Intermediate Cloud Computing Course

- Cloud Fundamentals

- -What is Cloud Computing
- -Benefits of Cloud Computing
- -Cloud Service Models: IaaS, PaaS, SaaS
- -Deployment Models: Public, Private, Hybrid

- AWS Basics

- -AWS Global Infrastructure: Regions, Availability Zones
- -AWS Console Navigation
- -Setting up Free Tier Account
- -Creating IAM Users, Roles, Policies
- -AWS CLI (intro + basic commands)

- AWS Compute Services

- -EC2: Instance Types, AMI, Security Groups

-Launching EC2 with custom configs

-Elastic Beanstalk (App Deployment Flow)

-Lambda Functions (Serverless Execution Model)

-Auto Scaling & Load Balancing (basic demo)

- AWS Storage Services
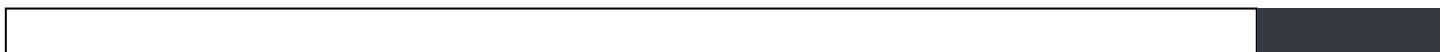
-S3: Buckets, Objects, Permissions

-Hosting static website on S3

-Lifecycle Policies & Versioning

-EBS: Types & Attach/Detach Demo

-EFS: Shared Storage in EC2

-Glacier: Archival Storage Use Case

- AWS Databases

-RDS: Creating MySQL/PostgreSQL instance

-DynamoDB: NoSQL intro, CRUD Operations

-Aurora (Intro + Use Case)

- AWS Networking

-VPC Basics: CIDR, Subnets, Route Tables

-Internet Gateway & NAT

-Security Groups vs NACLs

-Load Balancer (ALB Basics)

-Simple VPC Architecture Demo

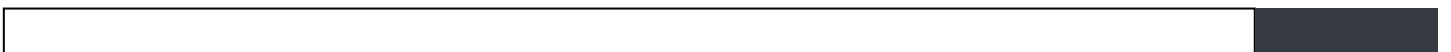## - AWS Security & Monitoring

-IAM Deep Dive: Users, Roles, Groups

-KMS Basics (Encryption)

-CloudTrail vs CloudWatch

-CloudWatch Logs, Alarms, Dashboards

-AWS Config & Trusted Advisor

- AWS Management Tools

-Billing Dashboard

-AWS Budgets & Alerts

-Cost Explorer

-Resource Groups & Tagging

-Trusted Advisor

- Real-World Hands-On Projects

-Deploy a Node.js App using Elastic Beanstalk

-Serverless REST API with Lambda + API Gateway + DynamoDB

-EC2 + RDS + S3 Full-stack Web App

-S3 Static Website + Route53 Custom Domain

◆ **DevOps Basics with AWS**

CI/CD Flow: Overview

-AWS CodeCommit, CodeBuild, CodeDeploy (Conceptual)

-CodePipeline Demo with GitHub & Elastic Beanstalk

Docker:

- Docker intro

- Docker Layering

- Docker Networks, Volumes, Push & Exec

- Docker Bind Mounts

- Docker Swarn (optional)