
Project: Deploy NGINX on Azure VM.

Day 28: Azure Blob Storage

Notes: Upload & access files
Task: Create Blob Storage
Project: Upload file, generate public URL.

Week 5 – Final DevOps Workflow

Day 29: Jenkins Pipeline Advanced

Notes: Multi-stage pipeline
Task: Automate Docker build
Project: Jenkins pipeline → build Docker image, push to DockerHub, deploy to Kubernetes.

Day 30: Monitoring

Notes: Prometheus + Grafana
Task: Setup monitoring
Project: Deploy Prometheus + Grafana → monitor CPU/RAM of container.