

SQL School™

Quality Training Assured

Complete Practical; Real-time Job Oriented Training

Data Analyst Training

Trainer : Mr. Sai Phanindra T [18+ Yrs of Real-time Exp]. Profile @ [linkedin.com/in/saiphanindra](https://www.linkedin.com/in/saiphanindra)

Training Module		Duration
Module 1	SQL Basics, T-SQL Queries	3 W
Module 2	Power BI & Big Data Analytics (DA 100) [Power BI Cloud Service, Report Server, REST API, Dashboards, Power Query, DAX, Real-time Project, Resume Guide]	4 W
Total Duration		7 W

Module 1: Database Basics, SQL, T-SQL Queries

Chapter 1: DATABASE INTRODUCTION

Databases Introduction & Purpose; Database Types : OLTP, DWH, OLAP; Microsoft SQL Server Advantages, Use; SQL Server Components and Usage; Microsoft SQL Server - Career Options; Developer, DBA, Data Engineer; Data Analyst, Data Scientist Careers; SQL : Purpose, Real-time Usage Options; SQL Versus Microsoft T-SQL [MSSQL]; Course Plan, Real-time Project, Resume; 24 x 7 Online Lab for Remote DB Access; Versions and Editions of SQL Server; SQL Server Pre-requisites : S/W, H/W; System Configuration Checker Tool;

Chapter 2: SQL SERVER INSTALLATIONS

SQL Server & SSMS Installation Plan; SQL Server Pre-requisites : S/W, H/W; SQL Server 2022 & 2019 Installation; Database Engine Feature, OLTP; Instances : Types and Properties; Default Instance, Named Instances; Service and Service Account Use; Authentication Modes and Logins; Windows Logins and SQL Logins; SQL Server Management Studio; Server Connections with SSMS Tool; Local and Remote Connections; System Databases: Master and Model; MSDB, TempDB, Resource Databases;

Chapter 3: SSMS Tool, SQL BASICS - 1

Creating Databases: Files [MDF, LDF]; Creating Tables in User Interface; Data Insertion & Report in User Interface; SQL : Purpose and Real-time Usage; SQL Versus T-SQL : Basic Differences; DDL, DML, SELECT, DCL and TCL; Creating SSMS Sessions : SPID; Create, Connect Databases using SQL; Creating Tables with INT, CHAR; Data Storage, Inserts - Basic Level; Table Data Verifications with Select; SELECT Statement for Table Retrieval; Identify Databases and Tables; Identify Sessions and Session ID;

Chapter 4: SQL BASICS - 2

Creating Tables: VARCHAR, FLOAT; Single Row Inserts, Multi Row Inserts; Rules for Data Insertion Statements; SELECT with WHERE Conditions; AND and OR Operators Usage; IN Operator and NOT IN Operator; Between, Not Between Operators; LIKE and NOT LIKE Operators; ORDER BY, TOP & OFFSET; Basic Sub Queries with SELECT; UPDATE Statement & Conditions; DELETE & TRUNCATE Statements; ALTER, ADD COLUMN Statements; DROP Statements: Table, Database;

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

Database Objects : Tables and Schemas; Schemas : Group Tables in Database; Schemas : Security Management Object; Creating Schemas & Batch Concept; Using Schemas for Table Creation; Data Storage in Tables with Schemas; Data Retrieval & Usage with Schemas; Table Migrations across Schemas; Import and Export Wizard in SSMS; Data Imports with Excel File Data; Performing Bulk Operations in SSMS; Temporary Tables : Real-time Use; Local and Global Temporary Tables; # and ## Prefix, Scope of Usage;

Chapter 6: CONSTRAINTS & INDEXES BASICS

Constraints and Keys - Data Integrity; NULL, NOT NULL Property on Tables; UNIQUE KEY Constraints: Importance; PRIMARY KEY Constraint: Importance; FOREIGN KEY Constraint: Importance; REFERENCES, CHECK & DEFAULT; Candidate Keys and Identity Property; Database Diagrams and ER Models; Relationships Verification and Links; Indexes : Basic Types and Creation; Index Sorting and Search Advantages; Clustered and NonClustered Indexes; Primary Key and Unique Key Indexes; Need for Indexes - working with Keys;

Case Study 1: Database Design with Tables, Constraints, Keys & Relations

Chapter 7: JOINS and TSQL Queries

JOINS - Table Comparisons Queries; INNER JOINS For Matching Data; OUTER JOINS For (non) Match Data; Join Queries with "ON" Conditions; Left Outer Joins - Example Queries; Right Outer Joins - Example Queries; FULL Outer Joins: Realtime Scenarios; CROSS JOIN and CROSS APPLY; One-way, Two way Data Comparisons; Using Table Aliases & Column Aliases; Optimizing Join Queries with Indexes; Choosing Correct Comparison Columns; Joining Unrelated Tables in TSQL; Self References, Self Joins in TSQL;

Chapter 8: GROUP BY in T-SQL, Views Basics

GROUP BY: Importance, Realtime Use; GROUP BY Queries and Aggregations; Group By Queries with Having Clause; Group By Queries with Where Clause; Using WHERE and HAVING in T-SQL;

Group By with Joins in TSQL; Query Execution Order & Aliases; Joins with Sub Queries, Formatting; Database Objects: Overview & Usage; Views: Types, Usage in Real-time; Creating, Executing & Verifying Views; Storing Queries in Database Views; Excel Analytics - Joins & Views; Excel Office Data Connection Reports;

Chapter 9: Functions, Procedures Basics

Functions with SQL Server, TSQL; Scalar, Inline, Table Functions; Variables: Declare, Real-time Use; Creating, Executing Functions; Functions for Computations; Functions for Parameterized Joins; Procedures: Usage in Real-time; Using Parameters in SQL Server; Parameterized Joins in TSQL; Compilation with Stored Procedures; sp_help, sp_helptext, sp_helpindex; sp_helpdb, sp_rename, sp_recompile; System Views & Metadata Audits;

Chapter 10: TRIGGERS & TRANSACTIONS

Triggers - Purpose, Real-world Usage; FOR/AFTER Triggers - Real time Use; INSTEAD OF Triggers - Real time Use; INSERTED, DELETED Memory Tables; Using Triggers for Data Replication; Enable Triggers and Disable Triggers; Database Level, Server Level Triggers; Transactions : Types, ACID Properties; Transaction Types and AutoCommit; EXPLICIT & IMPLICIT Transactions; COMMIT and ROLLBACK Statements; Batch Concept and Go Statement; Open Transactions in Real-time; Using Conditional Commits, Rollbacks;

Chapter 11: Normal Forms, Cursors

First Normal Form and Atomicity; Third Normal Form and MVD Property; Boycee-Codd Normal Form : BNCF; Fourth Normal Form : Advantages; Self Reference Keys and 4 NF Usage; 1:1, 1:M, M:1, M:M Relationship Types; Linked Servers Configurations, RPC; Linked Servers, Remote Joins in TSQL; 2 Part, 3 Part, 4 Part Naming Styles; Remote Joins Queries and Aliases; Cursors - Basics, Data Operations; Cursors - Life Cycle & Declaration; Cursors Types, FETCH Operations; Cursors - Deallocate, Real-world Use;

Chapter 12: TSQL Queries, SQL Analytics

IIF() Function with SELECT Query; CASE. WHEN..THEN..ELSE; WHEN MATCHED, NOT MATCHED; Incremental Loads, Upsert Statement; Stored Procedures: Merge Statement; UNION and UNION ALL Operator; Window Functions: Rank, Dense Rank; Row_Number, PartitionBy in TSQL; Duplicate Row Identification, Deletion; Grouping, Cube, Rollup, Lag, Lead; Data Types: Numerical, Date, Time; Data Types: Characters, Real, Float; Date & Time Functions, DateAdd; String Functions, Concat, SubString;

Case Study 2: Joins with Group By, Sub Queries, Views, Excel Analytics

Module 2: Power BI (Reports, Cloud, Server, Analytics)

Chapter 1 : POWER BI INTRODUCTION

Power BI : Introduction to Analytics; Power BI Tools Suite, Advantages; Power BI : Career Options, Plan; Power BI Developer Job Role; Microsoft Data Analyst Job Role; Big Data Analyst Job Role; Power BI Data Analyst (PL 300); ;Data Engineer*, Power BI (DP 500 *); Artificial

Intelligence (AI) Visuals; AI Enabled Power BI Features; Course - Lab Plan with Design Tools; Need for Power Query & DAX; Power BI Licensing Types; Power BI – Advantages;

Chapter 2 : BASIC REPORT DESIGN

Power BI Eco System: Architecture; Data Sources & Types in Real-world; Report Types: Interactive, Paginated; Analytical Reports & Mobile Reports; Data Sources : File, Database, Web; Visualizations : Report Shapes; Power BI Design Tools, Requirements; Power BI Desktop Tool : Installation; Desktop Interface: Canvas; Data View, Report View; In-Memory Xvelocity Database; Labels, Legend, Category; Local Store: PBIX & PBIT Files; Data Points and Tooltips;

Chapter 3 : Visual Interaction, Visual Sync

Visual Interaction with Data Points; Disabling / Enabling Interactions; Edit Interactions: Format Options; Spotlight and Focus Mode; Report Export to CSV, PDF; Tooltip Options and Usage; Working with Pages in PBI; Rename, Duplicate, Hide Pages; Slicer Visual : Real-time Usage; Orientation, Selection Properties; Slicer Settings : Tiles & Slider; Single & Multi Select, Header; Number, Text, Show Summary; Date Slicer and Value Selections; Slicer List, Dropdowns & Clear; Visual Sync Limitations with Slicer;

Chapter 4 : Grouping & Hierarchies

Grouping : Visuals with Pdf Sources; List Grouping and Binning Options; Grouping Static / Fixed Data Values; Grouping Dynamic / Changing Data; Bin Size and Bin Limits (Max, Min); Bin Count and Grouping Options; Group with Bins & Clustering; Group, Layer with Selection Pane; Creating Hierarchies in Power BI; Independent, Dependant Drill-Down; Drill-Down with Interactive Reports; Conditional Drilldowns, Data Points; Drill Up Buttons and Operations; Expand & Show Next Level; Dynamic Data Drills Limitations;

Chapter 5 : Filters & Bookmarks

Filters : Types and Usage in Real-time; Visual Filter, Page Filter, Report Filter; Basic, Advanced and TOP N Filters; Category and Summary Level Filters; Data / Drill Options, DrillThru Filters; Keep All Filters" Options in DrillThru; CrossReport Filters, Include, Exclude; Drill-thru Filters, Page Navigations; Bookmarks : Report Navigations; Buttons, Images with Actions; Selection Pane, Actions, Text URLs; Show Data and See Records; Custom Tooltips, Table Visual; Table Vs Matrix : Drill-downs; Styles, Cell Properties, Databars; Conditional Formatting, Divergent;

Chapter 6 : Big Data Access, Visuals

OLTP Databases, Big Data Sources; Azure Database Access, Reports; Import, Direct Query & Dual Mode; Data Modeling: Do Not Summarize; Data Modeling: Currency, Relations; Power BI Archtiecture, Eco System; Power BI Interface for Reports; Stacked Chart, Clustered Chart; Line Chart, Area Chart, Bar Chart; 100% Stacked Bar & Column Chart; Map Visuals: Tree, Filled, Bubble; Small Multiples, Legends, Axis; Cards, Funnel, Table, Matrix; Scatter Chart : Play Axis, Labels; Waterfall Chart, Multi Row Cards;

Chapter 7 : POWER QUERY LEVEL 1

Power Query M Language Purpose; Power Query Architecture and ETL; Data Types, Literals and Values; Power Query Transformation Types; Table & Column Transformations; Text &

Number Transformations; Date, Time and Structured Data; let, source, in statements @ M Lang; Get Data, Table Creations and Edit; ETL Operations with Power Query; Merge Transformations in Power BI; Join Kinds: Inner, Outer & Apply; Union All Transformation & Appends; Power Query Editor, Step Edits; Close & Apply Options. Report Design;

Chapter 8 : POWER QUERY LEVEL 2

Query Duplicate, Query Reference; Group By and Advanced Options; Aggregations with Power Query; Transpose, Header Promotion; Reverse Rows and Row Count; Data Type Changes & Detection; Replace Columns: Text, NonText; Advanced Query Edit Options; Replace Nulls: Fill Up, Fill Down; Pivot, Unpivot Transformations; Move Column and Split Column; Extract, Format and Numbers; Date & Time Transformations; Derive Year, Quarter, Month, Day; Add Column : Query Expressions; Query Step Inserts and Step Edits;

Chapter 9 : POWER QUERY LEVEL 3

Big Data Loads : Parameter Queries; Creating Parameters in Power Query; Parameter Data Types, Default Lists; Static & Dynamic Lists: List Queries; Convert Tables to Lists, Use Cases; Linking Parameters to Queries; Testing Parameters with Canvas; Multi-Valued Parameter Lists; Creating Lists in Power Query; Converting Lists to Table Data; Invoke Function, Type Conversions; Function Query & Parameter List; Columns From Examples, Indexes; Conditional Columns, Expressions; Disable / Enable Data Loads;

Chapter 10: POWER BI CLOUD - 1

Power BI Cloud Components; App Workspaces, Report Publish; Reports & Related Datasets Cloud; Creating New Reports in Cloud; Report Publish, Report Uploads; Report Edits and New Reports; Report Actions: Downloads; Dataset Usage Options in Cloud; Dashboards Creation and Usage; Pining Visuals and Report Pages; Visual Pin Actions in Dashboards; Dashboard & LIVE Interactions; Media Tiles: Images, Custom Links; Q & A; Pin with Q & A; Standard Visuals;

Chapter 11 : POWER BI CLOUD - 2

Report Actions : Share, Subscribe; Report Actions : Lineage, Embed; Report Actions : Export Options; Report Actions : Public User Access; Dashboard Actions : Share, Subscribe; Dashboard Actions : Themes, Lineage; Dashboard Actions : Share, Subscribe; Favorite, Insights, Embed Code; Gateways Configuration, PBI Service; Gateway Types, Cloud Connections; Gateway Cluster, Add Data Sources; Data Refresh : Manual, Scheduled; Power Query Parameters, Gateways; DataFlows; Lineage, Share, Subscribe, Insights; Performance Inspector & Gateways;

Chapter 12 : POWER BI CLOUD - 3

Workbooks : Excel Online & Pins; Power BI Apps: Creation & Usage; Power BI Segments, Content; Navigation Screens, Audience; App Publish, Verification & Edits; Export, Share & Subscribe; List & Lineage; Power BI Scorecards; Paginated Reports - Design & Usage; Power BI Report Builder Tool; Microsoft Report Builder Tool; Report Builder : Datasets, Charts; Report Builder : Bar Charts, Fields; Report Builder : RDL Files; Paginated Reports : Deployments;

Chapter 13 : DAX Functions - Level 1

DAX : Importance in Real-time; DAX Data Types, Syntax Rules; DAX Measures and Columns; ROW Context and Filter Context; Operators, Special Characters; DAX Functions, Vertipaq Engine; DAX Cheat Sheet : Expressions; Data Analytics with DAX; DAX Measures : Expressions; ISBLANK, IF, IN, SUM; SUMX, AVG, AVERAGEX; Data Models: Fact, Dimensions; Detecting Relations for DAX; Star & Snowflake Schemas; Data Modeling Options in DAX;

Chapter 14 : DAX Functions - Level 2

Quick Measures in Power BI; Average and Filtered Average; Running Totals, EARLIER(); RELATED, COUNTROWS CALCULATE Function Conditions; ALL Members Scope & IN; Account and Time Calculations; Star Rating, DAX Expressions; Data Modeling Options in DAX; 1:1, 1:M and M:1 Relations; Working with Facts & Measures; Modeling : Missing Relations; Relationships & Importance; Modeling : Relation Management; Modeling with Multiple Keys;

Chapter 15 : DAX Functions - Level 3

DAX : Variables and Expressions; Dynamic Expressions, RETURN; Current Value, Previous Value; SELECTED VALUE, Joins; FORMAT Function with DAX; RELATED, Joins in DAX; DAX Expressions with SQL DB; Time Intelligence Functions; Date Dimension : Generation; CALENDAR(), DATESYTD(); TOTALYTD, TOTALQTD; TODAY, DATE, DAY with DAX; SELECTEDVALUE, FORMAT; Date, Time and Text Functions;

Chapter 16: DAX Functions - Level 4

RLS: Row Level Security; Data Models in Power BI Desktop; DAX Roles Creation and Testing; DAX Expressions & Operators; PBIX Uploads: Power BI Cloud; Dataset Security with DAX Roles; Entity Sets and Slicing in DAX; Dataflows with Power BI; Analytical Reports - DAX Usage; Creating Data Models with DAX; Datasets in Excel and Dashboards; Using Excel Analyzer in Power BI; Power BI Data Source in Excel; Connection Strings and Refresh; Analytical Reports;

Chapter 17: Power BI Report Server

Power BI Report Server Config; SQL Server Instance Verifications; Report Server DB, Temp Database; WebService & WebPortal URL; Uploading Interactive Reports; End User Report Share (pdf); Power BI Desktop RS Tool; Interactive Reports: Report Server; Mobile Reports : Design Options; Mobile Reports : Grids, Elements; Mobile Reports : Uploads, Edits; Paginated Reports : Deployments; Paginated Vs Interactive Reports; Paginated Vs Analytical Reports; Paginated Vs Mobile Reports; Power BI Report Server Vs Cloud;

Chapter 18 : Power BI Admin & AI

Power BI Cloud Management; Power BI Admin : Alerts; Workspace Management, Users; Security: Report, Dataset Levels; Security: Dataset, App Levels; Security: Workspace Options; PBI Performance Inspector; Power BI & Artificial Intelligence; Power BI & CoPilot Add-Ins; AI Visuals & Big Data Analytics; Smart Narrative and Q & A; Infographics, Icons and Labels; Key Influencer Visual in Power BI; Metrics Visual, Performance; Paginated Reports Visual;

Chapter 18: Real-time Project [Sales & Customers]

Phase 1 : Basic Report Design

Project Requirement Analysis; Requirement Gathering, FSA; Report Design with Excel; Basic Data Modelling; Infographics, Histograms; Analytics and Formatting;

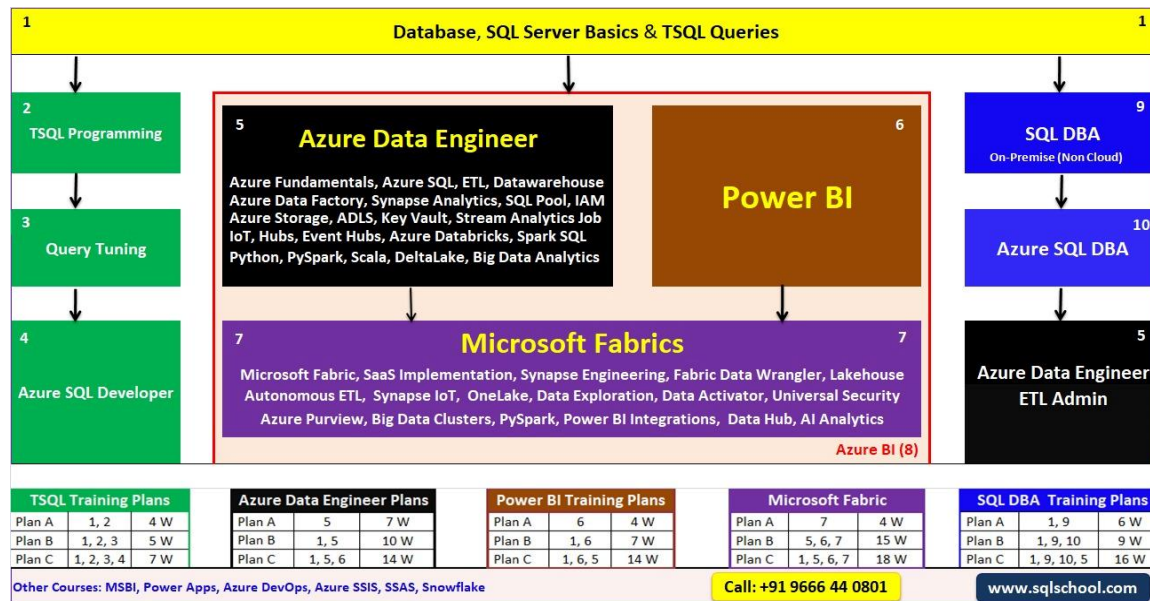
Phase 2: SME Level

Report Design with SQL DB; SQL Database: Joins, Views; ;Dual Storage Mode, SQL Queries; Data Modeling, Power Query; Dynamic Connections, Azure DB; Parameters and M Lang Scripts;

Phase 3: Deployments (Cloud, Server)

DAX Requirements, Analysis; Cloud and Report Server; Custom Visualizations; 3party Visuals & REST API *; Project FAQs and Solutions; One - One Resume, Mock Interview;

Resume, Project Oriented FAQs and Solutions



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