Implementing a Data Analytics Solution with Azure Synapse Analytics (DP-3012)

About This Course:

Implementing a Data Analytics Solution with Azure Synapse Analytics certification validates a professional's expertise in using Azure Synapse Analytics to implement and manage data analytics solutions. Azure Synapse Analytics is a limitless

analytics service that brings together enterprise data warehousing and Big Data analytics. It gives industries the capability to query data on their terms, using either serverless on-demand or provisioned resources. Professionals with this certification can facilitate large-scale data exploration, warehousing, and analysis, thereby empowering organizations to make data-driven decisions quickly, scale and optimize their resources, and leverage advanced data analytics and machine learning capabilities.

Course Objectives:

- Introduction to Azure Synapse Analytics
- Use Azure Synapse serverless SQL pool to query files in a data lake
- Analyze data with Apache Spark in Azure Synapse Analytics
- Use Delta Lake in Azure Synapse Analytics
- Analyze data in a relational data warehouse
- Build a data pipeline in Azure Synapse Analytics

Audience:

The Audience should have familiarity with notebooks that use different languages and a Spark engine, such as Databricks, Jupyter Notebooks, Zeppelin notebooks and more. They should also have some experience with SQL, Python, and Azure tools, such as Data Factory.

Prerequisites:

- Fundamental knowledge of data warehouse concepts
- Basic understanding of Azure services, especially Azure Synapse Analytics
- Experience with data processing languages like SQL, Python, or Scala
- Familiarity with data integration and transformation processes

Course Outline:

Identify the business problems that Azure Synapse Analytics addresses.
Describe core capabilities of Azure Synapse Analytics.
Determine when to use Azure Synapse Analytics.
Identify capabilities and use cases for serverless SQL pools in Azure Synapse Analytics
Query CSV, JSON, and Parquet files using a serverless SQL pool
Create external database objects in a serverless SQL pool
Identify core features and capabilities of Apache Spark.
Configure a Spark pool in Azure Synapse Analytics.
Run code to load, analyze, and visualize data in a Spark notebook.
Describe core features and capabilities of Delta Lake.
Create and use Delta Lake tables in a Synapse Analytics Spark pool.
Create Spark catalog tables for Delta Lake data.
Use Delta Lake tables for streaming data.
Query Delta Lake tables from a Synapse Analytics SQL pool.
Design a schema for a relational data warehouse.

Create fact, dimension, and staging tables.
Use SQL to load data into data warehouse tables.
Use SQL to query relational data warehouse tables.
Describe core concepts for Azure Synapse Analytics pipelines.
Create a pipeline in Azure Synapse Studio.
Implement a data flow activity in a pipeline.
Initiate and monitor pipeline runs.

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