AWS Certified Data Engineer - Associate

Content

Day 1

- **Module 1: Introduction to Data Engineering on AWS**
  - Overview of AWS Data Services
  - Key Concepts in Data Engineering
  - AWS Well-Architected Framework for Data
- **Module 2: Data Ingestion**
  - AWS Data Ingestion Services (e.g., Kinesis, S3)
  - Real-time Data Streaming with Amazon Kinesis
  - Batch Data Ingestion with AWS Glue
  - Hands-on Lab: Implementing Data Ingestion Pipelines
- **Module 3: Data Storage**
  - Storage Options on AWS (S3, Redshift, RDS, DynamoDB)
  - Data Lake Architecture with Amazon S3
  - Best Practices for Data Storage and Security
  - Hands-on Lab: Setting Up a Data Lake on AWS

Day 2

- **Module 4: Data Processing**
  - ETL and ELT Processes
  - Using AWS Glue for ETL
  - Real-time Processing with AWS Lambda and Kinesis
  - Hands-on Lab: Building a Data Processing Pipeline
- **Module 5: Data Analysis and Visualization**
  - Data Warehousing with Amazon Redshift
  - Analyzing Data with Amazon Athena
  - Visualization with Amazon QuickSight
  - Hands-on Lab: Data Analysis and Visualization with AWS Tools
- **Module 6: Machine Learning Integration**
  - Introduction to Machine Learning on AWS
  - Integrating Amazon SageMaker with Data Pipelines
  - Hands-on Lab: Building a Simple ML Model with Amazon SageMaker

Day 3

- **Module 7: Data Security and Governance**
  - Data Encryption and Key Management
  - Access Control with IAM and Lake Formation
  - Data Governance Best Practices
  - Hands-on Lab: Implementing Data Security and Governance

- **Module 8: Monitoring and Optimization**
  - Monitoring Data Workloads with CloudWatch and AWS X-Ray
  - Performance Optimization Techniques
  - Cost Management and Optimization
  - Hands-on Lab: Monitoring and Optimizing a Data Pipeline
- **Module 9: Capstone Project**
  - End-to-End Data Engineering Project
  - Building a Complete Data Pipeline from Ingestion to Visualization
  - Applying Best Practices and Optimization Techniques
  - Presentation and Review of the Capstone Project