SQL School™

Quality Training Assured

Complete Practical; Real-time Job Oriented Training

Azure Data Factory & Synapse

	PLAN A	PLAN B	PLAN C
Applicable For (Resume Plan)	**Azure Data Factory & Synapse**	**SQL & T-SQL Queries Azure Data Factory & Synapse**	**SQL & T-SQL Queries Azure Data Engineer**
TSQL: Database Basics, T-SQL	X	✓	✓
TSQL : Constraints, Joins, Queries	X	✓	✓
TSQL: Views, Group By, Self Joins	X	✓	✓
TSQL: DB Objects, Queries	X	✓	✓
TSQL: Transactions, Lock Hints	X	✓	✓
ADF: Azure Data Factory	✓	✓	✓
ADF: Data Imports, ETL	✓	✓	✓
ADF: Data Flows, Wrangling	✓	✓	✓
ADF: Transformations, ETL	✓	✓	✓
Synapse: Configuration, Loads	✓	✓	✓
Synapse: ETL with ADF, DWH	✓	✓	✓
Synapse: MPP, DWH, Tuning	✓	✓	✓
Storage: ADLS Gen 2, BLOB	X	X	✓
Storage: Az Tables, Shares, ACL	X	X	✓
Azure Stream Analytics & Jobs	X	X	✓
IoT Hubs and Event Hubs, ETL	X	X	✓
Real-time Data Loads & ETL	X	X	✓
ADB: Azure Data Bricks, Spark	X	X	✓
ADB: Architecture, Data Loads	X	X	✓
ADB: SparkSQL, Jobs, Parameters	X	X	✓
ADB: Delta Tables, PySpark ETL	X	X	✓
End to End Implementation	X	X	✓
DP 203 Exam Guidance	X	X	✓
Total Duration	2.5 Weeks	4.5 Weeks	8 Weeks

Trainer : **Mr. Sai Phanindra T** [17+ Yrs of Real-time Exp]. Profile @ linkedin.com/in/saiphanindra

Module 1: Azure Data Factory [ADF], Synapse

Applicable for All Plans

Chapter 1: Cloud Introduction & Azure Basics

Azure Implementation: IaaS, PaaS, SaaS, Benefits of Azure Cloud Environment, Azure Data Engineer: Job Roles, Azure Storage Components, Azure ETL & Streaming Components, Need for Azure Data Factory (ADF), Need for Azure Synapse Analytics, Azure Resources and Resource Types, Resource Groups in Azure Portal, Azure SQL Server [Logical Server], Firewall Rules and Azure Services, Connections with SSMS & ADS Tools, DB Migration: OnPremise to Azure, Schema Migration & Data Migration;

Chapter 2: Synapse SQL Pools

Dedicated SQL Pools in Azure; Enterprise Data Warehouse with Synapse; DWU: Data Warehouse Units, Resources; Massively Parallel Processing (MPP); Control Nodes and Compute Nodes; SQL Pool Access from SSMS Tool; T-SQL Queries @ SQL Pools; Start/Resume/Pause, Scaling Options; Creating Tables in Azure SQL Pool; Compression, MAX DOP & Indexes; Distributions: Round Robin, Hash; Distributions: Replicate and Usage; Data Imports; Dynamic Views with PDW; Data Loads Monitoring, Resource Class;

Chapter 3: Azure Data Factory Concepts

Azure Data Factory (ADF) Concepts; Hybrid Data Integration at Scale; ADF Pipeline Components & Usage; Configure ADF Resource in Azure; Understanding ADF Portal and IR; Linked Services and Connections; Datasets and Tables / Files for ETL; ADF Pipelines: Design, Publish & Trigger; ADF Pipeline with Copy Data Tool; Creating Azure Storage Account; Storage Container, BLOB File Uploads; Data Loads with Azure BLOB Files; DIU Allocations & Concurrency; Linked Services, Datasets; Pipeline Trigger, Author and Monitor;

Chapter 4: ADF Pipelines & Polybase

Copy Data Tool For ETL Operations; Azure SQL DB to Synapse Data Loads; Working with Multi Tables Data Loads; Query Options for Source Datasets; Transformations with Copy Data Tool; Rename, Rearrange & Remove Options; Pipeline Execution: DTU & DOCP; ADF Pipeline Monitoring Options; ADF Pipelines: Execution Settings; ADF Logging Options & Storage Account; Compression Option, DOP and DOCP; ETL Staging & Performance; Staging with Storage Account, Container; ADF Pipeline Monitoring; Polybase;

Chapter 5: OnPremise Data Loads with ADF

On-Premise Data Sources with Azure; Self Hosted Integration Runtime (IR); Access Keys, Remote Linked Services; Synapse SQL Pool (DW) with OnPremise; Staged Data Copy and Performance; Pipeline Executions and Monitoring; Pipeline RunIDs and Audits / Tracing; Incompatible Rows Skips, Fault Tolerance; Incremental Loads with Files (BLOB); Pipeline Executions and Schedules; Regular Schedules and Tumbling Window; Execution Retry and Delay Options; Binary Copy, Last Modified Date in Blob; Automated Loops and Trigger Schedules; Incremental Loads Verification Tests;

Chapter 6: ADF Data Flow - 1

Limitations with Copy Data Tool; Data Flow Task, Data Flow Activity; Transformations with Data Flow; Spark Cluster For Debugging; Cluster Node Configurations; Data Preview Options with DFT; SELECT Transformation & Options; JOIN Transformation and Usage; Conditional Split Transformation; Aggregate & Group By Transformations; Synapse Sink Options with DFT; DFT Optimization Techniques; Pipeline Debug Runs and ETL Testing; Spark Cluster For Pipeline Executions; Pipeline Monitoring & Run IDs;

Chapter 7: ADF Data Flow - 2

ADF Pipelines For ETL Operations; Data Flow Tasks and Activities in Synapse; Pivot Transformation For

Normalization; Generating Pivot Column, Aggregations; Pivot Transformation and Pivot Settings; Pivot Key Selection, Value and Nulls; Pivoted Columns and Column Pattern; Column Prefix, Help Graphic & Metadata; Window Functions & Usage in Data Flow; Rank / DenseRank / Row Number; Over Clause and Input Options; Derived Column Transformations; Exists & Lookup Transformations; Reusing Data Flow Tasks in Synapse; Pipeline Validations & Executions;

Chapter 8: Azure Synapse Analytics

Azure Synapse Analytics Resource; Azure Synapse Analytics Workspace; Managed Resource Group, SQL Account; SQL Admin Account and its Purpose; Operations with Synapse Workspace; ADLS Gen 2 Storage Account, Container; Synapse Studio (Synapse Portal); Dedicated SQL Pools & Spark Pools; Creating Dedicated SQL Pools; Synapse Tables, Data Loads with T-SQL; COPY INTO Statements with T-SQL; Clustered Column Store Indexes; Compressions; Aggregation with Data Loads in Azure Synapse;

Chapter 9: Synapse Analytics with Spark

Apache Spark Pool in Azure Synapse; Spark Cluster Nodes: Vcores, Memory; Creating Spark Clusters @ Synapse Studio; Python Notebooks For Remote Access; Creating Databases in Apache Spark Pool; Data Loads from Dedicated SQL Pools; Table Creations, Aggregation Operations; PySpark Code for Data Operations, Writes; Serverless Pool in Azure Synapse; Connections, Usage with Serverless Pool; Using Azure OpenDatasets in Synapse; OPENROWSET and BULK Data Loads; Azure Storage Account : Data Analysis; Working with Parquet Files in Synapse; Python Notebooks (Pyspark) in Synapse;

Chapter 10: Incremental Loads @ Synapse

Incremental Loads with Synapse Studio; Multi Table Merge Operations; On-Premise Data Sources & Timestamps; Azure SQL DB Destinations, Watermarks; Watermark Table Usage & Audits; Stored Procedures for Timestamp Updates; Table Data Type and Dynamic MERGE; SQL Queries for Datasets and Fetch; Lookup Activity and its Usage un Synapse; Expressions in ADF Portal for Lookup; Expressions in ADF Portal for Source; Output Pipeline Expression, Data Window; Concat Function, Run IDs Expressions; JSON Parameters, Pipeline Scheduling; Pipeline Validation, Trigger and Monitoring;

Chapter 11: Optimizations, Power Query

ADF ETL with GUI : Power Query; Power Query Resource Creation, Use; Source Data Configurations & Settings; Rename, Remove, Pivot, Group By, Order; Index, Filter, Remove Error Rows; Using Power Query Activity, ADF Pipelines; Spark Cluster Configurations for Pipelines; Concurrency, Big Data Recommendations; Storage Optimization Techniques; ETL Optimization Techniques; SQL Pool (Synapse) Optimizations; Indexes, Partitions, Distributions, DOP; Pipeline Optimization Techniques; Partitions, DOCP, Compressions, DIU; Staging, Polybase and Core Counts;

Chapter 12: Pipeline Monitoring, Security

Azure Monitor Resource and Usage; Pipeline Monitoring Techniques; ADF: Pipeline Monitoring and Alerts; Synapse: Pipeline Monitoring and Alerts; Synapse: Storage Monitoring and Alerts; Conditions, Signal Rules and Metrics; Email Notifications with Azure; Concurrency, Big Data Recommendations; Azure Active Directory (AAD) Users, Groups; IAM: Identity & Access Management; Synapse Workspace Security with RBAC; ADF Security with RBAC: Owner, Contributor; Azure Synapse SQL Pool Security: Logins; Users, Roles and Resource Classes (RC); Assigning RCs to Users. Object Level Security;

Azure Storage & Stream Analytics

Applicable for Plan C

Chapter 1: Azure Storage & Containers

Storage Components in Microsoft Azure; Azure Storage Services and Types - Uses; High Availability, Durability & Scalability; Blob: Binary Large Object Storage; General Purpose: Gen 1 & Gen 2 Versions; Blobs, File Share, Queues and Tables; Data Lake Gen 2 Operations with Azure; Azure Storage Account Creation; Azure Storage Container: Usage; Azure Data Explorer: Operations; File Uploads, Edits and Access URLs; Azure Storage Explorer Tool Usage; Azure Account Options in Explorer; Directory Creation, File Operations; End User Access Options With Files; Data Explorer Vs Storage Explorer Tool;

Chapter 2: Azure Migrations, BLOB Imports

SQL Server (On-Premise) to Azure Migration; Source Database Scripts & Validations; BACPAC File Generation From SSMS Tool; Azure Data Lake Storage and SSMS Access; Azure Storage Container, BACPAC Files; Azure SQL Server Creation From Portal; Azure SQL DB Imports, Storage SAS Keys; Azure SQL Database Migrations, Verification; BLOB Data Access from On-Premise; Data Imports From Excel and CSV Files; BLOB Data Imports using T-SQL Queries; SAS - Shared Access Signature Generation; CSV File - Uploads, Downloads, Edits, Keys; Master Keys, Credentials, External Sources; BULK INSERT Statement and Data Imports; T-SQL Imports : Practical Limitations;

Chapter 3: Azure Tables, Shares

Azure Tables - Real-time Usage; Schema-less Design and Access Options; Structured and Relational Data Storage; Tables, Entities and Properties Concepts; Azure Tables: Creation and Data Inserts; Azure Tables in Portal - GUI and Data Types; Azure Tables: Data Imports in Explorer; Data Edits, Queries & Delete Operations; Azure Files - SMB Protocol, Creation, Usage; Shared Access, Fully Managed & Resiliency; Performance, Size Requirements for Shares; Azure Storage Explorer Tool for File Shares; Azure Queues: Message Queues, Limitations; Adding Messages, Queuing and De-Queuing; Data Access & Clear Queue from Explorer; End Points for Azure Message Queues;

Chapter 4: Azure Storage Security, Admin

Azure Data Lake Storage Security Options; Shared Access Keys - Primary, Secondary Keys; SAS Key Generation: Container, Tables, Files; SAS Key Permissions, Validation Options; Access Keys: Account Level Permissions; Azure Active Directory (AAD): Users, Groups; Azure AD Security: RBAC with IAM, ACLs; Owner Role, Contributor and Reader Role; Azure Admin Operations: Replication Options; Azure Regions and Azure Zones, Availability; Locally & Geo Redundant Storage: LRS, GRS; Read Access (RA-GRS) & Geo Zone (GZRS); Classic Deployment Model, Encryption at REST; CORS Support (Cross Origin Resource Sharing); Auditing Access and Network Access Rules; Firewalls and Advanced Threat Protection;

Chapter 5: Azure Monitoring, Power BI

Azure Monitor, Metrics & Logs; Monitoring Azure Storage Namespaces; Add KQL Metrics; Account, Blob and File; Total Ingress and Egress Metrics: Charts; Average Latency, Transaction Count; Request Breakdowns, Signal Logic Options; Azure Alerts and Conditions, Notifications; Signal Logic Conditions and Emails; Power BI Desktop Tool Installation; Binary Data and Record Data Access; Azure Data Lake Storage: Access Keys; Azure Data Lake Storage with Power BI; BLOB File Access with Power BI; Azure Tables Creation and File Imports; Azure Table Access with Power BI;

Chapter 6: Azure Stream Analytics, IoT

Azure Steam Analytics: Real-time Usage; Real-time Data Processing, Event Tracking; Ingest, Deliver and

Analysis Operations; Azure Stream Analytics Jobs Concept; Understanding Input & Output Options; SAQL Queries for Stream Analytics Jobs; IoT: Internet Of Things For Real-time Data; Need for IoT Hubs and Event Hubs; Creating IoT Device for Data Inputs; Creating Azure Stream Analytics Resource; Stream Analytics Jobs for Historical Data; Azure SQL Database Options for ASA Jobs; SAQL: Query Formatting and Validation; Historical Data Uploads, ASA Job Execution; Stream Analytics Job Monitoring Options;

Chapter 7: IoT Hubs & Event Hubs

Azure Stream Analytics For API Data; IoT Hubs & IoT Devices, Connection Strings; Raspberry APP Connections with IoT Hub; Azure Storage Account and Container; Creating Azure Stream Analytics Job; Configuring Input Aliases with IoT Hub; Configuring Output Alias with ADLS Gen 2; SAQL Query and Job Executions; Monitoring; Azure Event Hubs and Event Instances; Event Hub Namespaces, Partition Counts; Access Policies, Permissions & Defaults; RootManageSharedAccessKey & Options; Connection Strings & Event Service Bus; Telco App Installation, Executions. LIVE Data; On-Premise Integration with ASA Jobs;

Chapter 8: Azure Stream Analytics Security

Securing Azure Stream Analytics Resource; RBAC: Role Based Access Control & IAM; Owner, Contributor, Reader, Resource Owner; Network Level and IP Address Security; Virtual Machine and Virtual Network Options; Port Level Configuration and Stream Apps; Data Feed Security for Event Hub, IoT Hub; Azure Virtual Machine (VM) Security Options; Azure Key Vaults & ADLS [Data Lake] Security; Azure Passwords, Keys and Certificates; Azure Key Vaults - Name and Vault URI; Inbuilt Managed Key and Azure Key Vault; Standard Type, Premium Type Azure Key Vaults; Secret Page, Key Backups and Key Restores; Adding Keys to Azure Vaults. Key Type, Size;

Azure Databricks & SparkSQL

Applicable for Plan C

Chapter 1: Azure Intro, Azure Databricks

Cloud Introduction and Azure Basics For Databricks; IaaS, PaaS, SaaS; Benefits of Azure Cloud Environment; Storage, ETL and Streaming Components; Need for Azure Databricks (ADB); ETL and Data Storage Components; Databricks File System (DBFS) and Usage; Azure Databricks Service Creation; Azure Databricks Workspace Operations; Spark Cluster Configurations & Capacity; Driver Nodes and Worker Nodes in Spark; Master Node & Cluster Creation Process; Databricks Runtime Service & DBUs; File Uploads into DBFS; Table Creations; Promoting Headers, Data Type Changes; DBFS Storage Navigations;

Chapter 2: SQL Notebooks & Python

Notebooks: Concept, Usage Options; Creating SQL Notebooks in Databricks; Using DBFS Tables in SQL Notebooks; Data Access and Analytics Options; SparkSQL Queries: SELECT, GROUP BY; SparkSQL Queries: Aggregates, Conditions; Notebook Operations: Download, Clone; Notebook Operations: Upload, Reuse; SQL Notebooks with Python Code; Using DBFS Sample Data Sources (CSV); Dataframes: Creation and Real-time Use; Pandas Dataframe, Virtual Table Creation; Dataframe Data Access, Caching Options; Take() and Display() Functions in PySpark; Temporary View Creation and Access; SparkSQL Queries, Analytics, Chart Reports;

Chapter 3: Python Notebooks

Azure SQL Server Configurations; Azure SQL Database Creation; Azure Firewall Rules and IP Address; Allow Azure Services, Remote Access; Connection Tests with SSMS Tool; Python Notebooks with Azure

Databricks; Data Imports and Table Creations (Code); Parquet Files and Usage in Databricks; Using Dataframes for Data Operations; SparkSQL Queries with SELECT, TOP; Establishing Connections to Azure SQL DB; JDBC Connection Strings, DataframeWriter; JDBC Properties, Port Settings & Options; Data Extraction, SQLContext & Dataframes; Pandas Data Frame for Big Data Analytics; JDBC URL Options & PySparkSQL Modules;

Chapter 4: Scala Notebooks, Transformations

Scala Notebooks with Azure Databricks; Azure SQL Database Connections with Scala; Util Properties, Connection Settings For Driver; Connection Settings for Worker Node @ Spark; Dataframe Creation and Data Access in Scala; Display Options and Data Transformations; Data Loads to Azure SQL Database Tables; Data Reads from Azure SQL DB & Analytics; Databricks Jobs : Creation Options, Usage; Job Limits, Workspace & Concurrency Limits; Notebooks with and without Parameters; Jobs with Default Parameters, Executions; Interactive, Automated Clusters for ADB Jobs; Job Schedules and Manual Executions; Active Jobs, Recently Run Jobs & Monitoring; Job Execution Reports & Workspace Options;

Chapter 5: ADB with Virtual Network

Azure Virtual Network Configuration; Azure VNets, Address Spaces & Range; Subnet and Subnet Address Range; Azure Databricks Deployments with VN; CIDR Range and IP Addresses; Public Subnet and Private Subnet; Spark Cluster Creation with ADB; End User Access using Virtual Network; Spark Cluster Notebook Operations; Notebook Exports, Imports, ReUse; SparK Cluster Configuration Changes; Power BI Connections, JDBC, User Token;Notebook Scheduling and Jobs; Interactive Clusters and Real-time Use; All Purpose Clusters and Advantages;

Chapter 6: DeltaLakes & ADF Integration

Azure Delta Lake Implementation; ACID Properties and Upsert Advantages; Delta Engine Optimizations & Uses; Pipeline Creation with JSON Files in DBFS; Delta Tables Creation, Data Loads; Spark Cluster Settings: Auto Optimize; Auto Compact and Delta Table Optimize; Delta Locations; Data Retrieval, Versions; Azure Databricks Integrations with ADF; Defining Scala Notebooks in ADB; Using Notebooks in Azure Data Factory; spark.conf.set & fs.azure.account.key; spark.read.format, Option() and Head(); dbutils() with wasbs & BLOB Data Sources; ADF Pipelines and Trigger Schedules;

Chapter 7: Databricks Integrations

Azure Databricks with Data Lake Storage; Handling Unstructured Data in Azure; Data Preparation and Staging Operations; Azure App (Service Principal) Registration; Azure Key Vault Creation & Key Usage; Service Principal Permissions @ Data Loads; Tenants and Authorization Settings; Client Credentials, Token Provider Options; Azure Databricks Clusters, Spark Notebooks; Dynamic Connections and Blob Access; Data Preparation & Big Data Ingestion; Data Extraction and ADLS Storage; show(), transformations, wasbs; Azure SQL Server & Synapse; Incremental Changes & Data Loads;

Real-time Project (End to End)

Online Retail Database Data Source; Azure Migrations and ETL Concepts; Azure SQL Pool (Synapse DWH) Tables; Apache Spark Pool : Databases, Tables; Azure Data Lake Storage (ADLS Gen 2); Azure Stream Analytics Jobs with IoT; Azure Data Bricks and DBFS, Notebooks; Big Data Analytics & Power BI Reports;

Project Requirement; Project Solution; Project FAQs; Concept wise FAQs; Resume Guidance; Mock Interviews; DP 203 Certification Guidance;

Module 2: Database Basics, SQL, T-SQL Queries

Applicable for Plans B, C

Chapter 1: SQL SERVER INTRODUCTION

Data, Databases and RDBMS Software; Database Types : OLTP, DWH, OLAP; Microsoft SQL Server Advantages, Use; Versions and Editions of SQL Server; SQL : Purpose, Real-time Usage Options; SQL Versus Microsoft T-SQL [MSSQL]; Microsoft SQL Server - Career Options; Database Engine Component and OLTP; BI Components, Data Science Components; ETL, MSBI and Power BI Components; Course Plan, Resume, Project; 24 x 7 Lab; Software Installation Pre-Requisites;

Chapter 2: SQL SERVER INSTALLATIONS

System Configuration Checker Tool; Versions and Editions of SQL Server; SQL Server Pre-requisites : S/W, H/W; SQL Server 2016 / 2017 Installation; SQL Server 2019 Installation; Instance Name; Instances : Types; Default Instance, Named Instances; Port Numbers; Service and Service Account; Authentication Modes and Logins; FileStream, Collation Properties;

Chapter 3: SSMS Tool, SQL BASICS - 1

SQL Server Management Studio; Local and Remote Connections; System Databases: Master and Model; MSDB, TempDB, Resource Databases; Creating Databases : Files [MDF, LDF]; Creating Tables in GUI; Data Insertion & Storage; SQL : Real-time Usage; DDL, DML, SELECT, DCL and TCL Statements; Data Storage, Inserts - Basic Level; SELECT; Table Data Retrieval;

Chapter 4: SQL BASICS - 2

Creating Databases & Tables in SSMS; Single Row Inserts, Multi Row Inserts; Rules for Data Insertion Statements; SELECT Statement @ Data Retrieval; SELECT with WHERE Conditions; AND and OR; IN and NOT IN; Between, Not Between; LIKE and NOT LIKE; UPDATE Statement; DELETE & TRUNCATE; Logged and Non-Logged Operations; ADD, ALTER and DROP Statements;

Chapter 5: SQL BASICS - 3, T-SQL Introduction

Schemas : Group Tables in Database; Using Schemas for Table Creation; Using Schemas in Table Relations; Table Migrations across Schemas; Default Schema : "dbo"; Import and Export Wizard; Bulk Operations; Excel File Imports / Exports; SQL Server Native Client; Executing SSIS Packages, Data Loads; Local and Global Temporary Tables; # & ## Prefix; Temporary Vs Permanent Tables;

Chapter 6: CONSTRAINTS & INDEXES BASICS

Constraints and Keys - Data Integrity; NULL, NOT NULL Property on Tables; UNIQUE KEY Constraint; PRIMARY KEY Constraint; FOREIGN KEY Constraint, References; CHECK Constraint; DEFAULT Constraint; Identity Property : Seed & Increment; Database Diagrams and ER Models; Relationships Verification and Links; Indexes : Basic Types and Creation; Index Sort Options, Search Advantages; Clustered and Non Clustered Indexes; Primary Key and Unique Key Indexes;

REAL-TIME CASE STUDY - 1 (SALES & RETAIL)

Chapter 7: JOINS and TSQL Queries : Level 1

JOINS - Table Comparisons; INNER JOINS For Matching Data; OUTER JOINS For (non) Match

Data; Left Outer Joins; Right Outer Joins - Example Queries; FULL Outer Joins; One-way and Two Way Comparisons; "ON" Conditions; Join Unrelated Tables; NULL, IS NULL in Joins; CROSS JOIN and CROSS APPLY; Join Options: Merge, Loop and Hash Joins; Performance Advantages;

Chapter 8: GROUP BY, T-SQL Queries : Level 2

GROUP BY Queries and Aggregations; Group By Queries with Having Clause; Group By Queries with Where Clause; Using WHERE and HAVING in T-SQL; Rollup : Usage and T-SQL Queries; Cube : Usage and T-SQL Queries; UNION and UNION ALL Operator; EXISTS Operator, Query Conditions; Sub Queries; Joins with Group By Queries; Nested Sub Queries; UNION and UNION ALL; Nested Sub Queries with Group By, Joins; Comparing WHERE, HAVING Conditions;

Chapter 9: JOINS & T-SQL Queries : Level 3

GetDate, Year, Month, Day Functions; Date & Time Styles, Data Formatting; DateAdd and DateDiff Functions; Cast and, Convert Functions in Queries; String Functions: SubString, Relicate; Len, Upper, Lower, Left and Right; LTrim, RTrim, CharIndex Functions; MERGE Statement - Comparing Tables; WHEN MATCHED and NOT MATCHED; Incremental Load with MERGE Statement; IIF() Function for Value Compares; CASE Statement : WHEN, ELSE, END; ROW_NUMBER() and RANK() Queries; Dense Rank and Partition By Queries;

Chapter 10: View, Procedure, Function Basics

Views : Types, Usage in Real-time; System Predefined Views and Audits; Listing Databases, Tables, Schemas; Functions : Types, Usage in Real-time; Scalar, Inline and Multi-Line Functions; System Predefined Functions, Audits; DBId, DBName, ObjectID, ObjectName; Variables & Parameters; User & System Predefined Procedures; Parameters; Sp_help, Sp_helpdb and sp_helptext; sp_pkeys, sp_rename and sp_help; When to use Which Database Objects;

Chapter 11: Triggers & Transactions

Triggers - Purpose, Real-world Usage; FOR/AFTER Triggers; INSTEAD OF Triggers; INSERTED, DELETED Memory Tables; DML Automations using Memory Tables; Read Only Tables using DML Triggers; Enable Triggers and Disable Triggers; Database Level, Server Level Triggers; Transactions & ACID Properties; Auto Commit; EXPLICIT & IMPLICIT; COMMIT and ROLLBACK; Open Transaction; Query Blocking Scenarios @ Real-time; NOLOCK and READPAST Lock Hints;

Chapter 12: ER MODELS, NORMAL FORMS

Normal Forms for Entity Relationships; First, Second, Third Normal Forms Usage; Boycee-Codd Normal Form: BNCF : Usage; 4 NF, EKNF, ETNF. Functional Dependency; Multi-Valued, Transitive Dependencies; Composite Keys and Composite Indexes; 1:1, 1:M, M:1, M:M Relationship Types; SQL Queries Access in Reporting Tools; Storing SQL Queries into Views; Creating Office Data Connection Files; Excel Pivot Reports and Reports; SQL Queries (Auto Generated) in BI Tools; FETCH OFFSET, NEXT ROWS; Data Refresh (Manual, Automated);

REAL-TIME CASE STUDY - 2 (Sales & Retail), EXCEL INTEGRATION

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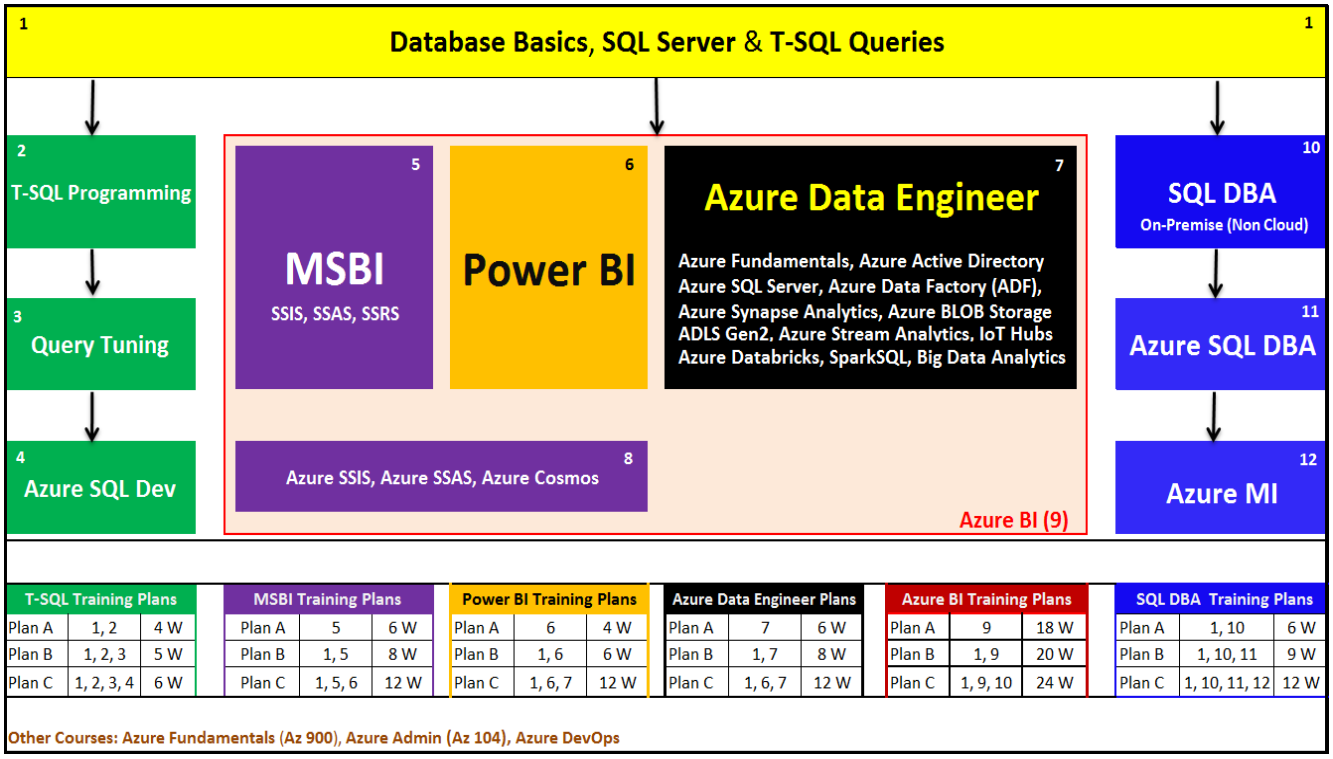

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