

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

**Course Number:** MOC-DP-3012  
**Duration:** 1 day

**Overview**

In Microsoft's official course DP-3012, Implementing a Data Analytics Solution with Azure Synapse Analytics, attendees learn how to manage and use SQL dedicated and serverless Spark pools. Students master data wrangling and the ELT process using Synapse Pipelines, which offers a familiar flow for Azure Data Factory (ADF) users, simplifying data movement to the Synapse dedicated pool database.

**Prerequisites**

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.

**Materials**

All Microsoft 365 training students receive Microsoft official courseware.

**Software Needed on Each Student PC**

Attendees will not need to install any software on their computer for this class. The class will be conducted in a remote environment that Accelebrate will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will be fine.

**Objectives**

* Identify the business problems that Azure Synapse Analytics addresses
* Understand the capabilities and use cases for serverless SQL pools in Azure Synapse Analytics
* Use Spark in Azure Synapse Analytics to analyze and visualize data in a data lake.
* Work with Delta Lake, an open-source relational storage area for Spark, to implement a data lakehouse architecture in Azure Synapse Analytics
* Use Relational data warehouses for data models, reports, and analysis.
* Use Azure Synapse Analytics pipelines to build integrated data solutions that extract, transform, and load data across diverse systems.

**Outline**

* Introduction to Azure Synapse Analytics
  + What is Azure Synapse Analytics
  + How Azure Synapse Analytics works
  + When to use Azure Synapse Analytics
* Use Azure Synapse serverless SQL pool to query files in a data lake
  + Understand Azure Synapse serverless SQL pool capabilities and use cases
  + Query files using a serverless SQL pool
  + Create external database objects
* Analyze data with Apache Spark in Azure Synapse Analytics
  + Get to know Apache Spark
  + Use Spark in Azure Synapse Analytics
  + Analyze data with Spark
  + Visualize data with Spark
* Use Delta Lake in Azure Synapse Analytics
  + Understand Delta Lake
  + Create Delta Lake tables
  + Create catalog tables
  + Use Delta Lake with streaming data
  + Use Delta Lake in a SQL pool
* Analyze data in a relational data warehouse
  + Design a data warehouse schema
  + Create data warehouse tables
  + Load data warehouse tables
  + Query a data warehouse
* Build a data pipeline in Azure Synapse Analytics
  + Understand pipelines in Azure Synapse Analytics
  + Create a pipeline in Azure Synapse Studio
  + Define data flows
  + Run a pipeline
* Conclusion