SQL School™

Quality Training Assured

SSIS Training Plans

	PLAN A	PLAN B	PLAN C
Course Includes	**1. SSIS** [ETL, DWH]	**1.SSIS [ETL, DWH]** **2. Azure Data Factory**	**1. T-SQL Queries** **2. SSIS [ETL, DWH]** **3. Azure Data Factory**
SSIS: Control Flow, Data Flow; SSIS DB	✓	✓	✓
SSIS: Static & Dynamic Connections	✓	✓	✓
SSIS: ETL, Data Warehouse Design	✓	✓	✓
SSIS: Transformations, Data Loads	✓	✓	✓
SSIS: Data Cleansing, Lookups	✓	✓	✓
SSIS: Catalog Databases, Usage	✓	✓	✓
SSIS: Deployments, Migrations	✓	✓	✓
SSIS : Star & Snowflake Schemas	✓	✓	✓
SQL : Basics, DDL, DML, SELECT	X	✓	✓
T-SQL: Constraints, Normal Forms	X	✓	✓
T-SQL: Joins, Group By, Queries	X	✓	✓
T-SQL: Merge, Pivot, Date-Time	X	✓	✓
T-SQL: Excel Integrations, Pivot Charts	X	✓	✓
ADF : Azure Data Factory Architecture	X	X	✓
ADF : Azure Data Warehouse Concepts	X	X	✓
ADF : Massively Parallel Processing	X	X	✓
ADF : Copy Data Tool, ADF Portal	X	X	✓
ADF : Incremental Loads using SPs	X	X	✓
ADF : SSIS Migrations to Azure	X	X	✓
Total Course Duration	2.5 Weeks	5 Weeks	7.5 Weeks

Module 1: Basics, SQL Server & T-SQL Concepts (For SSIS Plan 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; Indexes : Basic Types and Creation; Clustered and Non Clustered Indexes; Primary Key and Unique Key Indexes;

Chapter 7: JOINS and TSQL Queries : Level 1

JOINS; INNER JOINS For Matching Data; OUTER JOINS For (non) Match Data; Left Outer Joins; Right Outer Joins; FULL Outer Joins; One-way & Two Way Comparisons; "ON" Conditions; NULL, IS NULL; CROSS JOIN and CROSS APPLY; Join Options: Merge, Loop and Hash Joins;

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

GROUP BY Queries and Aggregations; Group By Queries with Having Clause & Where Clause; WHERE and HAVING in T-SQL; Rollup : T-SQL Queries; Cube : Usage and T-SQL Queries; UNION and UNION ALL; EXISTS; 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, Chapter 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; IIF() Function for Value Compares; CASE Statement : WHEN, ELSE, END; ROW_NUMBER() and RANK() Queries; Dense Rank and Partition By;

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; System Predefined Functions, Audits; DBId, DBName, ObjectID, ObjectName; Variables & Parameters; System Predefined Procedures; Parameters; Sp_help, Sp_helpdb and sp_helptext; sp_pkeys, sp_rename and sp_help;

Chapter 11: TRIGGERS & TRANSACTIONS

Triggers Real-world Usage; FOR/AFTER Triggers; INSTEAD OF Triggers; INSERTED, DELETED Memory Tables; DML Automations using Memory Tables; Read Only Tables; Enable Triggers and Disable Triggers; ACID Properties; Auto Commit; EXPLICIT & IMPLICIT; COMMIT and ROLLBACK; Open Transactions; 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; Office Data Connection Files; Excel Pivot Reports; SQL Queries in BI Tools; FETCH OFFSET, NEXT ROWS; Data Refresh (Manual, Automated);

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

Module 2: SQL Server Integration Services (SSIS)

{For SSIS All Plans A}

Chapter 1: SSIS INTRODUCTION & INSTALLATION

Need for SQL Server Integration Services (SSIS) & ETL / DWH; Advantages of SSIS for Data Loads, Operations, ETL, Warehouse; SSIS Tools : SSDT (SQL Server Data Tools), ETL Wizards; SSIS Design / Development and LIVE (Deployment) Environment; Understanding Data Warehouse (DWH) Design and ETL Process; DWH and ETL Structures, Implementations with MSBI SSIS; SSIS ETL Operations for Data Reads, Data Cleansing, DWH; Data Warehouse (DWH) Design Principles and Design Plan; SSIS 2019 and SSIS 2017 : SSIS Database Installations; SSIS Database & Catalog Folders - Purpose, Usage, Passwords; SSIS Catalog Database (SSIS DB) : Creation, Verification; SSDT Tool: SQL Server Data Tools - SSDT / Visual Studio Shell; SSDT Installation and Verification of SSIS Templates; Basic Vocabulary - SSIS, ETL, DWH, Data Flow, Data Buffer; SSIS Package Environment and Project Creation; SSIS Project Templates - Verifications; Version Control and SSIS Design Plan - Tools Usage;

Chapter 2: SSIS ETL PACKAGES: EXTRACT, TRANSFORM, LOAD

Control Flow Tasks - Architecture, Purpose and Usage; Data Flow Tasks - Architecture, Purpose and Usage;

Creating SSIS Packages For Basic Data Flow Operations; SSIS Solutions, Projects and Package Creation. Tasks; Need For Data Pipelines & Connections in Data Flow Tasks; Understanding SSIS Package (Program) Execution Process; Working with Data Flow Objects and Tasks in SSIS; Using OLE DB and SQL Server Connections - Usage; SSIS Package Creation Process - Using Control Flow Items; Using DTSX Files for SSIS Package Execution. Audits; SSIS Execution Context, SSIS Package Errors and Logs; Data Flow Transformation: Conditional Split, Expressions; Excel Connections, Sheets, & Memory References - Usage; Using Source Assistants, Destination Assistants @ SSIS;DAT File Imports, Data Flow Options, Adding Annotations; SSIS Project Configuration - Debugging, Bit Config; SSIS 64 Bit and 32 Bit Configuration Settings and Options;

Chapter 3: MERGE, FUZZY LOOKUP, DATA CONVERSION

MERGE Transformation and UNION ALL Transformation; SORT Transformation, NOSORT Options, Advanced Sort; Synchronous & Asynchronous Transformations, Data Loads; Row and Partial Blocking Transformations. Buffer Reuse; Fully Blocking Transformations - Buffer Reuse Restrictions; Examples to Avoid Fully Blocking Transformation in SSIS; Bulk Load Operations and Data Import Options in SSIS; IsSorted and SortKey Positions with Advanced Options; Measuring SSIS Package performance & Resource Usage; Data Conversion Transformation and SSIS Expressions; Fuzzy Lookup Transformation, Reference Table Connections; Exact, Fuzzy & Nomatch Data Cleansing with Conditional Split; Index Creation, Maintenance for Faster Lookup Transformation; Data Conversion Transformation - Usage. Derived Columns; Data Conversion Transformation: NVARHAR, VARCHAR Data; Threshold Values Selection, Search Delimiters and Options; Data Pipeline with _Similarity, _Confidence. Explicit Data Type Conversions and Usage. Error Redirections;

Chapter 4: PACKAGE PROPERTIES, CHECKPOINT, PIVOT

Execute SQL Task and OLE DB Queries; Transaction Options For SSIS Executables - Package Level; Precedence Constraints - Success / Failure / Completion; SSIS Package Level Rollbacks and Restart Execution Options; SSIS Checkpoints - Purpose and Usage with Data Flow Tasks; Checkpoint Files and SSIS Logging Options - Package, Tasks; Transactions with Checkpoint File Usage in SSIS Packages; Checkpoint Options - Advantages, Usage and Limitations; FailPackageOnFailure and Checkpoint; Transaction Property : REQUIRED / SUPPORT, NOTSUPPORTED; Importing Legacy Data, Data Cleansing, Formatting; PIVOT Transformation, Data Reads, Connection Assistant; Pivot Usage Values - Purpose and Implementation. Key Values; Lineage ID in SSIS - Purpose, Usage Options. Data Mappings; Lineage IDs for Column Mapping and Pivot Keys; Data Viewer (Debugging) for Data Transfer; Explicit Data Type Conversions. Error Redirections;

Chapter 5: SSIS with ETL & DWH. SCD TYPE 1, TYPE 2

Validation Events, Execution Events; Pre-Execution, Progress and Cleanup Events in SSIS; Auditing SSIS Events, Errors / Warnings / Information; Configuring and Using sysssislog System Tables; Package Debugging : Data Viewers & Breakpoints; For Each Loop Container. File Connections, Variables; Defining Variables for Connections. DFT, Control Flow Links; Dynamic Connections with Variables. Connection Strings; Connection Iterations, Connection Fetch, Index Mapping; SSIS Expressions and Usage for ETL and DWH; FOR LOOP Expressions in SSIS; InitExpression, EvalExpression, AssignExpression; SSIS Expression Builder, Functions, Evaluated Values; Data Insertions and Data Serializations with SSIS; Counter Values, Variables and Parameter Mapping; SSIS for OS Drive Operations, Loops; Using Execute SQL Task : Variables, Return Values;

Chapter 6: DATAWAREHOUSE (DWH) DESIGN WITH SSIS

Introduction to Data Warehouse (DWH) - Purpose, Usage, Access; Technical Terms: Dimensions, Attributes, Members and Types; Dimension Tables, Fact Tables and Relations, Inferred Members; TYPE1 and TYPE2

Changes. ETL Implementation Techniques; Implementing Type I Changes (SCD) for DWH : Sales Scenario; Dimensional Table Design for DWH using SCD - Type 1, Type 2; Initial Data Loads with Legacy Files (DAT, TXT, CSV), Data Marts; Working with Business Keys & non Identity Key Based Columns; Surrogate Keys and Alternate Business Keys - Purpose, Usage; Identity Columns, Key Values in DWH. Business Key Limitations; Cascading Source OLTP / Stage Changes to DWH Inactive Rows; Changes to Fixed Attributes, Changing Attributes. Observations; Changes to Historical Attributes. Inferred Member Updated; ETL Date Fields, Row Status Values and Transformations; Designing Dimensions for DW - Incremental, Historical Loads; Historical Attributes, Data Delta Operations, Identification; SSIS SCD Transformation Limitations and Real-time Issues;

Chapter Ch 7: CHECKSUM TRANSFORMATION, DWH DESIGN

Configuring Checksum Transformation : 2019, 2017 Versions; Checksum Transformation Logic and Parity Checks (CRC) Codes; Working with CHECKSUM Transformation & Parity Bit Columns; Generating Checksum Values For Type I, Type II ETL Changes; DWH Dimension Tables With Checksum Transformation; Working with Parity Bits, Conditional Lookup Transformation; Row Redirection Options & Lookup Match, NonMatch Output; OLE DB Command: SQL Statements; Parameter Mapping Options and Dynamic SQL for Row Updates; Cache Transformation with Memory Loads, CAW Files (VM); Memory Connections and Reuse. Lookup with Cache Options; Tuning Lookup Transformation: Caching Options, Index Options; FULL CACHE and PARTIAL CACHE. Cache Connection Manager; Pre-ETL Data Load with Memory Connections; Lookup with NOCACHE. Dependent Data Flow Tasks; Post ETL, Derived Column and Fuzzy Transformations; SSIS Package Internal Parameters; OLEDB Command with Conditional Splits, Multi Row Updates;

Chapter 8: CHANGE DATA CAPTURE: DWH DIMENSIONS

Understanding CDC Tables with SQL Server Connections; DML Audits: Inserts, Deletes, Values before/after Updates; CDC Source Connections - Usage, ADO.NET Integration; CDC Control Flow Tasks and CDC State Tasks. Values; INITIAL LOAD START / END. PRCESSING RANGE; Using State Variables and Controls. Storing States; CDC Source with Net Support Changes; SSIS CDC Control Tasks and Caching, State Variables; Understanding State Variables and SSIS Logging Tables; Initial and Incremental Loads with CDC; Dynamic CDC Connections, Parameter Mapping; Integrating Control Flow and Data Flow for CDC @ ETL; CDC Splitter Transformation - Row Inserts and Updates; Master Packages and Child Packages, Derived Columns; Defining Local and Global Variables/Parameters; Parameter Bindings with Parent - Child Packages;

Chapter 9: FACT TABLE DESIGN, FACT LOADS (DWH)

Fact Table - Design and Implementation Rules, ER Model; Fact Table Design with STAR and SNOWFLAKE Schemas; Time Dimensions - Purpose, Usage and ETL Date / Time; Generating Time Dimensions for ETL, Load Identification; Parent-Child Packages for Dimensional Loads, Control Flow; Parent-Child Packages for Dimensions & Fact Table Loads; Master Package Design: Dimension, Fact Load Integration; Inferred Members and Status for NULLs in Dimensions; Parameter Mapping @ ETL Updates, Component Properties; ETL Load Date IDs & Expressions for Dimension Keys; Error Handling & Event Handling with Master Packages; Text Qualifiers and Parameters in Master-Child Packages; Key Based Dimension LOOKUPs and Indexes. Fast Loads; SCD Implementations with Legacy Data. ETL Load Types; Fact Load Design for Initial Loads, Incremental Updates; End-to-End Data Warehouse Design: Implementation; Direct Data Loads and Data Stage Operations for DWH DBs; STAR & SNOWFLAKE Schemas for DWH - Data Modelling;

Chapter 10: DWH MIGRATIONS with SSIS, SCRIPT Task

Data Warehouse Migrations with SSIS Control Flow; Using SSIS Containers and Db Integrity Task; Using Pre-

Database Migration Tasks, Precautions; Transfer Database Task and DB File Options; Online and Offline DB Transfer Options, Usage; Copy / Move Options with DWH Migrations; SMTP : Simple Mail Transfer Protocol For Emails; Using SQL Server Agent Operators, Package Events; Precedence Constraint with Containers, SSIS Tasks; Using Data Profiling Task with ADO.NET Connectors; XML Files Generation, Using SSIS Data Profiler Tool; Script Task - Purpose and Working in SSIS Control Flow; Script Task - Usage with VB.NET Programs. Compilations; Variables and Parameters with SSIS Script Task. Usage; Read Only and Read Write Variables. Expressions, Mapping; Data Flow Limitations : Solutions with .NET Scripting; SSIS Expressions and Package Debugging, Break Points; SSIS Variables and Parameters - Mapping Expressions; Using Control Flow File System Tasks and Limitations; SQLDataAdapters & System.Data.SQLClient Connections;

Chapter 11: SSIS PROJECT DEPLOYMENT, UPGRADES

SSISDB Catalog Deployments - Process & ISPAC Files; SSIS Package Builds, Verification Techniques, Scripts; SSIS Project Deployment Wizard : Targets and Logging; SSIS DB Catalog Folders - Creation, Usage. Properties; SSIS DB Catalog Projects - Creation, Usage. Properties; SSIS Package Executions - Scripts, Reports, Messages; Package Validations - Scripts, Reports, 32/64 bit Options; Package Configurations - Parameter Management, Scripts; SSIS Package Jobs @ SQL Server Agent. SSIS Job Steps; SSIS Job Schedules and Notifications: Windows Event Logs; Package Security Management - SSISDB Logins and Users; Folder Level and Project Level Security Implementation; Project Migration Utilities and Package Upgrades; SSIS Package Imports and Exports with ISPAC Files; Command-Line Deployments For SSIS, Execution Utilities; SSIS Package Execution Reports; Validation Reports; SSIS Package Versions and Restores, SSIS Rollbacks;

Chapter 12: SSIS PROJECT [E-Commerce Domain]

SSIS ETL & DWH with STAR Schema; SSIS ETL & DWH with SNOWFLAKE Schema; Dimension Table Design & Business Keys; Fact Table Design & Data Integrity; Incremental Data Loads with Containers; Key Lookup and Business Key Identification; Staging Tables, Master - Child Packages; SSIS Package Deployment [Catalog Deployments]; SSIS Training : Project Specifications; Project Explanation and Solution; Project FAQs and Resume Support; Chapter Wise FAQs and Answers; Concept Wise Tasks and Solutions; SSIS DWH Databases with Reports; Technical Resume Points in SSIS; End to End Implementation [MSBI];

Module 3: Azure Data Factory (ADF), Synapse

{For SSIS Plans B, C}

Chapter 1: AZURE DATA ENGINEER INTRODUCTION

Azure Data Engineering - Job Roles; Cloud, Azure Platforms : Advantages; IaaS, SaaS, PaaS Implementations; Microsoft Azure & Data Engineering; Azure SQL Database, Azure Synapse; Azure Data Factory, Azure Databricks; Azure Data Lake, Azure Analytics; DP 200, DP 201 Certification Exams; Subscription and Azure Resources; Azure Portal : Resources, Dashboards; Creating Resource Groups, Use; Creating Azure SQL Server, Region; Creating Azure SQL Databases; Compute and Storage, DTU Plans; Firewall Configurations in Azure; SSMS Tool, ADS Tools. Connection Tests;

Chapter 2: AZURE SYNAPSE CONFIGURATION, ARCHITECTURE

Azure SQL Pool and Synapse Concepts; Azure Synapse (DWH) Creation; Synapse Firewalls, Remote Access; DWU Units and Scaling Options; Connections with SSMS, ADS Tools; Start, Pause, Resume in Azure Synapse; DMS : Data Movement Service, CMVs; Scaling Options, Compute Engine; Azure Synapse

Analytics Engine; cDWU & DWU, Sharding Benefits; Massively Parallel Processing (MPP); Control Node and Compute Node; Data Distribution in Azure Synapse; Hash Functions, Distributed Tables; Round-Robin and Replicated Tables; Dynamic Management Views (DMV);

Chapter 3: AZURE DATALAKE STORAGE, DATA MIGRATIONS

Azure BLOB Storage Account Creation; Azure DataLake Storage (Gen 2); Creating Containers and File Uploads; Azure Storage Explorer Tool Usage; Azure Resource Manager (ARM) Options; Data Lake Storage Performance Options; Replication : LRS, GRS, RA-GRS; Hot Access with Azure Data Lake; Database Migrations from On-Premise; Data Migration Assistant (DMA) Tool; Table Data Imports using DMA Tool; Azure SQL Database, Synapse Imports; Generating bacpac Files from SSMS; Bulk Uploads with Azure Data Lake; Azure SQL Server Imports (SaaS);

Chapter 4: AZURE DATA FACTORY, SYNAPSE LOADS

Azure Data Factory (ADF) Introduction; Azure Data Factory Architecture; ADF : Data Processing, Movement; Data Mashup and ETL Components; Creating Azure Data Factory Resource; Author & Monitor Options in ADF; ADF Pipelines, Activities, Connections; Copy Data Tool in ADF Portal, Use; Dataset Creation with Azure Synapse; Linked Service Creation with Synapse; Dataset Creation with Azure Storage; ADF Pipeline Deployments, Triggers; Polybase for Data Staging, DIUs; Testing Data Loads;

Chapter 5: AZURE SQL DB LOADS TO SYNAPSE

Copy Data From Azure SQL Database; Azure Synapse (DWH) Sinks in ADF; Data Sets Creation, ADF Data Pipelines; Activities : Move & Transform for ETL; Actions and View Activity Runs; ADF Pipeline Monitoring and Refresh; ADF Triggers - Manual, Automatic; Azure Database to Azure Synapse Loads; Creating Pipelines in ADF Portal; Pipeline Properties, Custom Options; Activities in ADF : Types, Classifications; General, Source and Sink Properties; Debugging and Validations; Testing Data Loads into Azure Synapse;

Chapter 6: ON PREMISE DATA LOADS TO SYNAPSE

Azure Data Factory with On-Premise; Azure Data Factory Runtime Engine; On-Premise Data Extraction and Loads; Self Hosted IR in Copy Data Tool; IR Engine Installation, Key Concepts; IR Connections, Authentication Methods; IR Tool Configuration and Monitoring; Azure Storage Linked Service, Reuse; Creating ADF Pipelines with On-Prem; Remote Connections, Self Hosted IR; Creating Pipelines in ADF Portal; Data Integration Units [DIU] Usage; ADF Tuning with Synapse; Testing Data Loads into Synapse;

Chapter 7 : INCREMENTAL DATA LOADS 1

Incremental Data Loads with ETL; Incremental Loads in ADF Portal; Source Data & Watermark Column; Watermark Tables : Creation, Use; TimeStamp For Incremental Loads; Configuration Procedures for ETL; Using Lookup Activities in ADF; Lookup Transformation with ADF; Expressions and Usage in ADF; Generating New Watermark Columns; Lookup Output Row Level Audits; Stored Procedures and Dynamic Values; Parameterized Values for Data Extraction; Using ADF Run IDs for Connections; Parameter Imports and Staging Options; Output() Functions & Item() Functions;

Chapter 8: INCREMENTAL DATA LOADS 2

Incremental Loads - Multiple Tables; Data Prep for Watermark Store; For Each Activity and Real-time use; Lookup Activities Use in ADF; Linked Service Parameters, Use; Copy Data Activity for ETL in ADF; Stored Procedure Activity for ETL; Data Pipelines Parameters in ADF; Object Name Parameters, Iterations; Using Self Hosted IR Engine in ADF; Incremental Loads with Data Lake; Dynamic Sources and Destinations; ADF Pipeline Executions, Run IDs; Dynamic File Formats; ADF Pipeline, Trigger Execution Runs;

Chapter 9: DATA FLOWS IN AZURE DATA FACTORY

Data Flow Activity in ADF Pipeline; Using Data Flows for ETL Operations; Mapping Data Flow, Transformations; Linked Services & Datasets Creations; Data Flow Debugging in Spark Clusters; Data Preview and Dynamic Content; Data Flow Expressions in ADF; Conditional Split Transformations; Joins with Multiple Datasets; Table Data Comparisons in ADF; Working with ETL Loads, Timestamps; Broadcast Join, Map-Side Join; Limitations with Spark Clusters; Synapse Database Sinks; Real-time Considerations;

Chapter 10: DATA WRANGLING IN ADF, SYNAPSE

Data Wrangling in Azure Data Factory; Need for Wrangling with Synapse DB; Power Query Operations' with ADF; Multiple Data Flow Activities in ADF; Tuning Options with Azure Synapse; CTAS, Pipelining and Indexing Options; Fact Tables and Dimension Tables; ETL Concepts with Azure Synapse; Performance Levels in Synapse; COPY Statement and Data Loads; ETL Operations with Azure Storage; Understanding COPY Statement; Optimize Column Store Compression; Optimize Statistics; Column Store Indexes;

Chapter 11: AZURE ANALYTICS WORKSPACE

Azure Synapse and Spark Technologies; Azure Synapse SQL Concepts; Azure Synapse Pipelines, Usage; Creating Workspace in Azure Synapse; Azure Data lake Storage Gen 2; Edit, Delete Options: Command Bars; Azure Synapse Studio : IDE; Storage Accounts Browsing Options; Query Files and Storage Blob; SQL Scripts and Spark Notebooks; Creating Spark Pools in Synapse; SQL On-demand in Azure Synapse; Logical Data Warehouse Concepts; Client Tools, PARQUET File Format;

Chapter 12: AZURE SYNAPSE MANAGEMENT

Backups and Restores in Synapse; Creating and Using Restore Points; Restoring Deleted Resource Pool; Restore from Geo-Backup SQL Pool; Azure Synapse Security, RBAC; Authorization Techniques in Synapse; Transparent Data Encryption (TDE); Certificates and AES-256 Algorithm; Security Scripts in T-SQL, Alerts; Threat Detection, Threat Protection; Monitor Query Executions, Queries; Monitor Active Queries, CTAS; Polybase Loads, Catalog Loads; Suspended States and TempDB; sys.dm_pdw_exec_requests; Creating Logins and Users for ETL;

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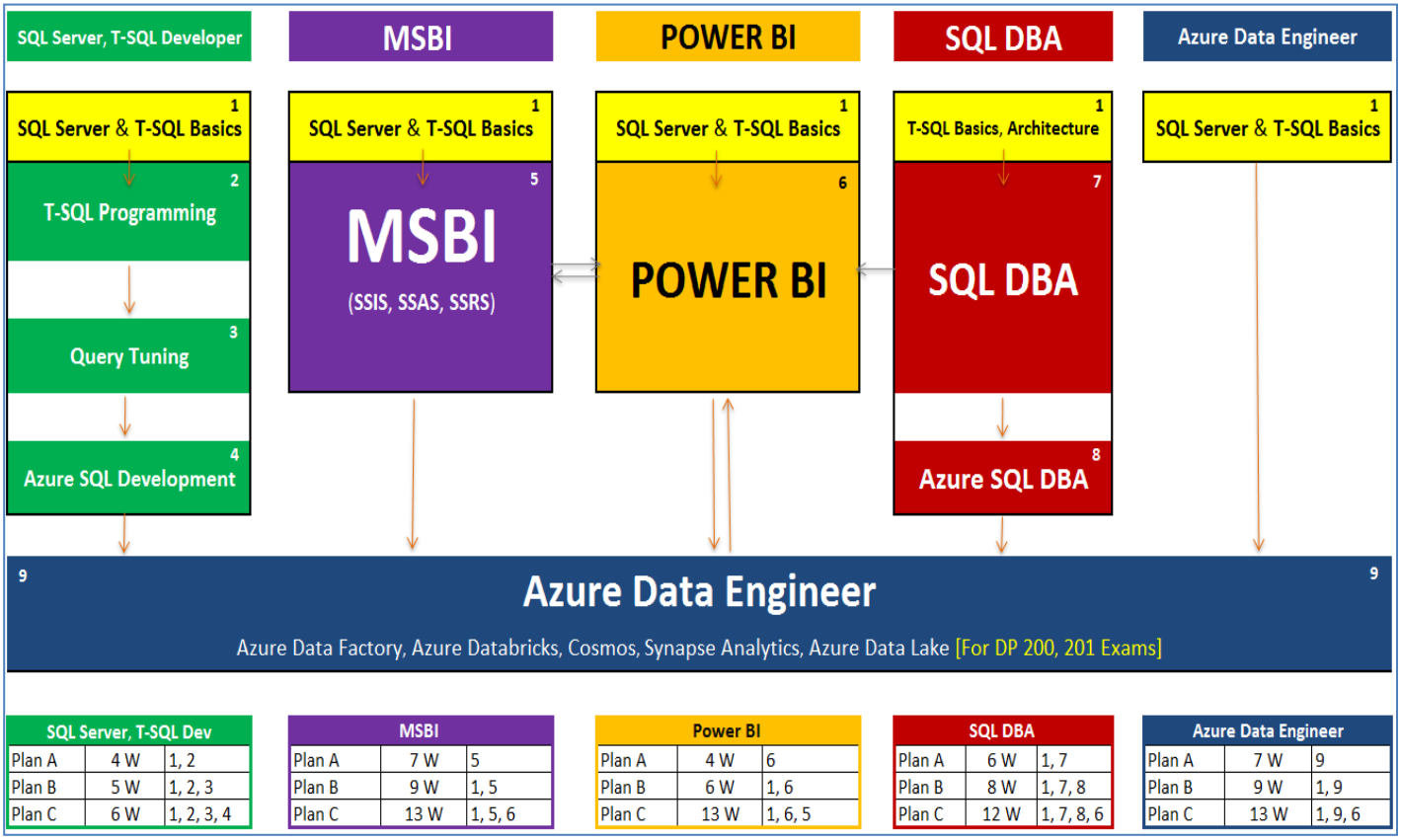

SQL Server, T-SQL Dev		
Plan A	4 W	1, 2
Plan B	5 W	1, 2, 3
Plan C	6 W	1, 2, 3, 4

MSBI		
Plan A	7 W	5
Plan B	9 W	1, 5
Plan C	13 W	1, 5, 6

Power BI		
Plan A	4 W	6
Plan B	6 W	1, 6
Plan C	13 W	1, 6, 5

SQL DBA		
Plan A	6 W	1, 7
Plan B	8 W	1, 7, 8
Plan C	12 W	1, 7, 8, 6

Azure Data Engineer		
Plan A	7 W	9
Plan B	9 W	1, 9
Plan C	13 W	1, 9, 6

Training Modes:

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