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# Cloud Developer

## 1. Introduction to Cloud Computing

- 1.1 Understanding Cloud Computing
- 1.2 Cloud Service Models (IaaS, PaaS, SaaS)
- 1.3 Cloud Deployment Models (Public, Private, Hybrid)
- 1.4 Cloud Providers (AWS, Azure, Google Cloud, etc.)

## 2. Fundamentals of Programming and Development

- 2.1 Programming Languages (e.g., Python, Java, Node.js)
- 2.2 Version Control (e.g., Git)
- 2.3 Integrated Development Environments (IDEs)
- 2.4 Basic Software Development Lifecycle (SDLC) principles

## 3. Cloud Infrastructure

- 3.1 Virtualization and Containers (e.g., Docker)
- 3.2 Infrastructure as Code (IaC)
- 3.3 Networking in the Cloud
- 3.4 Compute Resources (Virtual Machines, Containers)
- 3.5 Storage Services

## 4. Cloud Development Platforms

- 4.1 Introduction to Cloud Platform Services
- 4.2 Serverless Computing
- 4.3 Platform as a Service (PaaS)
- 4.4 Microservices Architecture



## **5.Database Services**

- 5.1 Relational Databases
- 5.2 NoSQL Databases
- 5.3 Data Warehousing
- 5.4

## **6.Security and Compliance**

- 6.1 Cloud Security Best Practices
- 6.2 Identity and Access Management (IAM)
- 6.3 Encryption and Data Protection
- 6.4 Compliance and Governance in the Cloud

## **7.DevOps and Continuous Integration/Continuous Deployment(CI/CD)**

- 7.1 CI/CD Pipelines
- 7.2 Automation and Orchestration
- 7.3 Monitoring and Logging
- 7.4 Testing in the Cloud Environment

## **8.Scalability and Performance Optimization**

- 8.1 Auto-scaling
- 8.2 Load Balancing
- 8.3 Caching Strategies
- 8.4 Performance Tuning



## **9.Application Development and Cloud Services**

- 9.1 Building and Deploying Web Applications
- 9.2 Cloud-native Development
- 9.3 API Development and Management
- 9.4 Integration with Cloud Services (e.g., AWS Lambda, AzureFunctions)

## **10.Case Studies and Hands-On Projects**

- 10.1 Real-world scenarios and case studies
- 10.2 Practical hands-on projects using cloud services
- 10.3 Troubleshooting and Debugging

## **11.Best Practices and Advanced Topics**

- 11.1 Cloud Cost Management
- 11.2 High Availability and Disaster Recovery
- 11.3 Multi-region Deployment
- 11.4 DevSecOps

## **12.Final Projects and Capstone**

- 12.1 Building a complete cloud-based application
- 12.2 Capstone project to demonstrate skills and knowledge