Data Analytics with Microsoft Fabric and Databricks

Course Duration: 32 Hours **Course code: DAMFD**

1. Course Overview

This course provides participants with an in-depth understanding of how to leverage Microsoft Fabric and Databricks for modern data analytics. Participants will learn to integrate data across multiple sources, transform and analyze it using advanced analytics techniques, and generate actionable insights. The course covers architecture, data ingestion, data engineering, machine learning workflows, visualization, and governance practices.

2. What you'll learn?

- Understand the Microsoft Fabric and Databricks architecture.
- Ingest, process, and transform structured and unstructured data.
- Apply data modeling and analytics techniques using Fabric and Databricks.
- Implement machine learning pipelines for predictive analytics.
- Develop dashboards and visualizations to communicate insights.
- Apply best practices for data governance, security, and compliance.

3. Target Audience

- Data Engineers, Data Analysts, and Data Scientists
- BI Developers and Analytics Professionals
- Cloud Solution Architects working on data platforms
- IT Professionals responsible for enterprise data management

4. Pre-Requisites

- Basic knowledge of SQL and data analysis concepts
- Familiarity with cloud platforms (Microsoft Azure preferred)

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- Understanding of data engineering or data science fundamentals

5. Course content

Module 1: Introduction to Microsoft Fabric and Databricks

- Overview of Microsoft Fabric and its components
- Key concepts in Databricks architecture
- Data analytics lifecycle and best practices
- Integration between Fabric, Databricks, and other Microsoft services

Module 2: Data Ingestion and Integration

- Connecting to structured and unstructured data sources
- Ingesting data using Fabric pipelines and Databricks notebooks
- Data transformation and ETL best practices
- Using Delta Lake for unified data storage

Module 3: Data Engineering with Databricks

- Creating and managing Databricks workspaces and clusters
- Managing data pipelines and workflows
- Handling data quality, schema evolution, and error handling

Module 4: Data Modeling and Analytics

- Understanding data modeling concepts in Fabric and Databricks
- Designing tables, views, and data marts
- Implementing analytical queries for business insights
- Optimizing query performance and storage

Module 5: Advanced Analytics and Machine Learning

- Introduction to ML workflows in Databricks
- Preparing data for machine learning
- Training, testing, and deploying models

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- Leveraging Microsoft Fabric AI capabilities for predictive analytics

Module 6: Data Visualization and Reporting

- Creating dashboards using Microsoft Fabric tools (Power BI integration)
- Designing interactive reports and visualizations
- Monitoring and sharing insights across teams

Module 7: Security, Governance, and Compliance

- Implementing role-based access control (RBAC)
- Data masking, encryption, and privacy management
- Auditing and compliance reporting in Fabric and Databricks

Module 8: Optimization, Monitoring, and Best Practices

- Performance tuning for Databricks clusters and pipelines
- Cost management and resource optimization
- Common pitfalls and troubleshooting tips
- Case studies and real-world implementation scenarios