

# Snowflake Development

## Prerequisites for snowflake:

1. Basic SQL knowledge,
2. Understanding of Data Warehousing concepts.

## Module 1: Snowflake Architecture and Overview

Snowflake Overview

Architecture

How to use the Snowflake UI & ecosystem

## Module 2: Introduction to Cloud

What is Cloud

Different Cloud Vendors

Advantages of Cloud over On-Premises

## Module 3: Introduction to Data Warehousing Concepts

What is a Data Warehouse, and Why do we need a Data Warehouse?

Database Vs Data Warehouse.

Data Warehouse Architecture

OLTP Vs OLAP

What is ETL

## Module 4: Introduction to Snowflake

How different from traditional DB

Quick start to the snowflake and accessing trial account

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Creating warehouse, DB, Schema, and tables

Accessing different roles and using it

Working with worksheets

Understanding different type of accounts

### **Module 5: Understand Cloud platforms**

AWS and understanding S3 storage

Snowflake architecture and caching

AZURE and understanding blob storage

GCP and understanding Bucket storage

### **Module 6: Data Loading and Unloading**

File formats

Internal and external storage

Internal and external stage

Copy into usage

Snowflake internal storage

Accessing Cloud storage data into Snowflake (GCP, AZURE and AWS)

Data unloading

### **Module 7: SnowPipe**

Accessing Snowpipe

PUT and GET commands

Bulk loading from cloud storage

Continuous loading

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## **Module 8: Partner connect with snowflake**

Snowflake Connector and use cases Python  
BI connectors use cases  
Other connectors hands-on

## **Module 9: Handling JSON and Semi structured data**

Variant Data Type  
File format options  
Creating stages  
Loading JSON semi-structured data into SF tables  
Accessing JSON with select statement

## **Module 10: Scheduling with Snowflake**

Creating Tasks  
Streams  
Accessing procedures with tasks  
Scheduling as per time with Different time zones  
Automate loading process Daily and Weekly

## **Module 11: Secure Data sharing**

Usage of sharing data  
Sharing data with different accounts  
Sharing data with non-SF accounts using reader accounts  
Importance of reader accounts  
Privileges in data sharing

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Challenges with cross-region sharing and understanding replication  
Connecting shared objects with BI tools  
Limitations with Data sharing

## **Module 12: Cloning**

Access Control Privileges for Cloned Objects  
Cloning and Snowflake Objects  
Impact of DDL on Cloning  
Impact of DML and Data Retention on Cloning

## **Module 13: Time travel & Failsafe**

Introduction to Time Travel  
Querying Historical Data  
Enabling and Disabling Time Travel  
Data Retention Period  
Cloning Using Time Travel (Databases, Schemas, and Tables Only)

## **Module 14: Query Caching, Clustering, and Performance techniques**

Creating multi-users on large tables  
Performance techniques  
Result set cache  
Metadata cache  
Query data cache  
Best practices of using caching for performance and cost optimization

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## **Module 15: Advanced Topics:**

Error Handling and Validations

Snowflake Pricing model and selecting best Edition and Calculation of Credits usage

Resource Monitoring

Data Masking

Partitioning and Clustering in snowflake

Materialized View and Normal View

Integration with Python

Integration with AWS, Azure and Google Cloud

Best Practices to follow

### **Snowflake Admin**

✚ Snowflake User's Maintenance like Create, Assign, Default Warehouse, Database, Schema, Validity Period, Extension of User Validity Period, Lock and Unlock Users etc.

✚ Credit Usage and How to Save Credits and How to Guide Snowflake Developers to Save Credits.

✚ Initiate Payments for Snowflake Accounts.

Configure Policies, Changes, Activate Selected Network Policy etc.

✚ Role Assignments & Grant Privileges to Different Accounts.

Monitor Fail-Safe and Guide to Snowflake Developers.

✚ About Session Usages.

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- ✦ Types of Roles and Difference between Each of them.
- ✦ How to Derive the Roles, Warehouses, Databases, Schemas, Tables, Views etc. for Multiple Users & Data Restrictions for Each User, Group Users etc.
- ✦ Monitoring or Reviewing the Best Practice & Considerations for Managing Load Operations and Performance.
- ✦ Monitoring Snowflake Resource Monitoring Each User and How to Control by ACCOUNTADMIN.
- ✦ Define Third-Party Accounts, when we go for it and Why Snowflake Introduced Third- Party Account.
- ✦ Overview of Data Providers and Consumers.
- ✦ Data Sharing from Snowflake Account to Non-Snowflake Account.

Share Data from Snowflake Account to Consumer Who Doesn't Have Snowflake Account.

- ✦ Apply Column level Security Features for Data Controlling.

How to Define a Dynamic Data Masking and when we can go for it.

- ✦ What is External Tokenization when we can go for it.

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