

AZURE DATA ENGINEERING

Master Modern Data Engineering with Azure & Databricks

Azure | databricks | Microsoft Fabric | Power BI

COURSE DETAILS

MODULE 1 MSSQL & TSQL, Tuning

MODULE 2 AZURE DATA ENGINEERING

- TOPIC 1: Azure Data Fundamentals
- TOPIC 2: Azure Data Factory, Synapse
- TOPIC 3: Azure Databricks with Spark, Spark SQL, Python, PySpark
- TOPIC 4: Azure Data Lake, IoT
- TOPIC 5: Azure Fabric & Migrations

MODULE 3 POWER BI WITH AI, COPILOT

APPLICABLE CERTIFICATIONS


- Microsoft **FUNDAMENTALS** DP 900 Exam
- Databricks **DATA ENGINEER ASSOCIATE** Exam

REALTIME PROJECTS

PROJECT 1 ADF, Synapse & ADLS, IoT

PROJECT 2 Databricks with Python, Spark, PySpark

TRAINER



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TRAINING HIGHLIGHTS

- ✓ Step-by-step Classes
- ✓ Projects For Resume
- ✓ 100% Interactive
- ✓ Job Assistance, Mocks

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Detailed Course Content

Module 1: SQL Server TSQL (MS SQL) Queries

Ch 1: SQL Database Job Roles

- ✓ Introduction to Data
- ✓ Database Intro, Types
- ✓ OLTP, DWH, OLAP
- ✓ DBMS Concepts
- ✓ Database Job Roles
- ✓ Data Engineer Job Roles

Ch 2: Database Intro & Installations

- ✓ SQL Server Installations
- ✓ Instance Concepts
- ✓ Authentication Types
- ✓ Authentication Modes
- ✓ Collation & File Stream
- ✓ SQL Server 2025 Installations
- ✓ SSMS Tool Installation
- ✓ Server Connections, Authentications

Ch 3: SQL Basics V1 (Commands)

- ✓ Creating Databases (GUI)
- ✓ Creating Tables, Columns (GUI)
- ✓ 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, Add, modify, etc..
- ✓ DML: Insert, Update, Delete, select into, etc..
- ✓ DQL: Fetch, Insert... Select, etc..
- ✓ SQL Operations: LIKE, BETWEEN, IN, etc..
- ✓ Special Operators

Ch 5: Server Architecture

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

Ch 6: Excel Data Imports

- ✓ Data Imports with Excel

- ✓ SQL Native Client
- ✓ Order By: Asc, Desc
- ✓ Order By with WHERE
- ✓ TOP & OFFSET
- ✓ UNION, UNION ALL

Ch 7: Schemas & Batches

- ✓ Schemas: Creation, Usage
- ✓ Schemas & Table Grouping
- ✓ Real-world Banking Database
- ✓ 2 Part, 3 Part & 4 Part Naming
- ✓ Batch Concept & "Go" Command

Ch 8: Constraints, Keys & RDBMS

- ✓ Null, Not Null Constraints
- ✓ Unique Key Constraint
- ✓ Primary Key Constraint
- ✓ Foreign Key & References
- ✓ Default Constraint & Usage
- ✓ DB Diagrams & ER Models

Ch 9: Indexes Basics, Tuning

- ✓ Indexes & Tuning
- ✓ Clustered Index, Primary Key
- ✓ Non Clustered Index & Unique
- ✓ Creating Indexes Manually
- ✓ Composite Keys, Query Optimizer
- ✓ Composite Indexes & Usage

Ch 10: Joins & Queries

- ✓ Joins: Table Comparisons
- ✓ Inner Joins & Matching Data
- ✓ Outer Joins: LEFT, RIGHT
- ✓ Full Outer Joins & Aliases
- ✓ Cross Join & Table Combination
- ✓ Joining more than 2 tables

Ch 11: Views & RLS

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

Ch 12: Stored Procedures - 1

- ✓ Stored Procedures: Realtime Use
- ✓ Parameters Concept with SPs
- ✓ Procedures with SELECT
- ✓ System Stored Procedures
- ✓ Metadata Access with SPs
- ✓ SP Recompilations
- ✓ Stored Procedures, Tuning

Ch 13: Stored Procedures - 2

- ✓ Merge Statement
- ✓ Upsert Operations with Merge
- ✓ Merge with OLTP & DWH
- ✓ Matched and Not Matched
- ✓ Merge Statement inside SPs

Ch 14: Transactions & ACID

- ✓ Transaction Concepts in OLTP
- ✓ Auto Commit Transaction
- ✓ Explicit Transactions
- ✓ COMMIT, ROLLBACK
- ✓ Checkpoint & Logging
- ✓ Lock Hints & Query Blocking
- ✓ READPAST, LOCKHINT

Ch 15: User Defined Functions

- ✓ Using Functions in MSSQL
- ✓ Scalar Functions in Real-world
- ✓ Inline & Multiline Functions
- ✓ Parameterized Queries
- ✓ Date & Time Functions
- ✓ String Functions & Queries
- ✓ Aggregated Functions & Usage

Ch 16: Window Functions, CASE

- ✓ IIF Function and Usage
- ✓ CASE Statement Usage
- ✓ Window Functions (Rank)
- ✓ Row_Number()
- ✓ Rank(), DenseRank()
- ✓ Partition By & Order By

Ch 17: Triggers & Automations

- ✓ Need for Triggers in Real-world
- ✓ DDL & DML Triggers
- ✓ For / After Triggers
- ✓ Instead Of Triggers
- ✓ Memory Tables with Triggers

- ✓ Disabling DMLs & Triggers

Ch 18: Group By Queries

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

Ch 19: Joins with Group By

- ✓ Joins with Group By
- ✓ 3 Table, 4 Table Joins
- ✓ Join Queries with Aliases
- ✓ Join Queries & WHERE
- ✓ Join Queries & Group By
- ✓ Joins with Sub Queries
- ✓ Query Execution Order

Ch 20: Sub Queries

- ✓ Sub Queries Concept
- ✓ Sub Queries & Aggregations
- ✓ Joins with Sub Queries
- ✓ Sub Queries with Aliases
- ✓ Sub Queries, Joins, Where
- ✓ Correlated Queries

Ch 21: Data Types & Variables

- ✓ Integer Data Types
- ✓ Character, MAX Data Types
- ✓ Decimal & Money Data Types
- ✓ Boolean & Binary Data Types
- ✓ Date and Time Data Types
- ✓ SQL_Variant Type
- ✓ Variables in SQL

Ch 22: Cursors & Fetch

- ✓ Cursors: Realtime Usage
- ✓ Local & Global Cursors
- ✓ Scroll & Forward Only Cursors
- ✓ Static & Dynamic Cursors
- ✓ Fetch, Absolute Cursors

Ch 23: Normal Forms & Self Joins

- ✓ Normal Forms: 1 NF, 2 NF
- ✓ 3 NF, BCNF and 4 NF

- ✓ Adding PK to Tables
- ✓ Adding FK to Tables
- ✓ Cascading Keys
- ✓ Self Referencing Keys
- ✓ Database Diagrams

Ch 24: CTEs & Tuning

- ✓ Common Table Expression
- ✓ Creating and Using CTEs
- ✓ CTEs, In-Memory Processing
- ✓ Using CTEs for DML Operations
- ✓ Using CTEs for Tuning
- ✓ CTEs: Duplicate Row Deletion

Key Take-Aways:

- ✓ Case Study 1: Medicare: Tasks, Solutions
- ✓ Case Study 2: ECommerce: Task, Solutions
- ✓ Chapter Wise Assignments: Solutions
- ✓ Dailly Assignments: Review (Feedback)

Module 2: Azure Data Engineer

Part 1: Fundamentals, ADF & Synapse

Ch 1: Azure Fundamentals

- ✓ Cloud Introduction
- ✓ Azure Concepts
- ✓ Cloud Implementations: IaaS, PaaS
- ✓ Azure ETL & DWH Concepts
- ✓ SaaS & Azure Cloud Concepts
- ✓ Azure Resources & Groups
- ✓ Storage, ETL, IoT Resources

Ch 2: Azure Deployments, Azure SQL

- ✓ Azure SQL Server, SQL DB
- ✓ Azure SQL Database (OLTP)
- ✓ Azure SQL Pool (DWH)
- ✓ Connections from SSMS Tool
- ✓ Source Data Configurations

Ch 3: Azure Synapse (DWH)

- ✓ Synapse Pool Architecture
- ✓ Control Node, Compute Node
- ✓ DMS (Data Movement Service)
- ✓ Connection Strings
- ✓ Pause / Resume SQL Pool

- ✓ Scale Up / Scale Down

Ch 4: Azure SQL Pool Operations (DWH)

- ✓ Creating Tables with TSQL
- ✓ Partitioned Tables
- ✓ Distributions
- ✓ RoundRobin, Hash, Replicate
- ✓ DOP Concept
- ✓ Big Data Loads with TSQL
- ✓ Important DMFs & DMVs

Ch 5: Azure Storage & ADLS

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

Ch 6: Azure SQL DB Migrations

- ✓ On-Premise SQL DB bacpac
- ✓ Azure SQL Deployment
- ✓ Azure Storage from SSMS
- ✓ Azure SQL DB Migration
- ✓ Migration Verifications
- ✓ Testing Migrations in SQL

Ch 7: Azure Data Factory (ADF)

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

Ch 8: Azure SQL DB Loads

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

Ch 9: Pipeline Settings

- ✓ ADF Pipeline Settings
- ✓ Staging: Advantages
- ✓ Reliable Logging
- ✓ Best Effort Logging
- ✓ DIU & DOCP with IR
- ✓ Compressions, Health Check

Ch 10: 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 11: 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 Runs, Activity IDs

Ch 12: ADF: Data Flow - 1

- ✓ Data Flow Concepts
- ✓ Data Flow Prototypes
- ✓ Data Flow Workflow
- ✓ Data Flow Transformations
- ✓ Spark Clusters
- ✓ Optimized Clusters, Preview
- ✓ ADF Debug Options

Ch 13: ADF Data Flow - 2

- ✓ Creating Data Flow Items
- ✓ Using Multiple Sinks
- ✓ Conditional Split Transformation
- ✓ SELECT Transformation
- ✓ Sort, Union Transformations
- ✓ Pipelines with Data Flow

Ch 14: ADF Data Flow - 3

- ✓ Working with Multiple Tables
- ✓ Join Transform, Broadcast

- ✓ Row Filters, Column Filters
- ✓ Surrogate Keys, Derived Cols
- ✓ ETL Loads Dates, Sink Options
- ✓ Aggregated Data Loads

Ch 15: ADF Data Flow - 4

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

Ch 16: ADF Data Flow - 5

- ✓ Lookup Transformation
- ✓ Cache Lookup
- ✓ Inline Datasets
- ✓ Data Validations
- ✓ Lookup Versus Joins

Ch 17: ADF Metrics, Alerts

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

Ch 18: ADF with Azure Functions

- ✓ Azure Functions
- ✓ Function Activity in ADF
- ✓ Linked Services
- ✓ Pipeline Debug
- ✓ ADF Activity Controls

Ch 19: ADF Optimizations

- ✓ Synapse SQL Pool Partitions
- ✓ ADF Partitions
- ✓ Broadcast Options
- ✓ Staging, Logging
- ✓ DIU, DOCP
- ✓ Spar Cluster Optimizations

Ch 20: ADF Parameters, Security

- ✓ Linked Service Parameters
- ✓ Creating Logins
- ✓ Users and ETL Permissions
- ✓ Parameterize Logins
- ✓ Parameterize Users
- ✓ Dynamic Linked Services

Ch 21: SCD & ETL with Control Tables - 1

- ✓ ADF Templates in Realtime
- ✓ Implementing ADF SCD
- ✓ Table Incremental Loads
- ✓ Creating Control Tables
- ✓ Creating Watermark Columns
- ✓ Creating ETL Stored Procedures

Ch 22: SCD & ETL with Control Tables - 2

- ✓ ADF Lookup Activity
- ✓ Delta Data Expressions
- ✓ SP Activity & Parameters
- ✓ Control Tables, Watermarks
- ✓ Pipeline Parameters, SPs
- ✓ Dynamic Data Sets, SCD

Ch 23: Synapse Analytics

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

Ch 24: Synapse: Dedicated SQL Pools

- ✓ Dedicated SQL Pools
- ✓ BLOB Data Imports
- ✓ Data Source Creations
- ✓ TSQL Queries
- ✓ Big Data Analytics

Ch 25: Synapse: Serverless Pools

- ✓ Serverless Pools
- ✓ Serverless Architecture
- ✓ Serverless Vs Dedicated Pools
- ✓ BLOB Data Imports
- ✓ OPENROWSET Operations

- ✓ Big Data Analytics

Ch 26: Synapse: Apache Spark Pools

- ✓ Apache Spark Pools
- ✓ Spark Cluster Concepts
- ✓ Nodes and Executors
- ✓ PySpark Notebooks
- ✓ Notebook Operations
- ✓ BLOB Data Imports
- ✓ Big Data Analytics
- ✓ Pipeline Integrations

Ch 27: CDC in ADF

- ✓ CDC: Change Data Capture
- ✓ Using CDC in ADF
- ✓ CDC Source Configurations
- ✓ Incremental Loads with CDC
- ✓ New Rows, Net Changes
- ✓ CDC Advantages & Performance

Ch 28: CI CD with GitHub

- ✓ Creating Github Account
- ✓ GIT: Main, Branches
- ✓ Connecting with ADF
- ✓ Version Changes
- ✓ Builds and Deployments
- ✓ CI-CD Integrations

Project 1 @ ADF, ADLS, Data Governance

- ✓ Project Requirement
- ✓ Data Sheet
- ✓ Data Models
- ✓ Solution
- ✓ Project FAQs

Part 2: Databricks with Unity Catalog

Ch 1: Databricks Introduction

- ✓ Cloud ETL, DWH
- ✓ Cloud Computing
- ✓ Databricks Concepts
- ✓ Big Data in Cloud

Ch 2: Databricks Architecture

- ✓ Unity Catalog, Volume
- ✓ Spark Clusters
- ✓ Apache Spark and Databricks
- ✓ Apache Spark Ecosystem
- ✓ Compute Operations
- ✓ Hadoop, MapReduce, Apache Spark

Ch 3: Unity Catalog

- ✓ Unity Catalog Concepts
- ✓ Workspace Objects
- ✓ Databricks Notebooks
- ✓ Databricks Workspace UI
- ✓ Organizing Workspace Objects
- ✓ Creating Volumes
- ✓ Spark Table Creations
- ✓ UI : Limitations

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 Store
- ✓ 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
- ✓ Value Types
- ✓ 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
- ✓ List Items, Indexes
- ✓ Tables Versus Dictionaries

Ch 13: Python: Modules & Dataframes

- ✓ Python Modules
- ✓ Pandas
- ✓ NumPy
- ✓ Dataframe Concepts
- ✓ Handling Nulls
- ✓ Data Cleansing Concepts
- ✓ Pandas Series, arrays
- ✓ Indexes, Indexed Lists

Ch 14: PySpark Concepts

- ✓ Constructing Dataframes
- ✓ Single List Dataframes
- ✓ Multi List Dataframes
- ✓ Pandas Dataframes
- ✓ Contact & Union
- ✓ Merge
- ✓ Join Options with 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
- ✓ Dataframes, Temp Views
- ✓ Aggregated Data Loads
- ✓ Gold Data Consumption

Ch 15: Delta Lake

- ✓ Databricks DeltaLake
- ✓ Schema Evolution

- ✓ Azure SQL DB Connections
- ✓ Dataframes, Temp Views
- ✓ Delta Table API
- ✓ Deleting Records
- ✓ Updating Records
- ✓ Merging Records
- ✓ Old History Retention
- ✓ Delta Transaction Log

Ch 16: PySpark: Widgets

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

Ch 17: 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 with the If-Else Task

Ch 18: Pyspark: Auto Loader - 1

- ✓ AutoLoader Concept
- ✓ Cloudfiles Architecture
- ✓ Checkpoint Configurations
- ✓ Creating Directories
- ✓ Reading Databricks Cloud Sources
- ✓ Initial Loads

Ch 19: PySpark: Auto Loader - 2

- ✓ Reading Streams with Auto Loader
- ✓ Reading a Data Stream
- ✓ Manually Cancel your Data Streams
- ✓ Writing to a Data Stream
- ✓ Schema Evaluation Modes
- ✓ Adding New Columns
- ✓ Workspace Modules

Ch 20: Lake Flow Declarative Pipelines

- ✓ Delta LIVE Tables
- ✓ Data Generator Notebook

- ✓ Pipeline Clusters
- ✓ Databricks CLI
- ✓ Data Quality Checks
- ✓ Streaming Dataset "Simulator"
- ✓ Streaming Live Tables

Ch 21: Databricks Optimizations

- ✓ Lazy Evaluation
- ✓ Explain Plan
- ✓ Caching
- ✓ Data Shuffling
- ✓ Broadcast Joins
- ✓ Partitions
- ✓ Data Skipping
- ✓ Z Ordering
- ✓ Liquid Clustering
- ✓ VACUUM
- ✓ OPTIMIZE

Ch 22: Security Concepts

- ✓ Overview of ACLs
- ✓ Adding a New User to Workspace
- ✓ Workspace Access Control
- ✓ Cluster Access Control
- ✓ Groups & LakeBridge
- ✓ Access Keys (Tokens)

Ch 23: Version Control & GitHub

- ✓ Local Development
- ✓ Runtime Compatibility
- ✓ Git and GitHub Pre-requisites
- ✓ Git and GitHub Basics
- ✓ Linking to GitHub & Databricks
- ✓ Databricks Git Folders
- ✓ Project Code to GitHub
- ✓ Adding Modules to the Project Code
- ✓ Databricks Job Updates, Runs

Ch 24: Azure Databricks

- ✓ Deployment Modes
- ✓ Classic Deployment
- ✓ Azure Databricks Account
- ✓ Azure Databricks Workspace
- ✓ Databricks Compute
- ✓ UBUNTU OS & VNs

- ✓ Photon Acceleration
- ✓ Scaling & Tuning

Project 2 @ Databricks, Spark, PySpark, SDP

- ✓ **Project Requirement**
- ✓ **Data Sheet**
- ✓ **Data Models**
- ✓ **Solution**
- ✓ **Project FAQs**

Part 3: Azure Stream Analytics & Log Apps

Ch 1: Azure Stream Analytics

- ✓ Azure IoT Hubs & Devices
- ✓ APIs with Connection Strings
- ✓ Azure Stream Analytic Jobs
- ✓ Inputs, Outputs, SAQL Query
- ✓ LIVE Feed: JSON, AVRO Files
- ✓ Watermark & LIVE Streams

Ch 2: Azure Key Vaults

- ✓ Azure Encryptions at REST
- ✓ SMK & CMK Encryptions
- ✓ Azure Key Vaults & Keys
- ✓ Key Access Policies
- ✓ Rest, Transit Encryptions
- ✓ Realtime Considerations

Ch 3: Azure Logic Apps

- ✓ Azure Logic Apps
- ✓ Consumption Logic
- ✓ Standard Logic
- ✓ Logic App Connectors
- ✓ Triggers & Parallel Branches
- ✓ Schedules & Automations
- ✓ Data Governance

Ch 4: Data Governance & Purview

- ✓ Microsoft Purview
- ✓ Azure Policy
- ✓ GDPR, HIPAA
- ✓ Azure Management Groups
- ✓ Microsoft Cost Management

Ch 5: Fabric Integrations

- 👉 🧩 Microsoft Fabric Concepts
- 👉 🧩 Fabric One Lake & ETL
- 👉 🧩 Fabric Configurations
- 👉 🧩 Azure Versus Fabric Implementations
- 👉 🧩 Azure to Fabric Migrations

Module 3: Power BI

Ch 1: Power BI Intro, Installation

- ✓ Power BI & Data Analysis
- ✓ Power BI Design Tools
- ✓ Power BI Design Techniques
- ✓ Power BI Hosting Solutions
- ✓ Power BI with Co-Pilot & AI
- ✓ Power BI Installation

Ch 2: Report Design Concepts

- ✓ Basic Report Design (PBIX)
- ✓ Get Data, Canvas (Design)
- ✓ Data View, Data Models
- ✓ Data Points, Spotlight
- ✓ Focus Mode, PDF Exports

Ch 3: Visual Interactions, PBIT

- ✓ Visual Interactions & Edits
- ✓ Limitations with Visual Edits
- ✓ Creating Power BI Templates
- ✓ CSV Exports & PBIT Imports

Ch 4: Grouping, Hierarchies

- ✓ Creating Groups : Lists
- ✓ Creating Groups: Bins
- ✓ List Items & Group Edits
- ✓ Bin Size & Bin Count

Ch 5: 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 6: Hierarchies & Drill-Down

- ✓ Hierarchies: Creation, Use
- ✓ Hierarchies: Advantages
- ✓ Drill Up, Drill Down
- ✓ Conditional Drill Down
- ✓ Filtered Drill Down, Table View

Ch 7: Filters & Drill Thru

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

Ch 8: Bookmarks, Buttons

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

Ch 9: SQL DB Access & Big Data

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

Ch 10: Power BI Visualizations

- ✓ Charts, Bars, Lines, Area
- ✓ TreeMaps & HeatMaps
- ✓ Funnel, Card, Multrow Card
- ✓ PieCharts & Waterfall
- ✓ Scatter Chart, Play Axis
- ✓ Infographics, Classifications

Ch 11: Power Query Introduction

- ✓ Power Query (Mashup)
- ✓ ETL Transformations in PBI
- ✓ Power Query Expressions
- ✓ Table Combine Options
- ✓ Merge, Union All Options
- ✓ Close, Apply & Visualize

Ch 12: Power Query: Table Tfns

- ✓ Table Duplicate, Header Promotion
- ✓ Group By Transformation
- ✓ Aggregate, Pivot Operation
- ✓ Reverse Rows, Count Rows
- ✓ Advanced Power Query Mode

Ch 13: Power Query: Column Tfn

- ✓ Any Column Transformations
- ✓ Data Type Detection, Change
- ✓ Rename, Replace, Move
- ✓ Fill Up, Fill Down
- ✓ Step Edits & Rollbacks

Ch 14: Power Query: Text, Date

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

Ch 15: Power Query: Parameters

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

Ch 16: Power BI Cloud: Publish

- ✓ Power BI Cloud Concepts
- ✓ Workspace Creation, Usage
- ✓ Report Publish Cloud
- ✓ Report Edits in Cloud
- ✓ Semantic Models & Usage

Ch 17: Power BI Cloud Dashboards

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

Ch 18: Power BI Cloud Operations

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

Ch 19: Power BI Cloud Gateways

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

Ch 20: Power BI Cloud Apps

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

Ch 21: Power BI Report Server

- ✓ SQL Server 2025 (Mandatory Installations)
- ✓ Power BI Report Server
- ✓ Report Server Vs Cloud
- ✓ Installation, Configuration
- ✓ RS Config Tool Options
- ✓ Report Database, TempDB
- ✓ Web Service & Server URL

Ch 22: Paginated Reports

- ✓ Report Builder Tool
- ✓ Paginated Report (RDL)
- ✓ Report Expressions (RDL)
- ✓ Tablix, Chart Wizards
- ✓ Fields & Drill-Down
- ✓ RDL Report Publish

Ch 23: DAX Concepts (Basics)

- ✓ DAX Concepts: Intro & Realtime Need
- ✓ DAX Columns: Creation, Use
- ✓ DAX Measures: Creation, Use

- ✓ DAX Functions: IIF, ISBLANK
- ✓ SUM, CALCULATE Functions
- ✓ DAX Cheat Sheet

Ch 24: DAX Quick Measures

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

Ch 25: Data Modelling, DAX

- ✓ Dimensions Tables
- ✓ Fact Tables & DAX Measures
- ✓ Data Models & Relations
- ✓ DAX Expressions
- ✓ Star & Snowflake Schemas
- ✓ DAX Joins & Expressions

Ch 26: DAX Joins, Variables

- ✓ CALCULATEX & Variables
- ✓ COUNT, COUNTA, etc..
- ✓ SUM, SUMX, etc..
- ✓ SELECTED MEMEBER
- ✓ Filter Context, RETRUN
- ✓ Dynamic Report with DAX

Ch 27: DAX Time Intelligence

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

Ch 28: DAX - Row Level Security

- ✓ RLS: Row Level Security
- ✓ Data Modelling & Roles
- ✓ Verify Roles (Testing)
- ✓ Add Cloud Users to Roles
- ✓ Dynamic Row Level Security
- ✓ Testing RLS in Power BI

Ch 29: Analytical Reports

- ✓ Analytical Report Concepts
- ✓ Excel Data Analytics
- ✓ Excel with Power BI Cloud
- ✓ SQL, AVRO, JSON Sources
- ✓ Analyse in Excel (Cloud)
- ✓ Excel Reports to Cloud

Ch 30: Power BI AI, CoPilot

- ✓ AI Components in Power BI
- ✓ CoPilot Practical Uses
- ✓ CoPilot with Desktop
- ✓ CoPilot with Cloud
- ✓ Need for AI Analytics (Fabric)
- ✓ PL 300 Exam (Microsoft Certified Data Analyst) Guidance
- ✓ PL 300 Exam Mocks

Ch 5: Fabric Integrations

- 👉 🏠 Microsoft Fabric Concepts
- 👉 🏠 Fabric One Lake & ETL
- 👉 🏠 Fabric Configurations
- 👉 🏠 Azure Versus Fabric Implementations
- 👉 🏠 Azure to Fabric Migrations

AZURE DATA ENGINEER: TRAINING PLANS			
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