Complete Practical, Real-time Job Oriented Training

Cloud Data Architect Training

Whom we are?

Over 19 Years of strong commitment in training excellence, **SQL School** assure you 100% practical, step by step learning process paired with Assignments, Use Case Scenarios and Realtime Project Implementations for your Resume and Job Work. We are sure, you will have a wonderful journey with us. Visit Us at www.sqlschool.com

Who is Cloud Data Architect?

Cloud Architects design the blueprints that organizations use for their data management systems. This includes drafting a data management framework to meet business and technology requirements while ensuring data security and compliance with regulations. Involves Multi Cloud: **Azure, AWS, Fabric, Snowflake** and **Power BI** / **Tableau** Clouds.

What are the Job Roles for Cloud Architect?

- ✓ Data mining to uncover patterns, anomalies, and correlations in large data sets
- ✓ Data management to efficiently and cost-effectively collect, store, and use data
- ✓ Data modelling tools like Erwin or Visio to visualise metadata and database schema
- ✓ Manage Multi Cloud Environments for OLTP: Azure SQL DB, Amazon RDS
- ✓ Management Multi Cloud Environments for ETL, DWH: Azure, Fabric, AWS, Snowflake

Cloud Architect: Training Modules:

- **Module 1: MSSQL & TSQL Queries**
  - MSSQL Queries
  - Query Tuning, CTEs
  - Procedures, Functions
  - Merge, Rank, Sub Queries
- **Module 2: Azure Data Engineer**
  - Azure Concepts
  - Azure Data Factory
  - Azure Databricks & Open Source Databricks
  - Azure Functions, Logic Apps, IoT, ADLS
  - CI-CD Integrations
- **Module 3: Snowflake**
  - Snowflake
  - SnowSQL
  - SnowPark, DBT
- **Module 4: Power BI**
  - Power Query, DAX
  - Power BI Cloud Service
  - Power BI Report Server
  - AI & CoPilot
- **Module 5: Erwin**
  - Data Modelling
  - Logical & Physical Models
- **Module 6: AWS**
  - AWS EC2, Storage
  - AWS RDS
  - AWS Redshift
  - AWS Glue, Athena, more..
- **Module 7: Fabric**
  - Fabric Warehouse
  - Fabric Lakehouse
  - Fabric Data Factory
  - Fabric Data Flow, PySpark
  - Fabric AI & CoPilot

Course Duration: 8 Months

🔥 Detailed Course Content 🔥

Module 1: SQL Server TSQL (MS SQL) Queries

Ch 1: Data Engineer Job Roles

- ✓ Introduction to Databases
- ✓ Cloud Data Architect Job Roles
- ✓ Cloud Architect Challenges
- ✓ Cloud Architect technologies
- ✓ Data and Databases Intro

Ch 2: Database Intro & Installations

- ✓ Database Types (OLTP, DWH, ..)
- ✓ DBMS: Basics
- ✓ SQL Server 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: Data Types

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

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: Normal Forms & RDBMS

- ✓ Normal Forms: 1 NF, 2 NF
- ✓ 3 NF, BCNF and 4 NF
- ✓ Adding Keys to Tables
- ✓ Cascading Keys
- ✓ Self Referencing Keys
- ✓ Data Modelling (OLTP)
- ✓ ER Models

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

- ✓ Stored Procedures: Realtime Use
- ✓ Parameters Concept with SPs

- ✓ Procedures with SELECT
- ✓ System Stored Procedures
- ✓ Metadata Access with SPs
- ✓ SP Recompilations

Ch 13: User Defined Functions

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

Ch 14: 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 15: Transactions & ACID

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

Ch 16: CTEs & Tuning

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

Ch 17: Indexes Basics, Tuning

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

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, 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: Cursors & Fetch

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

Ch 22: Window Functions, CASE

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

Ch 23: Merge (Upsert) & CASE, IIF

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

Module 2: Azure Data Engineer

Section 1: ADF, Synapse

Ch 1: Azure ETL, DWH Introduction

- ✓ Data Warehouse (DWH)
- ✓ Cloud Concepts: IaaS, PaaS
- ✓ SaaS & Azure Cloud Concepts
- ✓ Azure Resources & Groups
- ✓ Storage, ETL, IoT Resources

Ch 2: Azure Intro, Azure SQL

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

Ch 3: Azure Synapse (DWH)

- ✓ Synapse Pool Architecture
- ✓ Control Node, Compute Node
- ✓ DMS & Partitioned Tables
- ✓ Creating Tables with TSQL
- ✓ Distributions: RR, Hash, Repl
- ✓ Big Data Loads with TQL
- ✓ Important DMFs & DMVs

Ch 4: 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 5: 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 6: BLOB Data Loads

- ✓ Azure Storage Account
- ✓ Azure BLOB Containers
- ✓ BLOB Storage in ADF
- ✓ Synapse Analytics with IR
- ✓ ADF Pipeline Edits
- ✓ Pipeline Runs, Monitoring

Ch 7: Pipeline Settings

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

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 Runs, Activity IDs

Ch 10: ADF Data Flow - 1

- ✓ Data Flow Transformations
- ✓ Spark Clusters for Debugging
- ✓ Optimized Clusters, Preview
- ✓ Conditional Split, SELECT
- ✓ Sort, Union Transformations
- ✓ Pipelines with Data Flow

Ch 11: ADF Data Flow - 2

- ✓ Working with Multiple Tables

- ✓ Join Transform, Broadcast
- ✓ Row Filters, Column Filters
- ✓ 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
- ✓ Tuning Transformations
- ✓ Tuning Data Flow, Spark

Ch 13: ADF Data Flow - 4

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

Ch 14: ADF Metrics, Alerts

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

Ch 15: ADF Parameters, Security

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

Ch 16: Parameters, SCD & ETL

- ✓ ADF Templates in Realtime
- ✓ Implementing ADF SCD
- ✓ Table Incremental Loads
- ✓ Control Tables, Watermarks
- ✓ Pipeline Parameters, SPs

- ✓ Dynamic Data Sets, SCD

Ch 17: Synapse Analytics

- ✓ Azure Synapse Analytics
- ✓ Dedicated SQL Pools
- ✓ TSQL: Stored Procedures
- ✓ Synapse Pipelines, Tuning
- ✓ SP Activity in Pipelines, Jobs
- ✓ Comparing ADF & Synapse

Ch 18: CI CD with GitHub

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

Section 2: Data Lake Storage, IoT

Ch 1: Azure Storage Security, ADF

- ✓ Access Keys & Admin Access
- ✓ SAS Keys Generation, Ips
- ✓ Azure AD Users, Groups
- ✓ IAM & RBAC with Entra Users
- ✓ ACLs and ADLS Security
- ✓ ADF with Azure Storage Security

Ch 2: 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 3: Azure Tables & ADF

- ✓ Azure Tables
- ✓ Entities and Properties
- ✓ Storage Service Operations
- ✓ OData Queries & Filters
- ✓ Data Loads with ADF

Ch 4: Azure Stream Analytics

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

Ch 5: Azure Key Vaults

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

Ch 6: Azure Logic Apps

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

Section 3: Python, Spark, PySpark, Databricks

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: Unity Catalog Operations, Spark SQL - 1

- ✓ Spark SQL Notebooks
- ✓ Creating Catalog
- ✓ Creating Schemas, Tables
- ✓ Spark Data Types
- ✓ Data Partitioning
- ✓ Managed Tables
- ✓ SQL Queries with the PySpark API
- ✓ Union, Views in Spark
- ✓ Dropping Objects
- ✓ External Tables, External Volumes
- ✓ Spark SQL Notebooks: Exports, Clone

Ch 5: Spark SQL Notebooks - 2

- ✓ 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 6: Python Concepts - 1

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

Ch 7: Python Concepts - 2

- ✓ Python Data Types
- ✓ Integer / Int Data Types
- ✓ Float, String Data Types
- ✓ Arithmetic, Assignment Ops
- ✓ Comparison Operators
- ✓ Operator Precedence
- ✓ If ... Else Statement
- ✓ Short Hand If, OR, AND

- ✓ ELIF and ELSE IF Statements

Ch 8: Python Concepts - 3

- ✓ Python Lists
- ✓ List Items, Indexes
- ✓ Python Dictionaries
- ✓ Tables Versus Dictionaries
- ✓ Python Modules & Pandas
- ✓ import pandas.DataFrame
- ✓ Pandas Series, arrays
- ✓ Indexes, Indexed Lists

Ch 9: PySpark - 1

- ✓ Dataframes with SQL DB
- ✓ Pandas Dataframes
- ✓ Dataframe()
- ✓ List Values, Mixed Values
- ✓ spark.read.csv()
- ✓ spark.read.format()
- ✓ Filtering DataFrames
- ✓ Grouping your DataFrame
- ✓ Pivot your DataFrame

Ch 10: PySpark - 2

- ✓ DataFrameReader
- ✓ DataFrameWriter Methods
- ✓ CSV Data into a DataFrame
- ✓ Reading Single Files
- ✓ Reading Multiple Files
- ✓ Schema with an SQL String
- ✓ Schema Programmatically

Ch 11: PySpark – 3

- ✓ Writing DataFrames to CSV
- ✓ Working with JSON
- ✓ Working with ORC
- ✓ Working with Parquet
- ✓ Working with Delta Lake
- ✓ Rendering your DataFrame
- ✓ Creating DataFrames from Python Data Structures

Ch 12: PySpark Transformations - 1

- ✓ Data Preparation
- ✓ Selecting Columns

- ✓ Column Transformations
- ✓ Renaming Columns
- ✓ Changing Data Types
- ✓ select() and selectExpr()
- ✓ Column Transformations
- ✓ withColumn()

Ch 13: PySpark Transformations - 2

- ✓ Basic Arithmetic and Math Functions
- ✓ String Functions
- ✓ Datetime Conversions
- ✓ Date and Time Functions
- ✓ Joining DataFrames
- ✓ Unioning DataFrames
- ✓ Joining DataFrames

Ch 14: PySpark Transformations - 3

- ✓ Filtering DataFrame Records
- ✓ Removing Duplicate Records
- ✓ Sorting and Limiting Records
- ✓ Filtering Null Values
- ✓ Grouping and Aggregating
- ✓ Pivoting and Unpivoting
- ✓ Conditional Expressions

Ch 15: Medallion Architecture

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

Ch 16: Delta Lake - 1

- ✓ Storage Layer
- ✓ Delta Table API
- ✓ Deleting Records
- ✓ Updating Records
- ✓ Merging Records
- ✓ History and Time Travel

Ch 17: Delta Lake – 2 (SCD)

- ✓ Schema Evolution

- ✓ Delta Lake Data Files
- ✓ Deleting and Updating Records
- ✓ Merge Into
- ✓ Table Utility Commands
- ✓ Exploratory Data Analysis
- ✓ Incremental Loads
- ✓ Old History Retention
- ✓ Delta Transaction Log

Ch 18: Widgets

- ✓ Text Widgets
- ✓ User Parameters
- ✓ Manual Executions
- ✓ Lake Bridge
- ✓ Databricks BridgeOne

Ch 19: Lake Flow Jobs

- ✓ Worksflows & 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 20: Databricks Tuning

- ✓ How Spark Optimizes your Code
- ✓ Lazy Evaluation
- ✓ Explain Plan
- ✓ Inspecting Query Performance
- ✓ Caching, Data Shuffling
- ✓ Broadcast Joins
- ✓ When to Partition
- ✓ Data Skipping
- ✓ Z Ordering
- ✓ Liquid Clustering
- ✓ Spark Configurations

Ch 21: 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 22: Spark Structured Streaming

- ✓ Streaming Simulator Notebook
- ✓ Micro-batch Size
- ✓ Schema Inference and Evolution
- ✓ Time Based Aggregations, Watermarking
- ✓ Writing Streams
- ✓ Trigger Intervals
- ✓ Delta Table Streaming Reads, Writes

Ch 23: Auto Loader

- ✓ Reading Streams with Auto Loader
- ✓ Reading a Data Stream
- ✓ Manually Cancel your Data Streams
- ✓ Writing to a Data Stream
- ✓ Workspace Modules

Ch 24: Lake Flow Declarative Pipelines

- ✓ Delta LIVE Tables
- ✓ Data Generator Notebook
- ✓ Pipeline Clusters
- ✓ Databricks CLI
- ✓ Data Quality Checks
- ✓ Streaming Dataset "Simulator"
- ✓ Streaming Live Tables

Ch 25: Security: ACLs

- ✓ Overview of ACLs
- ✓ Adding a New User to our Workspace
- ✓ Workspace Access Control
- ✓ Cluster Access Control
- ✓ Groups & LakeBridge

Ch 26: Realtime Project 2 @ Ecommerce / Banking / Sales

- ✓ Detailed Project Requirements
- ✓ Project Solutions
- ✓ Project FAQs
- ✓ Interview Questions & Answers
- ✓ Resume Guidance (1:1)

Module 3: Snowflake (Cloud ETL, DWH)

Ch 1: Introduction to Snowflake

- ✓ Database, DWH Introduction
- ✓ Cloud Data Warehouse
- ✓ Cloud DWH Implementations
- ✓ Snowflake Cloud Intro
- ✓ Snowflake: SaaS Platform

Ch 2: Snowflake Concepts

- ✓ Snowflake Account (Cloud)
- ✓ Snowflake Components
- ✓ Snowflake Editions, Credits
- ✓ Snowflake Editions
- ✓ Virtual Private Edition (VPS)
- ✓ Snowflake Pricing

Ch 3: Architecture, Warehouse

- ✓ Compute Architecture
- ✓ Shared Disk Architecture
- ✓ CPU & Memory in Clusters
- ✓ Database Query & Data Cycle
- ✓ ColumnStore, Virtual Warehouse
- ✓ Classic UI with Snowflake
- ✓ Massively Parallel Processing

Ch 4: Snowflake DB & Tables

- ✓ DB Objects and Hierarchy
- ✓ DB Creation with Snowflake
- ✓ Snowflake Tables and Usage
- ✓ Retention Time, Connections
- ✓ Permanent, Transient Types
- ✓ CREATE TABLE AS SELECT

Ch 5: Time Travel, Recovery

- ✓ Time Travel in Snowflake
- ✓ Invoking Time Travel Feature
- ✓ Timestamp, Offset, Query ID
- ✓ Data Recovery, TIMESTAMP
- ✓ Fail Safe and UNDROP, OFFSET
- ✓ Transient Tables, Real-time

Ch 6: Schemas and Session Context

- ✓ Schema Creation Usage
- ✓ Permanent, Transient Schemas
- ✓ Managed Schemas in Snowflake
- ✓ Invoking Schemas & Cloning
- ✓ Session Context & Schema
- ✓ Data Loading with GUI

Ch 7: Constraints & Data Types

- ✓ Constraints & Validations
- ✓ NULL, NOT NULL Properties
- ✓ Keys & Constraints, Usage
- ✓ Inline, Out Of LineConstraints
- ✓ ENFORCED Constraints
- ✓ Snowflake Data Types

Ch 8: Snowflake Cloning

- ✓ Cloning with Snowflake
- ✓ Zero Copy, Schema Cloning
- ✓ Snapshot, Metadata
- ✓ Accessing, Clone
- ✓ Storage & Metadata Layer
- ✓ Real-time Considerations

Ch 9: Snowflake Procedures

- ✓ Procedures and Functions
- ✓ SQL and JavaScript & CALL
- ✓ Transactions & Injection
- ✓ sqlText:command
- ✓ Cursoring Data and Operations
- ✓ Dynamic DML with SPs
- ✓ RETURN, RETURNS Statements

Ch 10: Security Management

- ✓ Security with Snowflake
- ✓ Users & Roles in Snowflake
- ✓ Privileges and Groups
- ✓ Organization, Account, Users
- ✓ Creating, Using Roles, Users
- ✓ System Defined Roles Usage
- ✓ Role Hierarchy, Dependency
- ✓ RBAC & DAC in Real-time

Ch 11: Snowflake Transactions

- ✓ Transaction ACID Properties
- ✓ Implicit, Explicit and Auto
- ✓ Durability and Data Storage
- ✓ current transaction() Usage
- ✓ to_timestamp_ltz and Usage
- ✓ Failed Transactions with SPs
- ✓ Transactions and SPs
- ✓ Scoped & INNER Transactions

Ch 12: Snowflake Streams & Audits

- ✓ Snowflake Streams & Usage
- ✓ Streams and DML Auditing
- ✓ Snapshot Creation, Offset
- ✓ METADATA Options & Streams
- ✓ Auditing DML Operations
- ✓ Data Flow & Snowflake Streams
- ✓ Streams on Transient Tables

Ch 13: Snowflake Tasks, Partitions

- ✓ Tasks, Serverless Compute
- ✓ Tasks Tree: Root and DAG
- ✓ Tasks Schedules and RESUME
- ✓ User & Snowflake Managed
- ✓ CRON Syntax with Tasks
- ✓ Virtual Warehouse Concepts
- ✓ Multi Cluster Warehouse

Ch 14: SnowSQL and Variables

- ✓ SnowSQL Configurations
- ✓ DDL, DML & SELECT
- ✓ SnowSQL Command Line
- ✓ Variables and Batch Process
- ✓ DECLARE, LET, BEGIN & END
- ✓ EXECUTE IMMEDIATE, FOR
- ✓ Creating Virtual Warehouse
- ✓ Writing Output to Files

Ch 15: Snowflake Partitions, Stages

- ✓ Snowflake Partitions, Use
- ✓ Micro Partition with DML, CDC

- ✓ Cluster Key, Depth and Overlap
- ✓ Internal Partition Types & Usage
- ✓ List, Range and Hash Partitions
- ✓ Snowflake Stages, Types
- ✓ Internal and External Stages
- ✓ COPY Command, Bulk Loads

Ch 16: Azure & External Stages

- ✓ Azure Storage Account, BLOB
- ✓ SAS: Shared Access Signature
- ✓ Using SAS Key and FILE PATH
- ✓ Azure Storage with BLOB
- ✓ COPY INTO Command Usage
- ✓ Snowflake Patterns & RegEx
- ✓ File Formats: Creation, Usage

Ch 17: Snow Pipes & Incr Loads

- ✓ SnowPipe Incremental Loads
- ✓ Azure Queues & Integrations
- ✓ Azure Active Directory
- ✓ External Stage, Enterprise AD
- ✓ Snow Pipes and Data Loads
- ✓ Incremental Data Loads
- ✓ File Format with Reg Expr

Module 4: Power BI

Ch 1: Power BI Intro, Installation

- ✓ Power BI & Data Analysis
- ✓ 5 Design Tools, 3 Techniques
- ✓ 2 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, Fil 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
- ✓ PL 300 Exam (Microsoft Certified Data Analyst) Guidance

Module 5: ERWIN

Ch 1: Introduction

- ✓ Data Modeling Concepts
- ✓ Data Modeling Methods
- ✓ Typographical Conventions
- ✓ ERWIN Tool Installations

Ch 2: Information Systems, Data Modeling

- ✓ Data Modeling Concepts
- ✓ Data Modeling Sessions
- ✓ Session Roles
- ✓ IDEFX1 Modelling Methodology

Ch 3: Modeling Architecture

- ✓ Modeling Architecture
- ✓ Logical Modeling
- ✓ Physical Modeling
- ✓ Entity Relationship Diagrams
- ✓ Key Based Models
- ✓ Transformation Models

Ch 4: Logical Modeling

- ✓ Local Models Construction
- ✓ ER Diagrams
- ✓ Entities & Attributes
- ✓ Many to Many Relationships
- ✓ Design Validations
- ✓ Data Models in Realtime

Ch 5: Key Based Data Models

- ✓ Key Types
- ✓ Entity, Non Key Areas
- ✓ Primary Key Selection
- ✓ Alternate Key Attributes
- ✓ Inversion Entry Attributes

Ch 6: Relationships in ER Models

- ✓ Relationship, Foreign Key Attributes
- ✓ Dependant, Independent Attributes
- ✓ Identifying Relations
- ✓ Non Identifying Relations
- ✓ Role Names

Ch 7: Naming Conventions

- ✓ Entity Names
- ✓ Attribute Names
- ✓ Synonyms
- ✓ Hamonyms
- ✓ Aliases
- ✓ Entity Definitions
- ✓ Definition References
- ✓ Circularity

- ✓ Business Glossary Construction
- ✓ Attribute Definitions
- ✓ Validation Rules
- ✓ Role Names
- ✓ Definition and Business Rules

Ch 8: Relationships

- ✓ Relationship Cardinality
- ✓ Referential Integrity (RI)
- ✓ Additional Relationship Types
- ✓ Many to Many Relationships
- ✓ N-ary Relationships
- ✓ Recursive Relationships
- ✓ Subtype Relationships
- ✓ Inclusive Relationships
- ✓ Exclusive Relationships
- ✓ IDEF1X, IE SubType Notation

Ch 9: Normalization Issues, Solutions

- ✓ Normal Forms Concepts
- ✓ Common Design Problems (CDP)
- ✓ Repeating Data Groups
- ✓ Repeating Attributes
- ✓ Repeating Facts
- ✓ Conflicting Facts
- ✓ Derived Attributes
- ✓ Missing Information
- ✓ Unification
- ✓ Normal Forms Support Levels

Ch 10: Physical Data Models

- ✓ Physical Data Models Concepts
- ✓ Physical Data Models Components
- ✓ Logical versus Physical Data Models
- ✓ Dependant Entities Classifications
- ✓ DBMS Models
- ✓ DWH Models
- ✓ SQL DB Configurations

Module 6: Fabric Data Engineering

Ch 1: Fabric Introduction

- ✓ Need for Fabric, Big Data
- ✓ Fabric Data Engineering Model

- ✓ Fabric Components (Items)
- ✓ Microsoft Fabric: Advantages
- ✓ Cloud Warehouse & AI
- ✓ AI with CoPilot
- ✓ Azure Versus Fabric DWH

Ch 2: Fabric Account, Workspace

- ✓ Need for Fabric Workspace
- ✓ Workspace Creation Process
- ✓ Pins and New Items
- ✓ Item Categorization
- ✓ ETL, Storage, Analytical
- ✓ Streaming, Monitoring
- ✓ Compute & Separation

Ch 3: Fabric Architecture

- ✓ Intelligent Data Foundation
- ✓ Polaris Distributed Engine
- ✓ Stateless & Stateful
- ✓ Cache, Metadata, Xact & Data
- ✓ Fabric Tasks, Inputs & DAG
- ✓ State Machine & Statistics
- ✓ Hot Spot Recovery

Ch 4: Fabric Warehouse

- ✓ Fabric Warehouse Creation
- ✓ Fabric Warehouse Features
- ✓ Fabric Warehouse Properties
- ✓ Fabric Warehouse Limitations
- ✓ DWH Internal Operations
- ✓ Default Schemas & Objects

Ch 5: Fabric Data Types

- ✓ Realtime use of Fabric Houses
- ✓ Exact, Approximate Numbers
- ✓ Date and Time Data Types
- ✓ Fixed & Variable Length
- ✓ Binary & String Data Types
- ✓ Fabric Type Limitations

Ch 6: SSMS Connections

- ✓ Warehouse SQL Connection
- ✓ Database Engine Server
- ✓ Multi Factor Authentication

- ✓ Warehouse Artifacts
- ✓ Executing .SQL Scripts
- ✓ Testing Fabric Artifacts

Ch 7: Fabric Caching

- ✓ Fabric Caching Process
- ✓ In-memory Cache, Disk Cache
- ✓ Cache Types: LRU /MRU
- ✓ Cold Cache / Cold Run
- ✓ Realtime use of Caching
- ✓ Performance Advantages
- ✓ Warehouse Optimizations

Ch 8: Fabric Statistics

- ✓ Query Engine Options
- ✓ Statistics Types
- ✓ Leverage Statistics
- ✓ Auto, Manual Statistics
- ✓ Update Statistics
- ✓ Statistics Consistency
- ✓ Statistics Lists & Reports

Ch 9: Time Travel

- ✓ Continuous Data Protection
- ✓ Data Storage, Retention
- ✓ FOR TIMESTAMP AS OF
- ✓ Time Travel Scenarios
- ✓ Time Travel Implementation
- ✓ Time Travel on Queries
- ✓ Time Travel Limitations

Ch 10: Aggregated Data Store

- ✓ Options for Data Aggregations
- ✓ Save As table, Save As View
- ✓ Single Table Aggregations
- ✓ Multi Table Aggregations
- ✓ Dynamic Conditions
- ✓ Parameterized Aggregations

Ch 11: Zero Copy Cloning

- ✓ User Layer, Storage Layer
- ✓ Cloning & Parquet Files

- ✓ Synapse Data Warehouse
- ✓ Data History Retention
- ✓ Point In Time , Schema Level
- ✓ Zero Copy Cloning Limitations

Ch 12: Fabric Security

- ✓ Workspace Security
- ✓ Warehouse Security
- ✓ Item Security & Roles
- ✓ Adding AD Users
- ✓ Item Security Limitations
- ✓ MFA & Client Security

Ch 13: Fabric Data Factory

- ✓ ETL Implementation Options
- ✓ Need for Fabric Data Factory
- ✓ ETL Operations in FDF
- ✓ Data Sources, Transformations
- ✓ Data Destinations (Sinks)
- ✓ Creating Pipelines

Ch 14: Fabric Pipelines

- ✓ Activities and Connections
- ✓ Gateways & OnPrem Access
- ✓ Data Sets & Activity Sets
- ✓ Data Activator & Alerts
- ✓ Run ID & Monitoring
- ✓ Pipeline Creation, Verification

Ch 15: Fabric Pipelines Design

- ✓ Creation Options for Pipelines
- ✓ Azure SQL DB Data Loads
- ✓ Creating Data Sets
- ✓ RRR Transformations
- ✓ Copy Command Usage
- ✓ Internal Staging (Workspace)

Ch 16: Fabric Aggr Data Loads

- ✓ Aggregation Scenarios
- ✓ Creating Views in TSQL
- ✓ Using Views in FDF Pipelines
- ✓ Using Pipeline Editor

- ✓ Data Loads to Warehouse
- ✓ Pipeline Verifications

Ch 17: ETL Staging

- ✓ Staging : Advantages
- ✓ Caching & Storing Concept
- ✓ Staging Types in Fabric
- ✓ Workspace & External
- ✓ External Stages in Pipelines
- ✓ Compressions & Advantages
- ✓ Pipeline Trigger, Monitor

Ch 18: OnPrem Gateways

- ✓ Need for On_Premi Gateway
- ✓ Installing & Configuring
- ✓ Authentication, Usage
- ✓ OnPremises Connections
- ✓ Pipelines for Data Loads
- ✓ Warehouse Data Storage
- ✓ Data Refresh with Gateways

Ch 19: Fabric Lakehouse

- ✓ Fabric Lakehouse, AI
- ✓ Files and Tables Storage
- ✓ Data Sources: Parquet Files
- ✓ Transformation Options
- ✓ Direct Lake & AI
- ✓ Lakehouse with AI
- ✓ Lakehouse Real time Use

Ch 20: Lakehouse File Loads

- ✓ Creating Lakehouse
- ✓ Copy Data Wizard
- ✓ Azure SQL Database Source
- ✓ File Data Loads in Lakehouse
- ✓ Concurrency & Batch Count
- ✓ Pipeline Execution Tests
- ✓ Pipeline Monitor Check

Ch 21: Aggregated Data Loads

- ✓ Aggregated Data Store
- ✓ Plan & Design Aggregations

- ✓ Testing Aggregations
- ✓ Pipelines for Data Compute
- ✓ Data Copy Options
- ✓ Pipeline Optimizations
- ✓ Data Loads and Verification

Ch 22: MultiTable Loads in LH

- ✓ Table Loads Connections
- ✓ Data Load in Lakehouse
- ✓ Using Copy Data Wizard
- ✓ Data Store in Lakehouse
- ✓ View Run History, Executions
- ✓ SQL End Points & Access
- ✓ Lakehouse Schemas

Ch 23: Lakehouse Visual Queries

- ✓ Visual Query Interface
- ✓ Visual Editor & Tables / Views
- ✓ Merge, Remove, Sort Tfns
- ✓ Data Preview, Save As Table
- ✓ Save As View : Advantages
- ✓ Using Schemas, Identifiers
- ✓ TDS Packets & Transfer Units

Ch 24: File Explorer

- ✓ Installing One Lake Explorer
- ✓ Autocreation of Folders
- ✓ Workspace Directories
- ✓ Warehouse Directories, Logs
- ✓ Lakehouse Folders, Files
- ✓ Lakehouse Uploads
- ✓ Explorer Tool Limitations

Ch 25: Power Query Level 1

- ✓ Power Query Concept
- ✓ Need for Power Query
- ✓ Data Flow Gen 1
- ✓ Data Flow Gen 2, AI
- ✓ Power Query Items
- ✓ Differences with Copy Activity
- ✓ ETL, ELT Process with AI

Ch 26: Power Query Level 2

- ✓ Data Flow Gen2 Operations
- ✓ PQ Online Editor
- ✓ Working with Binary Content
- ✓ Detailed Data Options
- ✓ Data Cleansing & CoPilot
- ✓ Step Names, Aggregations
- ✓ Warehouse Data Loads

Ch 27: Power Query Level 3

- ✓ Binding Power Query Steps
- ✓ Edit / Delete Steps
- ✓ Optimizing Power Query
- ✓ ETL & ELT with Power Query
- ✓ Advanced Editor
- ✓ M Language Expressions
- ✓ Duplicate / Reference Queries

Ch 28: Fabric Notebooks

- ✓ Need for Notebooks
- ✓ Fabric Notebook Types
- ✓ Get / Prep / Analyze
- ✓ Sessions, Markdown Folding
- ✓ Standard, High Concurrency
- ✓ Magic Command
- ✓ Freeze Cells

Ch 29: Spark SQL Notebooks

- ✓ Creating Environment
- ✓ Creating Spark Clusters
- ✓ Spark Cluster Compute
- ✓ SQL Analytics in Notebooks
- ✓ Visual Query Vs SQL
- ✓ Cell Execution Options
- ✓ Magic Command Usage

Ch 30: PySpark Notebooks

- ✓ Creating / Using Environment
- ✓ PySpark Notebook Sessions
- ✓ Reading Source Data
- ✓ Data Prep & Aggregations
- ✓ Data Loads, Analytics
- ✓ Cell Execution Options
- ✓ Markdown Cells

Ch 31: StreamHouse, KQL

- ✓ Need for Stream House
- ✓ Auto creation of KQL
- ✓ Manual KQL Databases
- ✓ Verification & Usage
- ✓ Differences with Warehouse
- ✓ Differences with Lakehouse

Ch 32: KQL Query Sets

- ✓ KQL Database Extraction
- ✓ File Imports - on Premises
- ✓ Metadata Edit Options
- ✓ Query Analytics
- ✓ Exports, Visualizations
- ✓ Query Sets Versus Notebooks

Ch 33: Fabric Data Activator

- ✓ Need for Alerts, Notifications
- ✓ Fabric Data Activator Options
- ✓ Alert Conditions, Thresholds
- ✓ Email Notifications
- ✓ Events & Notifications
- ✓ Edit / Enable / Disable

Ch 34: Model Layouts

- ✓ Need for Layouts with AI
- ✓ Creating Model Layouts
- ✓ Adding Refences, Keys
- ✓ Power BI Semantic Models
- ✓ Report Items, CoPilot
- ✓ Using Power BI Desktop

Module 7: AWS Data Engineering

Ch 1: LINUX Introduction

- ✓ Client-Server Architecture
- ✓ GUI vs CLI
- ✓ Navigating through CLI
- ✓ Basic commands
- ✓ File System Hierarchy
- ✓ Help commands

Ch 2: File Hierarchy System

- ✓ Relative Path Concepts
- ✓ Absolute Path Concepts
- ✓ Common File Types
- ✓ Regular files
- ✓ Directories, Links
- ✓ Realtime Usage

Ch 3: File Management

- ✓ Create Files, Directories
- ✓ touch and mkdir
- ✓ Directory Operations
- ✓ Commands & Usage
- ✓ File Editing Options
- ✓ Text Editors (vim)

Ch 4: Basic User Management

- ✓ User Login Activity
- ✓ Viewing login records
- ✓ Local User Authentication
- ✓ /etc/passwd, /etc/shadow
- ✓ useradd, usermod, userdel
- ✓ Custom config & Profiles

Ch 5: Cloud Computing

- ✓ Cloud Architecture & Use
- ✓ Cloud Computing Concepts
- ✓ Cloud Implementation Models
- ✓ Public, Private, and Hybrid
- ✓ AWS Cloud: Properties
- ✓ AWS Cloud: Advantages
- ✓ AWS Cloud: Usage Scope

Ch 6: AWS Concepts

- ✓ AWS Free Tier Account
- ✓ Account setup
- ✓ AWS Initial Configuration
- ✓ AWS Global Infrastructure
- ✓ Overview of Regions
- ✓ Availability Zones, Edges
- ✓ AWS Console Options

Ch 7: Compute

- ✓ Creating EC2 Instances
- ✓ Instance types, AMIs

- ✓ Instance Launch Options
- ✓ Security Groups, Ports
- ✓ SSH Overview, Key Pairs
- ✓ Key pair creation and SSH
- ✓ Private vs Public vs Elastic IP

Ch 8: Security & IAM

- ✓ IAM Introduction
- ✓ Core IAM Architecture
- ✓ Managing Users & Groups
- ✓ Creating and managing IAM
- ✓ Group Policies, Inline Policies
- ✓ Difference and use cases
- ✓ AWS Cloud Shell, IAM

Ch 9: EC2 Instance Storage

- ✓ EBS : Elastic Block Store
- ✓ Managing EBS Volumes
- ✓ Volume Usage Options
- ✓ EBS Snapshots & Usage
- ✓ Cross-AZ, Replication
- ✓ EBS Encryption
- ✓ Amazon Machine Images

Ch 10: S3 Storage Service

- ✓ S3 Buckets and Objects
- ✓ S3 Usage Management
- ✓ S3 Versioning, Policies
- ✓ Access Control
- ✓ Static Website Hosting
- ✓ S3 Storage Classes
- ✓ Automation,EFS Concepts

Ch 11: Cloud Network & VPC

- ✓ Introduction to Networking
- ✓ CIDR : Notation, Usage
- ✓ Public, Private Subnets
- ✓ Subnet Creation Options
- ✓ Public and Private VPCs
- ✓ VPC setup & Configuration

Ch 12: Cost Management

- ✓ AWS Budgets Overview
- ✓ Budget Management

- ✓ Cost Management Tools
- ✓ AWS Cost Explorer
- ✓ Cost / Pricing Reports
- ✓ Real-time Strategies

Ch 13: CloudWatch

- ✓ Metrics
- ✓ Dashboards
- ✓ Alarms
- ✓ Logs
- ✓ Events (basics)

Ch 14: AWS Kinesis - 1

- ✓ Amazon Kinesis
- ✓ Realtime Data Streaming
- ✓ Amazon Kinesis Data streams
- ✓ Creating Data Stream
- ✓ Enhanced Fan-Out
- ✓ Lambda function & Kinesis

Ch 15: AWS Kinesis - 2

- ✓ Kinesis Firehose
- ✓ Data Firehose Stream
- ✓ Firehose – Transformations
- ✓ Firehose with Lambda
- ✓ ETL Implementations
- ✓ Data Streaming

Ch 16: RDS DB Database - 1

- ✓ Database on EC2 instance
- ✓ Introduction to RDS
- ✓ RDS Networking and Subnet
- ✓ Create a VPC for RDS
- ✓ RDS Subnet Group
- ✓ Create an RDS Instance
- ✓ View an RDS Instance

Ch 17: RDS DB Database - 2

- ✓ RDS Usage in OLTP
- ✓ RDS Backups and Snapshots
- ✓ Restore RDS from Backup
- ✓ Share RDS Snapshots
- ✓ RDS Encryption in Transit
- ✓ Delete an RDS Instance

Ch 18: RDS DB Database - 3

- ✓ Authenticating to RDS
- ✓ Credentials, IAM
- ✓ Secrets Manager
- ✓ RDS Parameter Groups
- ✓ RDS Proxy, Multi-AZ RDS
- ✓ RDS Read Replicas

Ch 19: Amazon Redshift - 1

- ✓ Redshift overview
- ✓ Redshift Serverless
- ✓ Provisioned Cluster
- ✓ Architecture Overview
- ✓ Clusters & Nodes
- ✓ Create Redshift Cluster
- ✓ Access Redshift Cluster
- ✓ Query Editor, Node Types

Ch 20: Amazon Redshift - 2

- ✓ Storage, Resizing Methods
- ✓ Snapshots & Sharing
- ✓ Resizing Snapshots
- ✓ Redshift – VACCUM
- ✓ Load Data From S3
- ✓ Unload Data
- ✓ Federated Queries
- ✓ Redshift Spectrum

Ch 21: Amazon Redshift - 3

- ✓ AWS RedShift Security
- ✓ AWS RedShift Connections
- ✓ Authentication Types
- ✓ Optimization Options
- ✓ Data Load Operations
- ✓ Data Load Requirements
- ✓ Transformations with ELT

Ch 22: Amazon Redshift - 4

- ✓ Need for AWS Lamda
- ✓ Need for AWS Glue
- ✓ Need for AWS Athena
- ✓ AWS Redshift Tuning
- ✓ AWS RedShift Connections

Ch 23: Lambda Introduction

- ✓ What is serverless
- ✓ AWS Lambda Introduction
- ✓ AWS Lambda for Python
- ✓ AWS Lambda Python code
- ✓ Packages and Deployments
- ✓ AWS Lambda configuration
- ✓ AWS Lamda Settings

Ch 24: Lambda Implementation

- ✓ AWS Lambda Layers
- ✓ Python with Lamda
- ✓ Java with Lambda
- ✓ AWS Lambda - S3
- ✓ Event Notifications in AWS
- ✓ API Gateway, Aliases
- ✓ AWS Lambda – Snapstart

Ch 25: AWS Athena

- ✓ Athena overview
- ✓ Query data using Athena
- ✓ Federated Queries
- ✓ Performance and cost
- ✓ Workgroups
- ✓ Workgroups (Hands-on)
- ✓ Querying with Athena

Ch 26: AWS Glue - 1

- ✓ AWS Glue overview
- ✓ Need for AWS Glue
- ✓ AWS Glue Usage Scope
- ✓ Setting up Crawlers
- ✓ AWS Glue Costs
- ✓ AWS Budgets

Ch 27: AWS Glue - 2

- ✓ Stateful vs Stateless
- ✓ Stateless Data Ingesting
- ✓ Glue Transformations (ETL)
- ✓ Glue Data Quality
- ✓ Glue workflows
- ✓ Scheduling Crawlers & ETL

Ch 28: AWS Glue - 3

- ✓ Default Classifiers
- ✓ Custom Classifiers
- ✓ Glue Triggers
- ✓ Run the pipelines using CloudFormation

Ch 29: EMR & Spark

- ✓ EMR concepts
- ✓ EMR in AWS Big Data
- ✓ Spark Concepts
- ✓ PySpark & ETL
- ✓ PySpark & DWH
- ✓ End to End Integrations

Module 8: End to End Project

- 👉 Project Requirement (Ecommerce / Banking)
- 👉 Project Solution (Detailed)
- 👉 Project FAQs, Resume Guidance