



ANALYTICS ENGINEER

SQL + dbt + SNOWFLAKE + POWER BI

Build, Transform and Visualize Modern Data Pipelines

SQL
Query & Analyze Data

dbt
Transform, Test & Document Data

snowflake
Modern Cloud Data Platform

Power BI
Create Interactive Dashboards

End-to-End Projects

Real-World Use Cases

Best Practices & Data Modeling

Cloud-Based Hands-on Labs

Career-Focused Training

Build Real Projects

- ✓ Modern Data Warehouse
- ✓ dbt Transformations & Data Models
- ✓ Snowflake Data Pipeline
- ✓ Interactive Power BI Dashboards

Target Roles

- ✓ Analytics Engineer
- ✓ Data Analyst (Advanced)
- ✓ BI Developer
- ✓ Data Engineer (Analytics-focused)

Become a Job Ready Analytics Engineer with Snowflake & Power BI

Training Modules:

- Module 1: SQL Concepts & Tuning
- Module 2: Power BI
- Module 3: Python
- Module 4: Snowflake
- Module 5: DBT
- Module 6: End to End Realtime Projects

Course Details:

LIVE Online Training: Highly Interactive; 4 Months Duration

Self-Paced Videos: Detailed, Step by step for faster completion with grip on the subject

Why SQL School?

- ✓ 100% Practical Training
- ✓ Real-Time Projects
- ✓ Daily Assignments & Weekly Feedback
- ✓ Resume & Interview Support
- ✓ Certification Guidance

Who can Enrol:

- ✓ Career Gap Professionals
- ✓ IT & Non-IT Experienced Individuals

DETAILED COURSE CONTENT

Module 1: MSSQL & TSQL

Ch 1: SQL Database Job Roles

- ✓ Database Intro
- ✓ OLTP, DWH, OLAP
- ✓ DBMS Basics
- ✓ Snowflake with Power BI Job Roles

Ch 2: Database Intro & Installations

- ✓ SQL Server Installations
- ✓ Instance & Collations
- ✓ SSMS Tool Installation
- ✓ Connections, Authentications

Ch 3: SQL Basics V1 (Commands)

- ✓ 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
- ✓ DML: Insert, Update, Delete
- ✓ DQL: Select, Fetch
- ✓ Add, Truncate Statements
- ✓ SQL Operators

Ch 5: Data Types & Variables

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

Ch 6: Data Imports

- ✓ Data Imports with Excel
- ✓ Data Imports with CSV
- ✓ Data Types Detection
- ✓ OLE-DB Connections
- ✓ ORDER BY, TOP, OFFSET

Ch 7: Schemas & Batches

- ✓ 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 & Check
- ✓ Primary Key Constraint
- ✓ Foreign Keys, Default
- ✓ DB Diagrams & ER Models

Ch 9: Normal Forms & RDBMS

- ✓ Normal Forms: 1 NF, 2 NF
- ✓ 3 NF, BCNF and 4 NF
- ✓ 1:1, 1:M, M:1 Cardinality
- ✓ Cascading Keys, Self Referencing Keys

Ch 10: Joins & Queries

- ✓ Joins: Table Comparisons
- ✓ Inner Joins & Matching Data
- ✓ Outer Joins: LEFT, RIGHT
- ✓ Full Outer Joins & Aliases
- ✓ Self Joins & Aliases

Ch 11: Sub Queries

- ✓ Basic Sub Queries
- ✓ Aggregations
- ✓ Combining Queries
- ✓ Correlated Sub Queries
- ✓ UNION, UNION ALL

Ch 12: Group By Queries

- ✓ Group By, Distinct
- ✓ GROUP BY, HAVING
- ✓ Cube() and Rollup()
- ✓ Sub Totals & Grand Totals
- ✓ Grouping() & Usage
- ✓ ISNULL, COALESCE

Ch 13: Joins with Group By, Sub Queries

- ✓ 3 Table, 4 Table Joins
- ✓ Join Queries & WHERE
- ✓ Join & Group By, Sub Queries
- ✓ IIF(), CASE Statement
- ✓ EXISTS, NOT EXISTS
- ✓ Query Execution Order

Ch 14: Views & RLS

- ✓ Views: Realtime Usage
- ✓ DML, SELECT with Views

- ✓ WITH CHECK OPTION
- ✓ Row Level Security (RLS)
- ✓ Important System Views

Ch 15: Functions & Queries

- ✓ User Defined Functions
- ✓ Scalar, Table Value Functions
- ✓ Variables & Parameters
- ✓ Date & Time Functions
- ✓ String Functions
- ✓ Aggregated Functions
- ✓ Data Conversion Functions

Ch 16: Advanced SQL & Window Functions

- ✓ Window Functions (Rank)
- ✓ Row_Number, DenseRank
- ✓ Partition By & Order By
- ✓ Lag & Lead Functions
- ✓ Pivot, UnPivot
- ✓ Running Totals
- ✓ Moving Average

Ch 17: Stored Procedures - 1

- ✓ Stored Procedures: Realtime Use
- ✓ Parameters Concept with SPs
- ✓ Procedures with SELECT
- ✓ System Stored Procedures
- ✓ Stored Procedures, Tuning

Ch 18: Stored Procedures - 2

- ✓ Merge Statement (Upsert)
- ✓ Merge with OLTP & DWH
- ✓ Matched and Not Matched
- ✓ Merge & SP Recompilations

Ch 19: Triggers & Automations

- ✓ Need for Triggers in Real-world
- ✓ DDL & DML Triggers
- ✓ For / After Triggers
- ✓ Instead Of Triggers
- ✓ Disabling DMLs Triggers

Ch 20: Transactions & ACID

- ✓ Auto Commit Transaction
- ✓ Explicit Transactions
- ✓ COMMIT, ROLLBACK
- ✓ Checkpoint & Query Blocking

- ✓ READPAST, LOCKHINT
- ✓ TRY...CATCH & Error Handling

Ch 21: SQL Query Performance & Indexing

- ✓ Clustered vs Nonclustered Indexes
- ✓ Index Seek vs Scan
- ✓ Execution Plans
- ✓ SARGable Queries
- ✓ Tuning Queries
- ✓ Avoiding SELECT *
- ✓ Indexing JOIN/WHERE columns
- ✓ Statistics Basics
- ✓ Query Optimization Examples

Ch 22: CTEs & Tuning

- ✓ Common Table Expression
- ✓ CTEs for Data Retrieval
- ✓ CTEs for DML Operations
- ✓ Data Cleansing Techniques
- ✓ Duplicate Detection/Removal

Ch 23: Temp Tables & Query Techniques

- ✓ Local & Global Temp Tables
- ✓ SELECT..INTO Statement
- ✓ Cursor Basics – When to Use & Avoid
- ✓ NULLIF
- ✓ Basic Execution-Plan Reading

Ch 24: Bonus / Advanced Module: SQL Server Internals

- ✓ Database Engine Components
- ✓ Parser, Compiler & Optimizer
- ✓ Parsing and Compilation
- ✓ Memory Manager & IO Managers

Module 2: Power BI

Ch 1: Power BI Intro, Installation

- ✓ Power BI & Data Analysis
- ✓ Power BI Eco System
- ✓ Power BI Design Tools
- ✓ Power BI Installation

Ch 2: Report Design Concepts

- ✓ Basic Report Design (PBIX)
- ✓ Data Points, Spotlight
- ✓ Visual Interactions & Edits
- ✓ Focus Mode, PDF Exports

Ch 3: Grouping & Hierarchies

- ✓ Creating Groups: Lists
- ✓ Creating Groups: Bins
- ✓ Hierarchies & Drill-Downs
- ✓ Drill Up, Conditional DrillDown

Ch 4: 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 5: Filters & Drill Thru

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

Ch 6: Bookmarks, Buttons

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

Ch 7: SQL DB Access & Big Data

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

Ch 8: Power BI Visualizations

- ✓ Charts, Bars, Lines, Area
- ✓ Tree Maps & Axis Items
- ✓ Funnel, Card, Mult-Row Card
- ✓ Pie Charts & Waterfall
- ✓ Scatter Chart, Play Axis
- ✓ Infographics, Classifications

Ch 9: Power Query Transformations - 1

- ✓ Power Query (Mashup)
- ✓ ETL Transformations in PBI
- ✓ Table Combine Options
- ✓ Merge, Union All Options
- ✓ Missing Values, Duplicate Records
- ✓ Wrong Data Types, Outliers
- ✓ Close, Apply & Visualize

Ch 10: Power Query Transformations - 2

- ✓ Group By Transformation
- ✓ Aggregate, Pivot Operation
- ✓ Reverse Rows, Count Rows
- ✓ Data Cleaning, Null Handling
- ✓ Data Type Detection, Change
- ✓ Rename, Replace, Move
- ✓ Fill Up, Fill Down

Ch 11: Power Query Transformations - 3

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

Ch 12: Power Query Transformations - 4

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

Ch 13: Power BI Cloud & Fabric

- ✓ Power BI Cloud, Microsoft Fabric
- ✓ Microsoft Fabric Concepts
- ✓ Fabric One Lake (DWH, LH, etc.)
- ✓ Microsoft Fabric Workspace
- ✓ Power BI Desktop Connections
- ✓ Report Uploads (PBIX)
- ✓ Report Edits, Semantic Models

Ch 14: Power BI Cloud Dashboards

- ✓ Power BI Dashboards
- ✓ Dashboard Creation, Usage
- ✓ Pin Visuals, Pin LIVE Pages

- ✓ Add Image, Video Tiles
- ✓ Q&A & Pin Tiles

Ch 15: Power BI Cloud Operations

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

Ch 16: Power BI Cloud Gateways

- ✓ Data Gateways, Data Refresh
- ✓ Install, Configure Gateways
- ✓ Data Refresh & Scheduling
- ✓ Gateway Optimizations
- ✓ Incremental Refresh
- ✓ Large Dataset Optimization

Ch 17: Power BI Cloud Apps

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

Ch 18: Power BI Report Server, RDL

- ✓ Power BI Report Server
- ✓ RS Config Tool Options
- ✓ Report Database, TempDB
- ✓ Web Service & Server URL
- ✓ Report Builder Tool
- ✓ Paginated Report (RDL)
- ✓ RDL Report Publish

Ch 19: DAX Concepts & Calculations

- ✓ DAX Concepts: Intro & Realtime Need
- ✓ DAX Columns: Creation, Use
- ✓ DAX Measures: Creation, Use
- ✓ DAX Functions: IIF, ISBLANK
- ✓ SUM, CALCULATE Functions

Ch 20: DAX Quick Measures

- ✓ Quick Measures in Power BI

- ✓ Running Totals
- ✓ Star Rating Calculations
- ✓ DAX Measures in Data View
- ✓ DAX in Cloud Reports

Ch 21: Data Modelling

- ✓ Dimensions Tables
- ✓ Fact Tables & DAX Measures
- ✓ Data Models & DAX Joins
- ✓ Star & Snowflake Schemas
- ✓ Many-to-Many Relationships
- ✓ Calculation Groups

Ch 22: DAX Joins, Variables

- ✓ CALCULATEX & Variables
- ✓ COUNT, COUNTA, etc..
- ✓ SUM, SUMX, etc..
- ✓ SELECTED MEMBER
- ✓ Filter Context, RETURN

Ch 23: DAX Models & Calculations

- ✓ VAR, SWITCH, SUMMARIZE
- ✓ TREATAS, USERELATIONSHIP
- ✓ CROSSFILTER, GENERATE
- ✓ RANKX, TOPN, WINDOW
- ✓ OFFSET, INDEX

Ch 24: 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 25: DAX - Row Level Security

- ✓ RLS: Row Level Security
- ✓ Data Modelling & Roles
- ✓ Add Cloud Users & KPIs
- ✓ CoPilot with DAX

Ch 26: DAX – Analytical Reports

- ✓ DAX with Excel
- ✓ Analytical Reports

- ✓ Virtual Cube Concepts
- ✓ Cross Filter Reporting
- ✓ Alerts, Data Activator

Module 3: Python Analytics

Ch 1: Python Introduction

- ✓ Python Introduction
- ✓ Python Versions
- ✓ Python Job Roles

Ch 2: Python Architecture

- ✓ Python Architecture
- ✓ PVM: Python Virtual Machine
- ✓ Compiler
- ✓ Byte Code
- ✓ Execution Process
- ✓ Resource Allocations
- ✓ Python Implementations

Ch 3: Python Installations

- ✓ Python Introduction
- ✓ Python Installations
- ✓ Anaconda Installation
- ✓ Python IDE & Usage
- ✓ Jupyter Notebooks

Ch 4: Python Print Statement

- ✓ Python Print Statement
- ✓ print(), print()
- ✓ Testing Case Sensitivity
- ✓ Single Line print()
- ✓ Multi Line print()
- ✓ print() with single quotations
- ✓ Debug with AI (AI Assistants)

Ch 5: Python Variables

- ✓ Python Variables
- ✓ Assigning values
- ✓ Purpose & Rules
- ✓ Variable Value Reads
- ✓ Multiple Variables & Print()

Ch 6: Python Operators

- ✓ Arithmetic *& Multiplier Operators

- ✓ Python String Literals
- ✓ Single, Double Quotes
- ✓ Format Strings (f string)
- ✓ Comparison, Indexing Operators

Ch 7: Python Data Types

- ✓ Python Data Types
- ✓ Integer, Float, String Data Types
- ✓ Type Casting
- ✓ Type Identification
- ✓ Multi Value Assignments
- ✓ Python Built-In Classes (data types)

Ch 7: Python Lists

- ✓ Creating Python Lists
- ✓ Printing List Items
- ✓ Print List Slices
- ✓ Length & Type
- ✓ list() method
- ✓ Empty Lists, Append
- ✓ Loops, List Updates

Ch 8: Python Dictionaries

- ✓ Python Dictionary
- ✓ Creating, Indexing Dictionaries
- ✓ Edit / Overwrite Key Values
- ✓ Lists inside Dictionaries
- ✓ Delete & Clear

Ch 9: Python Tuples

- ✓ Python Tuples
- ✓ Defining, Indexing
- ✓ Length(), Type()
- ✓ Mixed Values in Tuples
- ✓ Overwriting Tuples
- ✓ Tuple Class, (())

Ch 10: Python IF..ELSE Condition

- ✓ If..Else conditions
- ✓ if..elif..else & Shorthand if
- ✓ composite conditions
- ✓ Indent, pass statement
- ✓ in & negation operators
- ✓ range conditions

Ch 11: Python Loops (For)

- ✓ Python For Loop
- ✓ For Loop @ Range
- ✓ For Loop @ Sequence Values
- ✓ Nested Loops
- ✓ Loop Control Statements
- ✓ Break, Continue, Pass

Ch 12: Python Loops (While)

- ✓ While Loop
- ✓ Termination Checks (Expressions)
- ✓ Variables, Logical Conditions
- ✓ Loop Conditions, Operators
- ✓ Exit Conditions
- ✓ iter() and Looping Options

Ch 13: Python Dataframes

- ✓ Dataframes: Creation
- ✓ Pandas Dataframes
- ✓ Dataframes From Single List
- ✓ Dataframes from Dictionary
- ✓ Display Dataframes, List Items
- ✓ Identify, Replace Nulls, NumPy

Ch 14: Python SQL DB Access

- ✓ SQL DB Access with Python
- ✓ import pandas.DataFrame
- ✓ pyodbc module, sql functions
- ✓ SQL DB Cursor Connections
- ✓ SQL Query Executions: DDL, DML
- ✓ Filters, Aggregations with SQL
- ✓ Dataframe Usage with SQL

Ch 15: Dataframe Transformations - 1

- ✓ Dataframe Transformations
- ✓ Concat & Append
- ✓ Merge Function
- ✓ Join with Multiple Dataframes
- ✓ Indexing Operations
- ✓ Data Type Checks, Conversions
- ✓ Loops with Dataframes

Ch 16: Dataframe Transformations - 2

- ✓ Pandas - Cleaning Data
- ✓ Replace, Transform Columns
- ✓ Data Discovery & Column Fill
- ✓ Identify & Remove Duplicates

- ✓ dropna(), fillna() Functions
- ✓ Data Plotting & matplotlib Lib

Ch 17: Python Functions & Lambda

- ✓ Python Functions & Usage
- ✓ Function Parameters
- ✓ Default & List Parameters
- ✓ Python Lambda Functions
- ✓ Recursive Functions, Usage
- ✓ Return & Print @ Lambda

Ch 18: Python File Handling

- ✓ File Handling, Activities
- ✓ Loop, Write, Close Files
- ✓ Appending, Overwriting
- ✓ import os, path.exists
- ✓ f.open, f.write
- ✓ f.read, f.close

Module 4: 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 Databases & Tables

- ✓ Snowflake Database Types
- ✓ Snowflake Table Types
- ✓ Retention Time, Connections
- ✓ Permanent, Transient Types
- ✓ CREATE TABLE AS SELECT (CTAS)

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: Snowflake Cloning

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

Ch 8: Procedures & Views

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

Ch 9: 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 in Realtime
- ✓ Views For Security
- ✓ RBAC & DAC in Real-time

Ch 10: 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 11: Snowflake Streams & Audits

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

Ch 12: Snowflake Tasks

- ✓ 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
- ✓ Auto Scale Options, Billing

Ch 13: 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 14: Snowflake Partitions, Stages

- ✓ Snowflake Partitions, Views
- ✓ 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 15: Azure / AWS 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 16: 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 5: Data Build Tool (DBT)

Ch 1: DBT Fundamentals

- ✓ What is Data Build Tool?
- ✓ DBT as a data transformation tool
- ✓ Importance of DBT in ELT workflows
- ✓ DBT Cloud for data transformations

Ch 2: DBT Models and Materializations

- ✓ Building models in DBT
- ✓ Types of materializations
- ✓ Table, view, incremental materializations
- ✓ Model configurations

Ch 3: DBT Jinja Templating

- ✓ Introduction to Jinja
- ✓ Using Jinja with DBT
- ✓ Macros and reusable code
- ✓ Implementing dynamic SQL

Ch 4: DBT Testing and Documentation

- ✓ Writing and executing tests
- ✓ Data quality checks
- ✓ DBT documentation and lineage graphs
- ✓ Generating DBT docs

Ch 5: DBT Seeds and Sources

- ✓ Using seeds for static data
- ✓ Defining and using sources
- ✓ Source freshness checks
- ✓ Integrating external data

Ch 6: DBT Deployment and CI/CD

- ✓ Deployment strategies for DBT
- ✓ Continuous integration and deployment
- ✓ Automating DBT workflows
- ✓ Version control with Git

Ch 7: DBT Best Practices

- ✓ Project structure recommendations
- ✓ Coding standards and guidelines
- ✓ DBT project optimization
- ✓ Performance tuning tips

Ch 8: Hooks in DBT

- ✓ Custom scripts to run at specific points
- ✓ Adding additional logic to streamline Snowflake
- ✓ Analyses and exploratory data workflows
- ✓ Ad-hoc analyses that do not get materialized

Ch 9: DBT Snapshots

- ✓ Managing historical data
- ✓ Implementing DBT snapshots
- ✓ Snapshot configuration
- ✓ Strategies for handling changes

Ch 10: DBT Packages and Extensions

- ✓ Leveraging DBT packages

- ✓ Using community packages
- ✓ Extending DBT functionality
- ✓ Integrations with other data tools

Module 6: Real-Time Projects

PROJECT 1: HEALTHCARE DATABASE

Project Requirement:

Solve 20+ Real-World Healthcare Business Requirements.

Project Workflow:

Database Design → SQL Development → Data Analysis → Performance Optimization

Project Operational Flow:

Healthcare DB → Patients → Doctors → Appointments → Treatments → Billing → Insurance → SQL Analysis → Stored Procedures → Performance Tuning → Business Reports

Business Requirements:

Monthly Hospital Revenue, Top Doctors By Patients Treated, Repeat Patients, Department Performance, Average Treatment Cost, Unpaid Bills, Insurance Claim Analysis, Patient Trends, Month-Over-Month Revenue And Top Procedures...

Technologies:

SQL, Snowflake, Power BI

PROJECT 2: ECOMMERCE ANALYTICS

Project Requirement:

Build an end-to-end E-Commerce Analytics solution by ingesting, transforming, modelling, analyzing, and visualizing customer, product, order, payment, and sales data.

Solve 25+ real-world E-Commerce business requirements using SQL, Python, Snowflake, DBT, and Power BI.

Project Workflow:

Data Sources → Python Data Processing → Snowflake Data Warehouse → DBT Transformations → Data Quality Testing → Analytics Models → Power BI Dashboard → Business Insights

Project Operational Flow:

Customers → Products → Categories → Orders → Order Items → Payments → Shipping → Returns → Snowflake → DBT Models → SQL Analytics → Power BI → Business Reports

Business Requirements:

Total Revenue, Monthly & Yearly Sales Trends, Month-over-Month Growth, Top-Selling Products, Top Categories, Average Order Value, New vs Returning Customers, Repeat Purchase Rate, Customer Lifetime Value, Customer Segmentation, Top Customers by Revenue, Order Status Analysis, Cancelled Orders, Product Return Rate, Payment Method Analysis, Regional Sales Performance, Discount Impact Analysis, Profitability by Product, Low-Performing Products, Peak Sales Periods, Customer Purchase Frequency, Revenue by Category, Shipping Performance, Sales Target vs Actual and Executive KPI Dashboard.

Project Deliverables:

- ✓ Raw → Staging → Intermediate → Mart layers in Snowflake/DBT
- ✓ FactSales / FactOrders and Customer, Product, Date and Geography dimensions
- ✓ DBT models, tests, sources, snapshots and documentation
- ✓ Python-based data cleaning and ingestion
- ✓ Incremental loading rather than only full loads
- ✓ Data-quality checks for nulls, duplicates and invalid transactions
- ✓ Git/version-control workflow for DBT
- ✓ Power BI Executive Sales Dashboard
- ✓ A final business presentation + project explanation/mock interview

Technologies:

SQL, Snowflake, Power BI, Python, DBT

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