SNOWFLAKE COURSE CONTENT

Basics of Data

- What is a Database?
- What is a Data Warehouse?
- Challenges with traditional Data Warehouses

Overview of Cloud

- What is Cloud Computing?
- Software as a Service (SAAS)
- Platform as a Service (PAAS)
- Infrastructure as a Service (IAAS)

Snowflake Overview

- Introduction to Snowflake
- Advantages of Snowflake
- Snowflake Architecture
  - Cloud Services Layer
    - Metadata Manager
    - Infrastructure Manager
    - Optimizer Service
    - Authentication and Security
  - Compute Layer
  - Storage Layer
- Billing for Storage, Compute and Cloud Services Layers
- Life cycle of a query
- Ways to connect to Snowflake

Getting Started with Snowflake

- Availability Zones
- Snowflake Regions
- Snowflake Editions
- Register for free trial account in Snowflake
- Snowflake Web Interface (UI) Overview

- Loading SQL scripts to Snowflake
- Introduction to Snowflake Sample Data
- Practice Lab for creating Databases, Warehouses, etc.

SnowSQL

- Introduction to SnowSQL
- Installation and setup of SnowSQL
- Practice Lab for running SQL Commands using SnowSQL
- Running a SQL script using SnowSQL

Snowsight

- Introduction to Snowsight
- Practice Lab for creating charts and dashboards in Snowsight

Snowflake Caching

- Metadata Cache
- Query Result Cache
- Data Cache
- Life cycle of a query in terms of caching
- Practice Lab to work with all 3 types of caching

Snowflake Structure

- Snowflake Data Objects
- Types of Tables
    - Permanent Table
    - Temporary Table
    - Transient Table
    - External Table
- View Types
    - Standard View
    - Secure View
    - Materialized View
- Snowflake Data Types
- Practice Lab for working with all table and view types
- Querying and Filtering Commands
- Collations
- Subqueries
- Practice Lab for working with query fundamentals
- Query Tags

- Explain Plan
- Query Profile

Data Movement

- Data Loading
    - What is a Stage?
    - Types of Stages
    - What is a File Format?
    - Data Loading commands
    - Data Loading recommendations
    - Bulk Loading Vs Continuous Loading
    - Snowpipe Introduction
    - Loading data through Load Data Wizard
    - Practice Lab for loading data from S3 to Snowflake
- Data Unloading
    - Data Unloading Tips
    - Data Unloading commands
    - Practice Lab for unloading data from Snowflake to Local File System

Tasks & Streams

- Introduction to Streams
- Introduction to Tasks
- Practice Lab for creating tasks

Snowflake Functions

- Snowflake Defined Functions
- User-Defined Functions (UDF)
    - SQL UDF
    - JavaScript UDF
- Practice Lab for working with various types of functions
- Stored Procedures
- User-Defined Functions Vs Stored Procedures
- Practice Lab for creating Stored Procedures and UDFs

Security Management

- Security Protocols
- Access
- Authentication
- Authorization
- Data Protection

- Infrastructure
- Demo on MFA setup, Network Policy creation, etc.

Access Control and User Management

- Users and Roles Overview
- System Roles
- Custom Roles
- Ownership Vs Grants

- Practice Lab for creating and configuring Roles

Semi-Structured Data

- Introduction to Semi-Structured Data
- Supported File Formats
- Flattening Data
- Querying Semi-Structured Data
- Practice Lab for working with Semi-Structured Data

Continuous Data Protection

- Cloning
- Time Travel
- Failsafe
- Database Replication
- Practice Lab for Cloning and Time Travel

Data Sharing

- Data Share Offerings
    - o Secure Direct Data Share
    - o Snowflake Data Exchange
    - o Snowflake Data Marketplace
- What is a Share?
- Data Providers
- Data Consumers
- Reader Accounts

Performance and Concurrency

- SQL Performance Tips
- Resolving Pruning Issues
- Clustering Keys
- Virtual Warehouse Scaling

- o Scaling Up
- o Scaling Out
- Practice Lab on Warehouses Scaling

Account and Resource Management

- Controlling Costs
- Resource Monitors
- INFORMATION_SCHEMA
- SNOWFLAKE Database
- ACCOUNT_USAGE
- Demo on setting up a Resource Monitor
- Practice Lab on monitoring warehouse usage, billing, querying INFORMATION_SCHEMA and ACCOUNT_USAGE

Preview Features

- Preview Features overview
- Releases

Snowflake – Tableau Integration

- Tableau Introduction
- Establishing connection between Snowflake and Tableau
- Practice Lab for creating reports in Tableau on data present in Snowflake

Snowflake – Python Integration

- Python Introduction
- Creating Google Colab account
- Establishing connection between Snowflake and Python
- Practice Lab for executing Snowflake queries through Python

SnowPro Core Certification

- Certification Exam overview
- Resources and Reference links
- Links for practice quizzes
- Exam tips

Snowflake Interview Questions

- 40 Theory-based Questions
- 20 Scenario-based Questions