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Premium Quality Training

*Build Cloud Skills
Build Your Future!*

Azure Data Engineer TRAINING

From SQL to Cloud. From Data to Decisions.

Icons representing Azure services: Azure SQL Database, Azure Data Factory, Azure Synapse Analytics, Azure Data Lake Storage, Databricks & PySpark, Azure DevOps & Microsoft Fabric.

Icons representing training features: 100% Practical Training, Real-Time Projects, Interview Preparation, Resume Guidance, High-Demand Career Opportunities.

Career Growth
From Analyst to Cloud Expert

Bar chart showing career progression: Data Analyst, Business Analyst, Data Engineer, Azure Data Engineer, Cloud Architect.

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Mr. Sai Phanindra Tholeti
Trainer
20+ Years of Experience in Database, Azure & Data Engineering

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Thank you for your interest in **SQL School's** Azure Data Engineering Training Program. I'm **Mr. Sai Phanindra**, your trainer and mentor for this course. With 21 years of experience in Database Technologies, Data Engineering, Business Intelligence, and Data Warehousing, I bring extensive real-world expertise into every training session.

Let's connect: [linkedin.com/in/saiphanindra/](https://www.linkedin.com/in/saiphanindra/)

What You Will Learn to Build

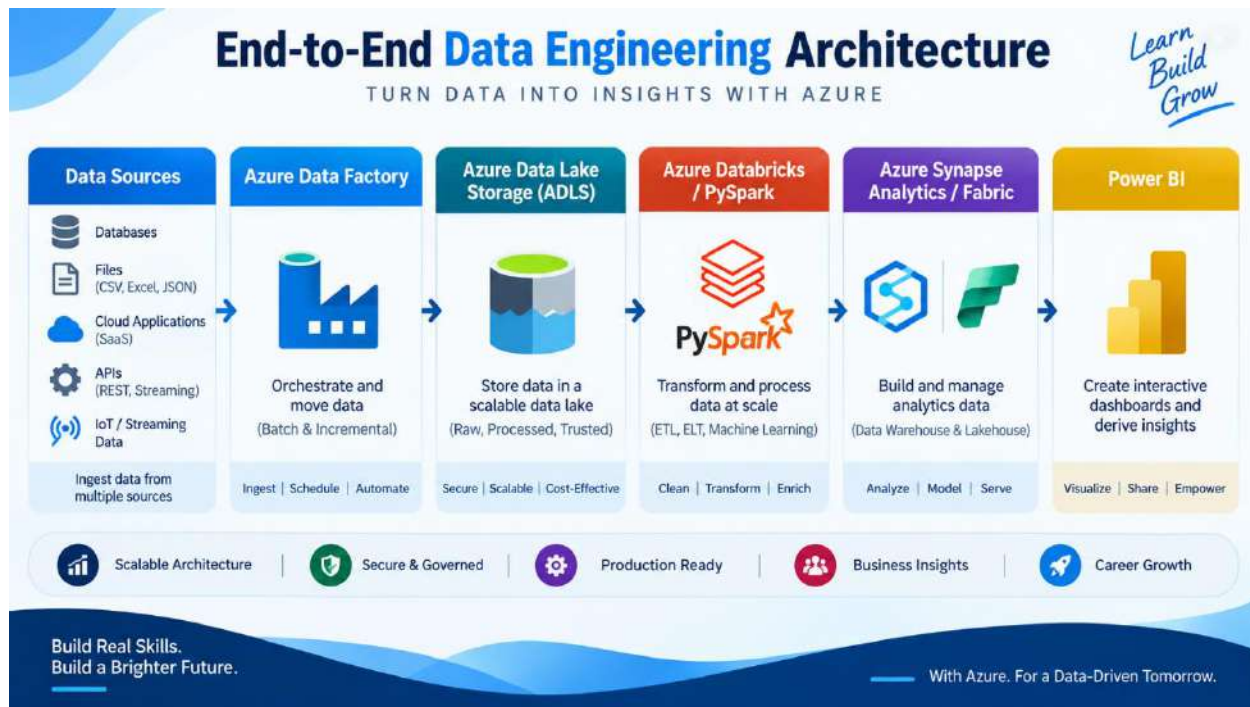
This Azure Data Engineer Training is designed to help you understand and implement a **complete end-to-end data engineering solution** using Microsoft Azure technologies. Instead of learning each technology in isolation, you will understand **how different Azure data services work together in a real-world data platform**.

Through hands-on training and projects, you will learn how to:

- Ingest data from databases, files, APIs and streaming sources
- Orchestrate data pipelines using **Azure Data Factory (ADF)**
- Store and manage large-scale data using **Azure Data Lake Storage (ADLS)**
- Transform and process data using **Azure Databricks, Spark & PySpark**
- Build **Bronze → Silver → Gold** data architectures
- Develop analytics solutions using **Azure Synapse Analytics & Microsoft Fabric**
- Connect transformed data to **Power BI** for reporting and business insights
- Implement security, monitoring, optimization and CI/CD practices

Understand the Complete Data Engineering Journey

The following architecture shows the **end-to-end data journey** you will learn and implement during this program: **Sources → ADF → ADLS → Databricks/PySpark → Synapse/Fabric → Power BI**



Azure Data Engineer Training Course Content

This hands-on training program is divided into **FOUR** comprehensive modules:

Module 1: SQL Server (MSSQL) & TSQL

Module 2: Azure Data Engineering

- Part 1: Databricks (Spark, Python ETL, PySpark, Azure Databricks, Airflow, AI)
- Part 2: Azure Fundamentals, ADLS & Stream Analytics, Logic Apps
- Part 3: Azure Data Factory & Synapse, Fabric Migrations
- Part 4: Real-Time Projects (Two Projects: Retail Sales, Travel Company)
- Part 5: Data Engineering Certifications

Module 3: Power BI, Big Data Analytics (Optional, Recommended Module)

Module 4: Interview & Career Preparation

This Azure Data Engineering course includes complete guidance for below Certifications:

- **Microsoft DP-750 Exam** (Azure Databricks)
- **Databricks Data Engineer Associate Exam** (Open-Source Databricks)

Prerequisites

- ✓ None
- ✓ The course starts from the fundamentals and progresses to advanced Data Engineer concepts!

Azure Data Engineering Training Plans			
PLAN	WHAT YOU'LL LEARN	DURATION	REALTIME PROJECTS
 PLAN A	1 Azure Data Engineer (ADF, Synapse, Databricks, Spark, PySpark, Microsoft Fabric , Genie AI, ADLS, more..)	 7 Weeks	 2 Realtime Projects  –
 PLAN B	1 MSSQL & TSQL, Tuning 2 Azure Data Engineer (ADF, Synapse, Databricks, Spark, PySpark, Microsoft Fabric , Genie AI, ADLS, more..)	 10 Weeks	 2 Realtime Projects  1 Capstone Project
 PLAN C	1 MSSQL & TSQL, Tuning 2 Azure Data Engineer (ADF, Synapse, Databricks, Spark, PySpark, Microsoft Fabric , Genie AI, ADLS, more..) 3 Power BI with Big Data Analytics & Co-Pilot	 14 Weeks	 3 Realtime Projects  1 Capstone Project
 100% Practical Training  Industry Expert Trainers  Real-World Projects  Job-Ready Skills			

Choose your preferred plan to suit your learning needs!

Training Modes			
 LIVE Online Training		 Self Paced Videos	
1	 Highly Interactive	1	 Very Detailed, Step by Step
2	 10:90 Theory:Practical Ratio	2	 10:90 Theory:Practical Ratio
3	 Daily Practice Hand-Outs	3	 Hand-outs for each Video
4	 Daily Assignments	4	 Video wise Assignments
5	 Weekly Mock Interviews	5	 Bi-Weekly Mock Interviews
6	 Realtime Projects (LIVE Class)	6	 Realtime Projects (LIVE Class)

Detailed Course Content

Module 1: SQL Server (MSSQL), TSQL

Ch 1: SQL Database Job Roles

- ✓ Database Intro
- ✓ OLTP, DWH, OLAP

- ✓ DBMS Basics
- ✓ ETL & Data Engineer Job Roles

Ch 2: Database Intro & Installations

- ✓ SQL Server Installations
- ✓ Instance & Collations
- ✓ SSMS Tool Installation
- ✓ Connections, Authentications

Ch 3: SQL Basics V1 (Commands)

- ✓ SQL Basics (DDL, DML, etc..)
- ✓ Creating Databases, Tables
- ✓ Data Inserts (GUI, SQL)
- ✓ Basic SELECT Queries

Ch 4: SQL Basics V2 (Commands, Operators)

- ✓ DDL: Create, Alter, Drop
- ✓ DML: Insert, Update, Delete
- ✓ DQL: Select, Fetch
- ✓ Add, Truncate Statements
- ✓ SQL Operators

Ch 5: Data Types & Variables

- ✓ Integer Data Types
- ✓ Character, MAX Data Types
- ✓ Decimal & Boolean Data Types
- ✓ Date and Time Data Types
- ✓ SQL_Variant Type

Ch 6: Data Imports

- ✓ Data Imports with Excel
- ✓ Data Imports with CSV
- ✓ Auto Detection of Data Types
- ✓ OLE-DB Connections
- ✓ Order By, TOP, OFFSET

Ch 7: Schemas & Batches

- ✓ Schemas & Table Grouping
- ✓ Real-world Banking Database
- ✓ 2 Part, 3 Part & 4 Part Naming
- ✓ Batch Concept & “Go” Command

Ch 8: Constraints, Keys & RDBMS

- ✓ Unique Key & Check
- ✓ Primary Key Constraint
- ✓ Foreign Keys, Default
- ✓ DB Diagrams & ER Models

Ch 9: Normal Forms & RDBMS

- ✓ Normal Forms: 1 NF, 2 NF
- ✓ 3 NF, BCNF and 4 NF
- ✓ 1:1, 1:M, M:1 Cardinality
- ✓ Cascading Keys, Self Referencing Keys

Ch 10: Joins & Queries

- ✓ Joins: Table Comparisons
- ✓ Inner Joins & Matching Data
- ✓ Outer Joins: LEFT, RIGHT
- ✓ Full Outer Joins & Aliases
- ✓ Self Joins & Aliases

Ch 11: Views & RLS

- ✓ Views: Realtime Usage
- ✓ DML, SELECT with Views
- ✓ WITH CHECK OPTION
- ✓ Row Level Security (RLS)
- ✓ Important System Views

Ch 12: Stored Procedures - 1

- ✓ Stored Procedures: Realtime Use
- ✓ Parameters Concept with SPs
- ✓ Procedures with SELECT
- ✓ System Stored Procedures
- ✓ Stored Procedures, Tuning

Ch 13: Stored Procedures - 2

- ✓ Merge Statement (Upsert)
- ✓ Merge with OLTP & DWH
- ✓ Matched and Not Matched
- ✓ Merge & SP Recompilations

Ch 14: User Defined Functions - 1

- ✓ Functions in Real-world
- ✓ Scalar & Table Value Functions
- ✓ Parameterized Queries
- ✓ Variables & Parameters
- ✓ Function Executions

Ch 15: User Defined Functions - 2

- ✓ Date & Time Functions
- ✓ String Functions & Queries
- ✓ Aggregated Functions & Usage
- ✓ Window Functions (Rank)
- ✓ Row_Number, DenseRank
- ✓ Partition By & Order By

Ch 16: Triggers & Automations

- ✓ Need for Triggers in Real-world
- ✓ DDL & DML Triggers
- ✓ For / After Triggers
- ✓ Instead Of Triggers
- ✓ Disabling DMLs Triggers

Ch 17: Transactions & ACID

- ✓ Auto Commit Transaction
- ✓ Explicit Transactions
- ✓ COMMIT, ROLLBACK
- ✓ Checkpoint & Query Blocking
- ✓ READPAST, LOCKHINT

Ch 18: Indexes Basics, Tuning

- ✓ Clustered Index, Primary Key
- ✓ Non Clustered Index
- ✓ Query Optimizer
- ✓ Tuning Queries

Ch 19: CTEs & Tuning

- ✓ Common Table Expression
- ✓ CTEs for Data Retrieval
- ✓ CTEs for DML Operations
- ✓ CTEs for Data Cleansing
- ✓ CTEs with Row Number

Ch 20: Cursors & Temp Tables

- ✓ Cursors & Fetch
- ✓ Scroll, Absolute Types
- ✓ Local & Global Temp Tables
- ✓ SELECT..INTO Statement

Ch 21: Sub Queries

- ✓ Basic Sub Queries
- ✓ Aggregations
- ✓ Combining Queries
- ✓ UNION, UNION ALL

Ch 22: Group By Queries

- ✓ Group By, Distinct
- ✓ GROUP BY, HAVING
- ✓ Cube() and Rollup()
- ✓ Sub Totals & Grand Totals
- ✓ Grouping() & Usage

Ch 23: Joins with Group By, Sub Queries

- ✓ 3 Table, 4 Table Joins
- ✓ Join Queries & WHERE
- ✓ Join & Group By, Sub Queries
- ✓ IIF(), CASE Statement
- ✓ Query Execution Order

Ch 24: Linked Servers

- ✓ SQL Server Instances
- ✓ Linked Server: Creation
- ✓ Linked Server: Testing
- ✓ Scripting Linked Servers
- ✓ Realtime Usage
- ✓ Remote DB Access

Ch 25: Server Architecture

- ✓ Database Engine Components
- ✓ Parser, Compiler & Optimizer
- ✓ Protocols and Query Processing
- ✓ MDAC and CLR Components
- ✓ Parsing and Compilation
- ✓ Memory Manager & IO Managers
- ✓ SQL OS Components, MDAC

Ch 26: DB Architecture (VLDB)

- ✓ Planning Large Databases
- ✓ Primary, Secondary Data Files
- ✓ Filegroups, Spacing and Sizing
- ✓ Log File: Usage and Precautions
- ✓ Creating Tables with Filegroups
- ✓ Pages and Extents for Storage
- ✓ VLF, MiniLSN & Checkpoint

Ch 27: Capstone Project (HealthCare Domain)

- ✓ HealthCare Database
- ✓ DB & Table Design
- ✓ Data Validations
- ✓ Query Design
- ✓ Query Tuning
- ✓ Excel Analytics

Module 2: Azure Data Engineer

Part 1: Databricks (Spark, PySpark, Big Data, Genie AI)

Ch 1: Databricks Introduction

- ✓ Cloud ETL, DWH
- ✓ Cloud Computing
- ✓ Databricks Concepts

- ✓ Databricks Account
- ✓ Big Data in Cloud

Ch 2: Databricks Architecture

- ✓ Databricks Runtime (DBR)
- ✓ RDD & DAG
- ✓ Databricks Lakehouse Architecture
- ✓ Spark Compute Concepts
- ✓ Workers & Drivers
- ✓ Databricks Framework
- ✓ Databricks APIs

Ch 3: Unity Catalog

- ✓ Unity Catalog Concepts
- ✓ Metastore
- ✓ Catalogs & Schemas
- ✓ Managed & External Tables
- ✓ Storage Credentials
- ✓ External Locations
- ✓ Volumes
- ✓ GRANT / REVOKE
- ✓ Data Permissions
- ✓ Lineage, Data Governance
- ✓ Databricks Workspace UI
- ✓ Spark Table Creations

Ch 4: Spark SQL: Basics

- ✓ Spark SQL Notebooks
- ✓ Creating Catalog
- ✓ Creating Schemas
- ✓ Creating Tables
- ✓ Spark Data Types
- ✓ PySpark API: SQL Queries
- ✓ Dropping Objects
- ✓ Notebooks: Exports, Clone

Ch 5: Spark SQL: Table Types

- ✓ Delta Tables
- ✓ Managed Tables
- ✓ External Tables
- ✓ Data Partitioning
- ✓ Union, Views in Spark
- ✓ External Volumes

Ch 6: Spark SQL: Functions

- ✓ Math, Sort Functions
- ✓ String, DateTime Functions

- ✓ Conditional Statements
- ✓ SQL Expressions with `expr()`
- ✓ Volume for our Data Assets
- ✓ File Formats, Schema Inference
- ✓ Spark SQL Aggregations

Ch 7: Spark SQL: Time Travel

- ✓ Time Travel Concepts
- ✓ Spark DB: Logical Architecture
- ✓ Spark DB: Physical Store
- ✓ Data File & Log File Store
- ✓ Time Travel
- ✓ DESCRIBE, EXTENDED
- ✓ HISTORY
- ✓ Version Numbers

Ch 8: Python: Introduction, Print

- ✓ Python Introduction
- ✓ Python Versions
- ✓ Python Implementations
- ✓ Python in Spark (PySpark)
- ✓ Python `Print()`
- ✓ Single, Multiline Statements

Ch 9: Python: Variables

- ✓ Python Variables
- ✓ Variable Declarations
- ✓ Variable Values
- ✓ Multi Variable Values
- ✓ Common Variable Values
- ✓ Realtime use of Variables

Ch 10: Python: Operators

- ✓ Need for Operators
- ✓ Arithmetic Operators
- ✓ Assignment Operators
- ✓ Comparison Operators
- ✓ Operator Precedence
- ✓ Operands in Python

Ch 11: Python: Control Statements

- ✓ Python Control Structures
- ✓ If ... Else Statement
- ✓ Short Hand If
- ✓ ELIF & ELSE IF Statements
- ✓ OR, AND Concepts
- ✓ Python Loops

Ch 12: Python: Data Types

- ✓ Python Data Types
- ✓ Integer / Int Data Types
- ✓ Float, String Data Types
- ✓ List Data Type
- ✓ Dictionary Data Type
- ✓ Tuple Data Type

Ch 13: Python: Modules & DataFrames

- ✓ Python Modules
- ✓ Pandas, NumPy
- ✓ DataFrame Concepts
- ✓ Handling Nulls
- ✓ Data Cleansing Concepts
- ✓ Python Functions

Ch 14: PySpark DataFrames & Transformations

- ✓ Creating PySpark DataFrames
- ✓ Reading Data Sources
- ✓ select(), filter(), withColumn()
- ✓ Handling NULL Values
- ✓ Data Type Casting
- ✓ Joins, Aggregations
- ✓ Window Functions
- ✓ Writing DataFrames

Ch 15: Medallion Architecture - 1

- ✓ Medallion Architecture
- ✓ Aggregated Data Loads
- ✓ Bronze, Silver and Gold
- ✓ Temp Views
- ✓ Spark Tables (Parquet)
- ✓ Work with File Sources

Ch 16: Medallion Architecture - 2

- ✓ Medallion Architecture
- ✓ Azure SQL DB Connections
- ✓ Joining Source Tables
- ✓ Data Frames, Temp Views
- ✓ Aggregated Data Loads
- ✓ Gold Data Consumption
- ✓ Raw Sources → Bronze → Silver → Gold → BI/Analytics

Ch 17: Delta Lake

- ✓ Databricks Delta Lake
- ✓ Schema Evolution

- ✓ Azure SQL DB Connections
- ✓ DataFrames, Temp Views
- ✓ Delta Table API
- ✓ MERGE / Upsert Operations
- ✓ Version History & Data Retention
- ✓ Delta Transaction Log

Ch 18: PySpark: Widgets

- ✓ PySpark Parameters
- ✓ Text Widgets
- ✓ User Parameters
- ✓ Manual Executions
- ✓ Automations
- ✓ UI & JSON For Widgets

Ch 19: Lake Flow Jobs

- ✓ Workflows & CRON
- ✓ Job Compute, Running Tasks
- ✓ Python Script Tasks
- ✓ Parameters into Notebook Tasks
- ✓ Parameters into Python Script Tasks
- ✓ Concurrent Executions, Dependencies
- ✓ Branching Control

Ch 20: PySpark: Auto Loader

- ✓ Cloud Files Architecture
- ✓ Checkpoint Configurations
- ✓ Schema Location
- ✓ Checkpoint Location
- ✓ Data Stream
- ✓ Schema Evaluation Modes
- ✓ Incremental File Ingestion
- ✓ Rescued Data Column

Ch 21: LakeFlow Declarative Pipelines

- ✓ SDP: Spark Declarative Pipelines
- ✓ Delta LIVE Tables
- ✓ Streaming Data Loads
- ✓ Bronze, Silver, Gold Data
- ✓ Materialized Views
- ✓ Pipeline Clusters
- ✓ Data Quality Checks

Ch 22: Databricks Optimizations

- ✓ Lazy Evaluation
- ✓ Explain Plan
- ✓ Caching, Data Shuffling

- ✓ Broadcast Joins
- ✓ Partitions, Data Skew
- ✓ Liquid Clustering
- ✓ VACUUM
- ✓ OPTIMIZE, Z Ordering

Ch 23: Databricks Security, AI

- ✓ ACL: Access Control List
- ✓ Workspace Access Control
- ✓ Catalog Security
- ✓ Schema, Volume Security
- ✓ Table Security
- ✓ Column Security

Ch 24: Databricks with Power BI

- ✓ Workspace Settings
- ✓ Access Keys (Tokens)
- ✓ Server Host
- ✓ HTTP Path
- ✓ Spark Connectors
- ✓ Databricks Connectors

Ch 25: Genie AI

- ✓ Genie AI Concepts
- ✓ Unity Catalog
- ✓ AI Components in Databricks
- ✓ Debugging Controls
- ✓ Using AI for Notebook Design

Ch 26: GitHub & Asset Bundle

- ✓ GitHub Concepts
- ✓ GIT: Main, Branches
- ✓ Asset Bundle
- ✓ Integrating GIT with Asset Bundle
- ✓ Process Integration

Ch 27: Apache Airflow

- ✓ Apache Airflow Concepts
- ✓ Airflow Operators & DAG
- ✓ Python Scripts For Airflow
- ✓ DatabricksRunNowOperator
- ✓ DatabricksSubmitRunOperator
- ✓ Airflow Jobs

Part 2: Azure Fundamentals, ADLS & IAM

Ch 1: Azure Fundamentals

- ✓ Cloud Introduction, Azure

- ✓ Cloud Implementations
- ✓ Azure Account, Subscription
- ✓ Azure ETL & DWH Resources
- ✓ Azure Storage, IoT Resources

Ch 2: Azure Storage & ADLS

- ✓ Azure Storage Account
- ✓ Azure Data Lake Storage
- ✓ Azure BLOB Containers
- ✓ Blob File Uploads
- ✓ Azure Tables

Ch 3: Azure Storage Security

- ✓ Microsoft Entra ID
- ✓ RBAC, IAM
- ✓ Access Keys, SAS Keys
- ✓ ACL (Access Control List)
- ✓ Connection Strings

Ch 4: Azure Stream Analytics

- ✓ Azure IoT Hubs
- ✓ Azure Stream Analytics
- ✓ LIVE Data Ingestions
- ✓ SAQL Queries
- ✓ Stream Analytics Jobs
- ✓ Handling JSON Data

Ch 5: Azure Key Vaults

- ✓ Azure Key Vaults
- ✓ Azure Keys & Secrets
- ✓ Access Policies
- ✓ Secret Management
- ✓ Managed Identity

Ch 6: Azure Logic Apps

- ✓ Azure Logic Apps
- ✓ Logic Apps & Automations
- ✓ Azure Events
- ✓ Azure Triggers & Signals
- ✓ ADLS with Logic Apps

Part 3: Azure Data Factory & Synapse

Ch 1: Azure Fundamentals

- ✓ Cloud Introduction, Azure
- ✓ Cloud Implementations
- ✓ Azure Account, Subscription

- ✓ Azure ETL & DWH Resources
- ✓ Azure Storage, IoT Resources

Ch 2: Azure Deployments, Azure SQL

- ✓ Azure SQL Server Deployment
- ✓ Azure SQL DB Deployment
- ✓ Azure SQL Database (OLTP)
- ✓ Azure Firewall Rules
- ✓ Connections from SSMS Tool

Ch 3: Azure SQL DB Migrations

- ✓ Azure Storage Account
- ✓ On-Premise SQL DB, bacpac
- ✓ Azure SQL DB Migration
- ✓ SQL Server Imports from BLOB
- ✓ Migration Verifications

Ch 4: Azure Synapse (DWH)

- ✓ Synapse Pool Architecture
- ✓ Control Node, Compute Node
- ✓ DMS (Data Movement Service)
- ✓ Azure DWH Tables: Partitions
- ✓ Distributions & MAXDOP

Ch 5: Azure Data Factory (ADF)

- ✓ Need for ADF & Pipelines
- ✓ Data Orchestration with IR
- ✓ Integration Runtime (IR) Engine
- ✓ Linked Services, Datasets
- ✓ Pipelines: Copy Data Activity
- ✓ Data Flow Activity with IR

Ch 6: Azure SQL DB Loads

- ✓ ADF: Author, Azure SQL DB Reads
- ✓ Azure SQL Pool Writes
- ✓ Synapse Analytics with IR
- ✓ Pipeline Design, Validation
- ✓ Pipeline Runs, Monitoring

Ch 7: Azure Blob Data Loads

- ✓ ADF Author & Pipeline Runs
- ✓ Azure BLOB Storage Access
- ✓ Storage Containers in ADF
- ✓ Pipeline Validation, Schedules

Ch 8: File Incremental Loads

- ✓ File Incremental Loads
- ✓ Storage Account, Data Lake
- ✓ Binary Copy, Schema Drift
- ✓ Staging Concept in ADF
- ✓ Initial, Incremental Loads
- ✓ Schema & Data Changes

Ch 9: Table Incremental Loads

- ✓ Implement SCD with ADF
- ✓ Self Hosted IR: Realtime Use
- ✓ On-premise Data: Incr Loads
- ✓ Copy Method: Upsert, Keys
- ✓ Staging & ADF Optimizations
- ✓ Pipeline Logging

Ch 10: ADF Data Flow - 1

- ✓ Creating Data Flow Items
- ✓ Using Multiple Sinks
- ✓ Conditional Split Transformation
- ✓ Select, Sort, Union, Loops
- ✓ ADF Debug Options

Ch 11: ADF Data Flow - 2

- ✓ Working with Multiple Tables
- ✓ Join Transform, Broadcast
- ✓ Surrogate Keys, Derived Cols
- ✓ ETL Loads Dates, Sink Options
- ✓ Aggregated Data Loads

Ch 12: ADF Data Flow - 3

- ✓ Pivot Transformation
- ✓ Group By & Pivot Keys
- ✓ Column Pattern, Deduplicate
- ✓ Lookup, Cached Lookup
- ✓ Tuing Transformations
- ✓ Tuning Data Flow, Spark

Ch 13: ADF Data Flow - 4

- ✓ Get Metadata
- ✓ IF & Lookup Transformation
- ✓ Cache Lookup
- ✓ Data Validations
- ✓ Lookup Versus Joins

Ch 14: ADF Optimizations

- ✓ Synapse SQL Pool Partitions
- ✓ ADF Partitions

- ✓ Broadcast Options
- ✓ Staging, Logging
- ✓ DIU, DOCP
- ✓ Spar Cluster Optimizations

Ch 15: ADF Parameters, Security

- ✓ Linked Service Parameters
- ✓ Creating Logins & Users
- ✓ Schemas, ETL Permissions
- ✓ Logins Parameters in ADF
- ✓ Dynamic Linked Services

Ch 16: SCD & ETL with Control Tables

- ✓ ADF Templates in Realtime
- ✓ Incremental Loads (SCD)
- ✓ Control Tables, Watermarks
- ✓ Lookup Activity, Delta Queries
- ✓ SP Activity & Parameters
- ✓ Pipeline Parameters, SPs

Ch 17: ADF Metrics, Alerts

- ✓ Azure Insights
- ✓ Azure Metrics for ADF
- ✓ Azure Metrics for Synapse
- ✓ Alerts and Notifications
- ✓ Action Groups, Tuning Options

Ch 18: Synapse Analytics

- ✓ Azure Synapse Analytics
- ✓ Synapse Deployments
- ✓ Synapse Configurations
- ✓ ADLS Containers
- ✓ Workspace Server Setup
- ✓ Synapse Studio (GUI)

Ch 19: Synapse: Dedicated SQL Pools

- ✓ Creating Dedicated SQL Pools
- ✓ BLOB Data Imports
- ✓ TSQL Queries, Data Imports
- ✓ Big Data Analytics

Ch 20: Synapse: Serverless Pools

- ✓ Serverless Pools, TSQL
- ✓ Serverless Architecture
- ✓ OPENROWSET Operations
- ✓ BULK Copy Scripts
- ✓ Big Data Analytics

Ch 21: ADF with DevOps & CI/CD

- ✓ Git repositories and branching
- ✓ ADF Git integration
- ✓ Development / Test / Production environments
- ✓ Parameterized deployments
- ✓ Production release workflow

Ch 22: Azure Databricks

- ✓ Azure Databricks Deployments
- ✓ Azure Databricks Regions
- ✓ Classic Deployments
- ✓ Access connector for Databricks

Ch 23: Azure Databricks with ADLS

- ✓ Creating IAM Users
- ✓ ADLS Security for Databricks
- ✓ Creating Service Principals
- ✓ Enterprise Applications
- ✓ Client ID, Secret ID
- ✓ External Tables (Delta)

Ch 24: Azure Databricks with ADF

- ✓ Azure Databricks Connections in ADF
- ✓ Calling Notebooks in ADF
- ✓ ADF Versus Databricks
- ✓ ADF With Databricks
- ✓ End to End ETL Strategies

Ch 25: Fabric Concepts

- ✓ Fabric Architecture
- ✓ OneLake
- ✓ Lakehouse
- ✓ Warehouse
- ✓ Data Factory
- ✓ Fabric Pipelines
- ✓ Dataflow Gen2

Ch 26: Fabric Migrations

- ✓ Azure → Fabric migration scenarios
- ✓ ADF → Fabric Data Factory
- ✓ Synapse → Fabric
- ✓ ADLS → OneLake

Part 4: Real-Time Projects for Data Engineering

Real-Time Project 1: Online Travel Data Engineering Platform

Project Objective:

Build an end-to-end Azure Data Engineering solution to process, transform, and analyze Online Travel business data from multiple sources.

Skills Gained:

- ✓ Data Ingestion & ETL Development
- ✓ Azure Data Factory Pipelines
- ✓ Data Orchestration (End to End)
- ✓ Data Lake Architecture, RBAC
- ✓ Real-Time Industry Experience
- ✓ Azure IoT, Stream Analytics
- ✓ Azure Databricks with Data Factory

Components For Project

- ✓ ADF Pipelines
- ✓ Databricks Notebooks
- ✓ Synapse Analytics
- ✓ Apache Spark Schemas
- ✓ Monitoring & Alerts
- ✓ CI/CD Deployment
- ✓ End to End Integrations
- ✓ IAM & Managed Identity

Real-Time Project 2: Retail Platform

Retail Sales Analytics Platform using Databricks (Medallion Architecture)

Project Overview

Students will build a production-style data platform using Lakehouse Architecture (Bronze, Silver, and Gold), implementing modern ETL practices, data quality validation, incremental processing, orchestration, optimization, and reporting.

Business Scenario

A multinational retail company receives daily data from multiple operational systems. The company wants to build a centralized analytics platform to:

- ✓ Consolidate data from different business domains
- ✓ Improve data quality and consistency
- ✓ Track sales performance across regions
- ✓ Analyse customer purchasing behaviour
- ✓ Monitor inventory levels
- ✓ Generate business KPIs for decision-makers
- ✓ Deliver Power BI dashboards with near real-time insights

Technologies Covered

- Apache Spark
- PySpark

- Spark SQL
- Delta Lake
- Unity Catalog
- Databricks Workflows
- Git Integration
- AirFlow

Project Workflow

Sources → ADLS → Bronze → Silver → Gold → Databricks Workflows → Power BI

Part 5: Data Engineering Certifications

Databricks Data Engineer Associate Exam

- ✓ Exam Details
- ✓ Exam Dumps
- ✓ Scenario-Based Questions
- ✓ Practice Assessments

Microsoft Databricks Exam (DP-750)

- ✓ Exam Details
- ✓ Exam Dumps
- ✓ Scenario-Based Questions
- ✓ Practice Assessments

Resume Highlights

After completing this module, you can confidently showcase experience in:

- ✓ PySpark & Spark SQL
- ✓ Delta Lake
- ✓ Medallion Architecture
- ✓ ETL Pipeline Development
- ✓ Data Quality & Validation
- ✓ Unity Catalog
- ✓ Automations, Optimizations

Module 3: Power BI

Ch 1: Power BI Intro, Installation

- ✓ Power BI & Data Analysis
- ✓ Power BI Eco System
- ✓ Power BI Design Tools
- ✓ Power BI Installation

Ch 2: Report Design Concepts

- ✓ Basic Report Design (PBIX)
- ✓ Data Points, Spotlight
- ✓ Visual Interactions & Edits
- ✓ Focus Mode, PDF Exports

Ch 3: Grouping, Hierarchies

- ✓ Creating Groups: Lists

- ✓ Creating Groups: Bins
- ✓ Hierarchies & Drill-Downs
- ✓ Drill Up, Conditional DrillDown

Ch 4: Slicer & Visual Sync

- ✓ Slicer Visual in Power BI
- ✓ Slicer: Format Options
- ✓ Single Select, Multi Select
- ✓ Slicer: Select All On / Off
- ✓ Visual Sync with Slicers

Ch 5: Filters & Drill Thru

- ✓ Power BI Filters
- ✓ Basic, Top & Advanced
- ✓ Visual Filters, Page Filters
- ✓ Report Level Filters, Clear Filter
- ✓ Drill Thru Filters & Usage

Ch 6: Bookmarks, Buttons

- ✓ Power BI Bookmarks
- ✓ Images: Actions, Bookmarks
- ✓ Buttons: Actions, Bookmarks
- ✓ Page to Page Navigations
- ✓ Score Cards, Master Pages

Ch 7: SQL DB Access & Big Data

- ✓ SQL DB Access, Queries
- ✓ Storage Modes: Direct Query
- ✓ Formatting & Date Time
- ✓ Storage Modes in Power BI
- ✓ Data Modeling & Formatting

Ch 8: Power BI Visualizations

- ✓ Charts, Bars, Lines, Area
- ✓ Tree Maps & Axis Items
- ✓ Funnel, Card, Multi-Row Card
- ✓ Pie Charts & Waterfall
- ✓ Scatter Chart, Play Axis
- ✓ Infographics, Classifications

Ch 9: Power Query Transformations – 1

- ✓ Power Query (Mashup)
- ✓ ETL Transformations in PBI
- ✓ Table Combine Options
- ✓ Merge, Union All Options
- ✓ Missing Values, Duplicate Records
- ✓ Wrong Data Types, Outliers
- ✓ Close, Apply & Visualize

Ch 10: Power Query Transformations – 2

- ✓ Group By Transformation
- ✓ Aggregate, Pivot Operation
- ✓ Reverse Rows, Count Rows
- ✓ Data Cleaning, Null Handling
- ✓ Data Type Detection, Change
- ✓ Rename, Replace, Move
- ✓ Fill Up, Fill Down

Ch 11: Power Query Transformations – 3

- ✓ String / Text Transformations
- ✓ Split, Merge, Extract, Format
- ✓ Numeric and Date Time
- ✓ Add Column & Expressions
- ✓ Column From Examples

Ch 12: Power Query Transformations – 4

- ✓ Parameters in Power Query
- ✓ Static Parameters, Defaults
- ✓ Dynamic Dropdowns, Lists
- ✓ Linking with Table Queries
- ✓ Step Edits, Type Conversions

Ch 13: Power BI Cloud & Fabric

- ✓ Power BI Cloud, Microsoft Fabric
- ✓ Microsoft Fabric Concepts
- ✓ Fabric One Lake (DWH, LH, etc.)
- ✓ Microsoft Fabric Workspace
- ✓ Report Uploads (PBIX)
- ✓ Report Edits, Semantic Models

Ch 14: Power BI Cloud Dashboards

- ✓ Power BI Dashboards
- ✓ Dashboard Creation, Usage
- ✓ Pin Visuals, Pin LIVE Pages
- ✓ Add Image, Video Tiles
- ✓ Q&A & Pin Tiles

Ch 15: Power BI Cloud Operations

- ✓ Report Shares, Alerts
- ✓ Subscriptions, Exploration
- ✓ Downloads & Edits
- ✓ Report Cloning in Cloud
- ✓ QR Codes, Web Publish
- ✓ Lineage & Metrics

Ch 16: Power BI Cloud Gateways

- ✓ Data Gateways, Data Refresh
- ✓ Install, Configure Gateways
- ✓ Data Refresh & Scheduling
- ✓ Gateway Optimizations
- ✓ Incremental Refresh

Ch 17: Power BI Cloud Apps

- ✓ Power BI Apps: Creation
- ✓ App Sections & Content
- ✓ Audience & App Security
- ✓ App Updates, Favorites
- ✓ App URL, End User Access

Ch 18: Power BI Report Server, RDL

- ✓ Power BI Report Server
- ✓ RS Config Tool Options
- ✓ Report Database, TempDB
- ✓ Web Service & Server URL
- ✓ Report Builder Tool
- ✓ Paginated Report (RDL)

Ch 19: DAX Concepts & Calculations

- ✓ DAX Concepts: Intro & Realtime Need
- ✓ DAX Columns: Creation, Use
- ✓ DAX Measures: Creation, Use
- ✓ DAX Functions: IIF, ISBLANK
- ✓ SUM, CALCULATE Functions

Ch 20: DAX Quick Measures

- ✓ Quick Measures in Power BI
- ✓ Running Totals
- ✓ Star Rating Calculations
- ✓ DAX Measures in Data View
- ✓ DAX in Cloud Reports

Ch 21: Data Modelling

- ✓ Dimensions Tables
- ✓ Fact Tables & DAX Measures
- ✓ Data Models & DAX Joins
- ✓ Star & Snowflake Schemas
- ✓ Many-to-Many Relationships
- ✓ Calculation Groups

Ch 22: DAX Joins, Variables

- ✓ CALCULATEX & Variables
- ✓ COUNT, COUNTA, etc..
- ✓ SUM, SUMX, etc..
- ✓ SELECTED MEMBER

- ✓ Filter Context, RETURN

Ch 23: DAX Models & Calculations

- ✓ VAR, SWITCH, SUMMARIZE
- ✓ TREATAS, USERELATIONSHIP
- ✓ CROSSFILTER, GENERATE
- ✓ RANKX, TOPN, WINDOW
- ✓ OFFSET, INDEX

Ch 24: DAX Time Intelligence

- ✓ Date Table Generation
- ✓ Time Intelligence with DAX
- ✓ PARALLELPERIOD, DATE
- ✓ CALENDAR, Total Functions
- ✓ YTD, QTD, MTD with DAX

Ch 25: DAX – Row Level Security

- ✓ RLS: Row Level Security
- ✓ Data Modelling & Roles
- ✓ Add Cloud Users & KPIs
- ✓ CoPilot with DAX

Ch 26: DAX – Analytical Reports

- ✓ DAX with Excel
- ✓ Analytical Reports
- ✓ Virtual Cube Concepts
- ✓ Cross Filter Reporting
- ✓ Alerts, Data Activator

Ch 27: PL 300 Exam Guidance

- ✓ PL 300 Exam Guidance
- ✓ Exam Samples
- ✓ Exam Scenarios

Realtime Project 3: Enterprise Healthcare Data & Analytics Platform

Project Objective

Design and implement a modern Healthcare Data Platform using Power BI Analytics and Reporting services to process patient, hospital, clinical, and operational data for reporting, analytics, and decision-making.

Technologies Used

- ✓ Azure SQL Database
- ✓ Azure Data Lake
- ✓ Azure Synapse
- ✓ Databricks API
- ✓ Power BI Service
- ✓ Power Pivot
- ✓ Co-Pilot

Learning Outcomes

After completing this project, you can confidently showcase experience in:

- Power BI Reporting
- Azure Synapse with Power BI
- Spark Schemas with Power BI
- End-to-End Azure Data Engineering Solutions

Project Flow

Source → Data Lake → Transformation → Warehouse/Lakehouse → Model → Power BI

Module 4: Interview & Career Preparation

- 📁 End-to-End Real-Time Projects & Solutions
- 🏢 Medallion Architecture Implementation
- 📊 100% Hands-on Practical Sessions
- 🔗 PySpark & Spark SQL from Basics to Advanced
- 🎯 Interview Preparation
- 📅 Assignments & Practice Labs
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- 👉 Learn Like You're Working in a Real Company

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