What is Snowflake?

Snowflake is an Open-Source Cloud Warehouse Technology.
Snowflake is used to store Huge Volumes of Data (Big Data), Aggregated and also Historical Data. Very Robust and use Friendly environment paired with Enterprise Level Security.

What are the Job Roles for Snowflake Engineers?

1. Snowflake Developer
2. ETL & DWH Developer (Cloud)
3. Snowflake Data Engineer
4. Snowflake BI Developer

How to become a Snowflake Professional

Step 1: Learn & Master **SQL** Concepts
Step 2: Learn, master **Python** Concepts
Step 3: Learn, master **Snowflake**
Step 4: Involve in **End to End Projects**

Additional, Optional Learning (Later, after completion of this Snowflake course):
Case 1: DBT, Cortex AI for experienced Data Engineer Job Roles
Case 2: Power BI For Data Analyst Job Roles

Who can join this Snowflake course?

- ✓ Analysts
- ✓ Developers
- ✓ Administrators
- ✓ IT Professionals
- ✓ Students, any one!

What kind of Realtime Projects you will work on, this in Snowflake course?

Our Snowflake Training with SQL & Python is 100% Hands-On. Truly recommended for everyone who wanted to master Snowflake with End to End Implementations, Realtime Projects.

- ➢ **Healthcare Patient & Clinical Analytics Project**

Project Objective: Build an end-to-end healthcare analytics solution that collects patient clinical data, processes it using SQL and Python, stores it in Snowflake, and produces useful insights about patient visits, vital signs, medications, and adverse events.

- ➢ **Project Data Model**

Use the same healthcare model we created above:
PATIENTS → VISITS → VITAL SIGNS / MEDICATIONS / ADVERSE EVENTS

- ➢ **Real-Time Project Takey-aways**

1. Project Solution
2. Project Implementation (Practical)
3. Project FAQs
4. Resume
5. Mock Interview

DETAILED COURSE CURRICULLUM

Module 1: SQL Server (MSSQL), T-SQL

Ch 1: SQL Database Job Roles

- ✓ **Introduction to Data**
- ✓ **Database Intro, Types**
- ✓ **OLTP, DWH, OLAP**
- ✓ **DBMS Concepts**
- ✓ **Data Analyst Job Roles**

Ch 2: Database Intro & Installations

- ✓ **SQL Server Installations**
- ✓ **Instance Concepts**
- ✓ **Authentication Types**

- ✓ **Authentication Modes**
- ✓ **SSMS Tool Installation**
- ✓ **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**
- ✓ **DML: Insert, Update, Delete**
- ✓ **DQL: Select, Fetch**
- ✓ **SQL Operators**
- ✓ **Special Operators**

Ch 5: Data Imports, Schemas

- ✓ **Data Imports with Excel**
- ✓ **Order By with WHERE**
- ✓ **TOP & OFFSET**
- ✓ **UNION, UNION ALL**
- ✓ **Schemas: Creation, Usage**
- ✓ **Real-world Banking Database**
- ✓ **2 Part, 3 Part & 4 Part Naming**

Ch 6: Data Types & Variables

- ✓ **Integer Data Types**
- ✓ **Character, MAX Data Types**
- ✓ **Decimal & Money Data Types**
- ✓ **Boolean & Binary Data Types**
- ✓ **Date and Time Data Types**
- ✓ **Variables in SQL**

Ch 7: Constraints, Keys & RDBMS

- ✓ **Null, Not Null Constraints**
- ✓ **Unique Key Constraint**
- ✓ **Primary Key Constraint**
- ✓ **Foreign Key & References**
- ✓ **Default Constraint & Usage**
- ✓ **DB Diagrams & ER Models**

Ch 8: Normal Forms & ERD

- ✓ Normal Forms: 1 NF, 2 NF
- ✓ 3 NF, BCNF and 4 NF
- ✓ Self Referencing Keys
- ✓ Database Diagrams

Ch 9: Joins Queries – Level 1

- ✓ Joins: Table Comparisons
- ✓ Inner Join & Outer Joins
- ✓ Cross Join & Cross Apply
- ✓ Table & Column Aliases
- ✓ 3 Table, 4 Table Joins

Ch 10: Joins Queries – Level 2

- ✓ Group By & Aggregations
- ✓ Joins with Group By
- ✓ Join Queries with Aliases
- ✓ WHERE & HAVING
- ✓ Sub Queries
- ✓ Query Execution Order

Ch 11: Views & Data Analytics

- ✓ Views: Realtime Usage
- ✓ Storing SELECT in Views
- ✓ DML, SELECT with Views
- ✓ RLS: Row Level Security
- ✓ Important System Views

Ch 12: Stored Procedures – Level 1

- ✓ Stored Procedures: Realtime Use
- ✓ Procedures with SELECT
- ✓ System Stored Procedures
- ✓ Metadata Access with SPs
- ✓ Stored Procedures, Tuning

Ch 13: Stored Procedures – Level 2

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

Ch 14: Functions in TSQL

- ✓ Using Defined Functions (UDF)

- ✓ Scalar Functions in Real-world
- ✓ Table Valued Functions
- ✓ Parameterized Queries
- ✓ Returns and Return

Ch 15: Window Functions, CTE

- ✓ Date & Time Functions
- ✓ String Functions
- ✓ Window (Rank) Functions
- ✓ Rank, Row_Number
- ✓ CTEs & Data Cleanisng

Ch 16: 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 17: Transactions & ACID

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

Ch 18: Indexes Basics, Tuning

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

Ch 19: Cursors & Temp Tables

- ✓ IIF(), CASE Statement
- ✓ Cube( ) and Rollup( )
- ✓ Grouping( ) & Usage
- ✓ Local & Global Temp Tables
- ✓ SELECT..INTO Statement

Ch 20: Realtime Case Studies (HealthCare Datasets)

Module 2: Python Concepts & 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
- ✓ Athematic *& 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, Paas

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 & matlib Lib

Ch 17: Python Functions & Lambda

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

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

Realtime Case Study (Banking / Finance) For Data Analysis

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 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 4: Real-time Project (End to End)

- ✓ **HealthCare Domain**
- ✓ **Defining project requirements**
- ✓ **Initial project setup and Python configuration**
- ✓ **Model planning and development**
- ✓ **Project deployment and monitoring**
- ✓ **Implementing advanced Snowflake with Python**
- ✓ **Comprehensive testing and documentation**
- ✓ **Real-world deployment considerations**
- ✓ **Solution Explanation, Resume Points**
- ✓ **Interview FAQs and Answers**

Technologies: Snowflake | SQL | Python | SnowPro

Key Features @ 100% Practical Snowflake Training Course

- Data Ingestion from Azure Cloud
- Python Transformation
- SQL Data Implementations
- SQL Data Analytics
- Big Data Implementations
- Cloud ETL
- Cloud DWH
- End to End Data Stack Operations
- Automated Data Pipelines

THANK YOU! 🎉
Your Data Career Starts Here!

Learn SQL • Master Python • Build with Snowflake • Work on Real-Time Projects

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