

What is Snowflake?

INTRODUCTION TO SNOWFLAKE



Danny Hong
Senior Data Engineer

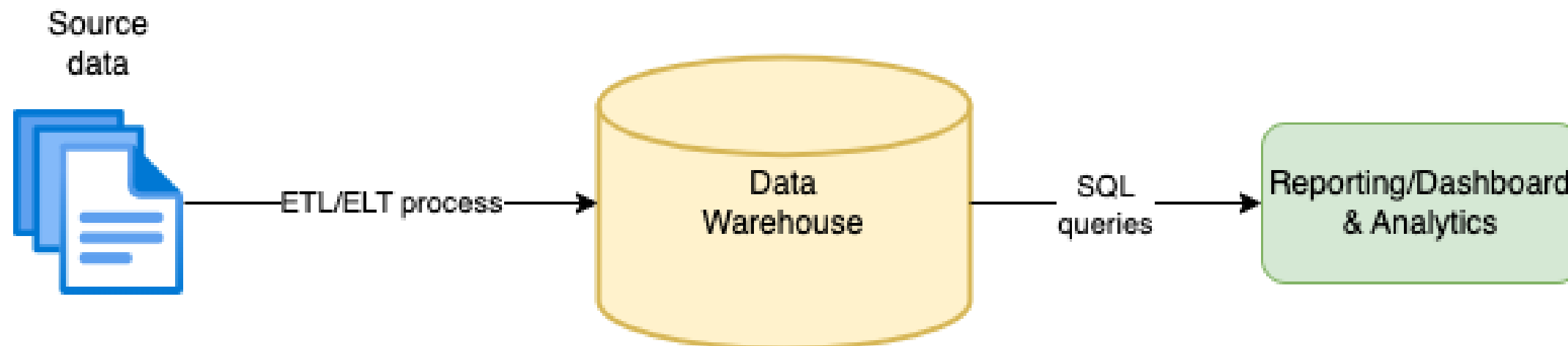
Your instructor

- I'm Danny Hong
 - 10+ years of experience as a *Data Analytics Engineer*
 - Worked at Google, Amazon, and Meta
 - Expert in **Snowflake** for data models and big data analysis



What is Snowflake? (cont)

- Snowflake is a leading AI Data Cloud & data warehousing platform
- Commonly used by Data/BI Engineers and analysts
- **Data Warehouse**
 - A repository for storing large amounts of historical data
 - Designed to support historical analysis and reporting using SQL



Why is Snowflake popular?

Data Platform as a Self-Managed Service

- No hardware or software provisioning required
- Ready to use after signing up new account



Traditional Data Warehouse



A few Snowflake features to highlight

- Supports connection with major cloud providers
 - Example: data pipeline for a video streaming app




- Ability to unify external data sources together
- Data governance controls
 - Enforce "least-privilege access"

Snowsight UI

Home - Snowflake

app.snowflake.com/datacamp/learn_content_prod/#/homepage

Feedback

snowflake

+ Create

Home

Search

Projects

Data

Data Products

AI & ML

Monitoring


Admin

Home PREVIEW


Welcome to your new Home experience
Here you can find and access all of your most recent projects in one place, search your data, or get started on something new.

Search this account, Marketplace, and documentation


Quick actions




Query data
Create a SQL Worksheet



Upload local files
Quickly convert data into tables



Write Python code
Create a Python Worksheet



Create Dashboard
Visualize data insights

Recently viewed

All projects

Worksheets

Notebooks

Streamlit

Dashboards

Data Marketplace in Snowsight

The screenshot displays the Snowflake Marketplace interface within the Snowsight console. On the left is a sidebar with the Snowflake logo and navigation links: Create, Home, Search, Projects, Data, Data Products, Marketplace (highlighted), and Apps. The main content area is titled 'Snowflake Marketplace' and 'Internal Marketplace'. It features a search bar with the placeholder text 'Search providers and data products', a 'Discover' button, and links for 'Data products', 'Providers', and 'My requests'. Below this is a large banner with the text 'Data, apps, and AI products from hundreds of providers' and a link 'All Data Products >'. Under the banner, there are eight category tiles, each with an icon and a label: Demographics (orange icon of three people), Commerce (pink icon of a shopping bag with a dollar sign), Geospatial (teal icon of a globe with a location pin), Financial (blue icon of a bar chart with a dollar sign), Health and Life Sciences (light green icon of a flask with a plus sign), Marketing (purple icon of a megaphone), Economy (green icon of a document with a dollar sign and bar chart), and Government (light blue icon of a government building).

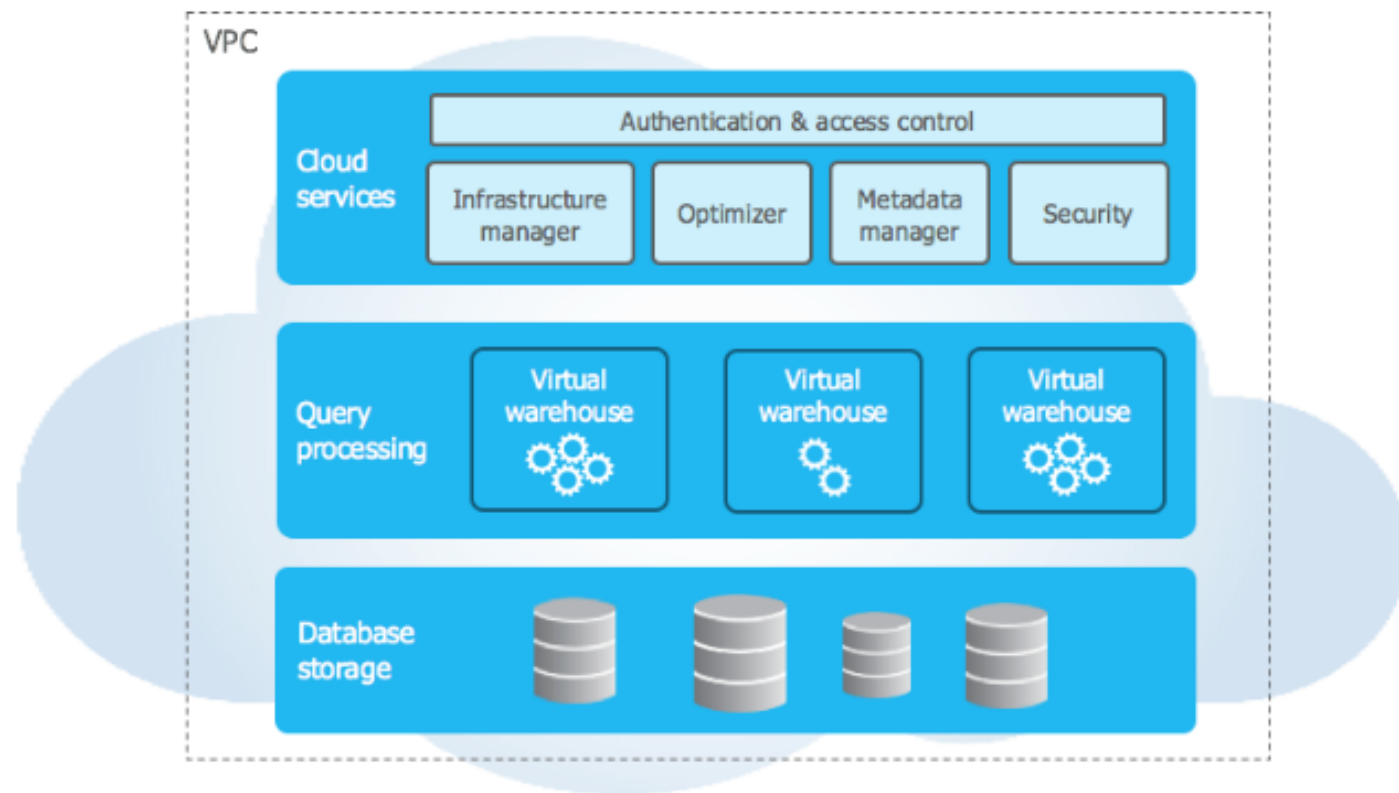
Snowflake Marketplace Internal Marketplace

Search providers and data products **Discover** Data products Providers My requests

Data, apps, and AI products from hundreds of providers All Data Products >

Demographics Commerce Geospatial Financial Health and Life Sciences Marketing Economy Government

Snowflake's data architecture



- Cloud Services
 - Coordinate user activities
- Query Processing
 - Uses Massive parallel processing (MPP) architecture
 - Distributes data and compute resources across a cluster of nodes (computers)
- Database Storage
 - Stores data in a columnar format (optimized for analytical queries)

¹ <https://docs.snowflake.com/en/user-guide/intro-key-concepts#snowflake-architecture>

Let's practice!
INTRODUCTION TO SNOWFLAKE

Executing a query and viewing the results

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Senior Data Engineer

Let's practice!
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Monitoring a Query and Copy History

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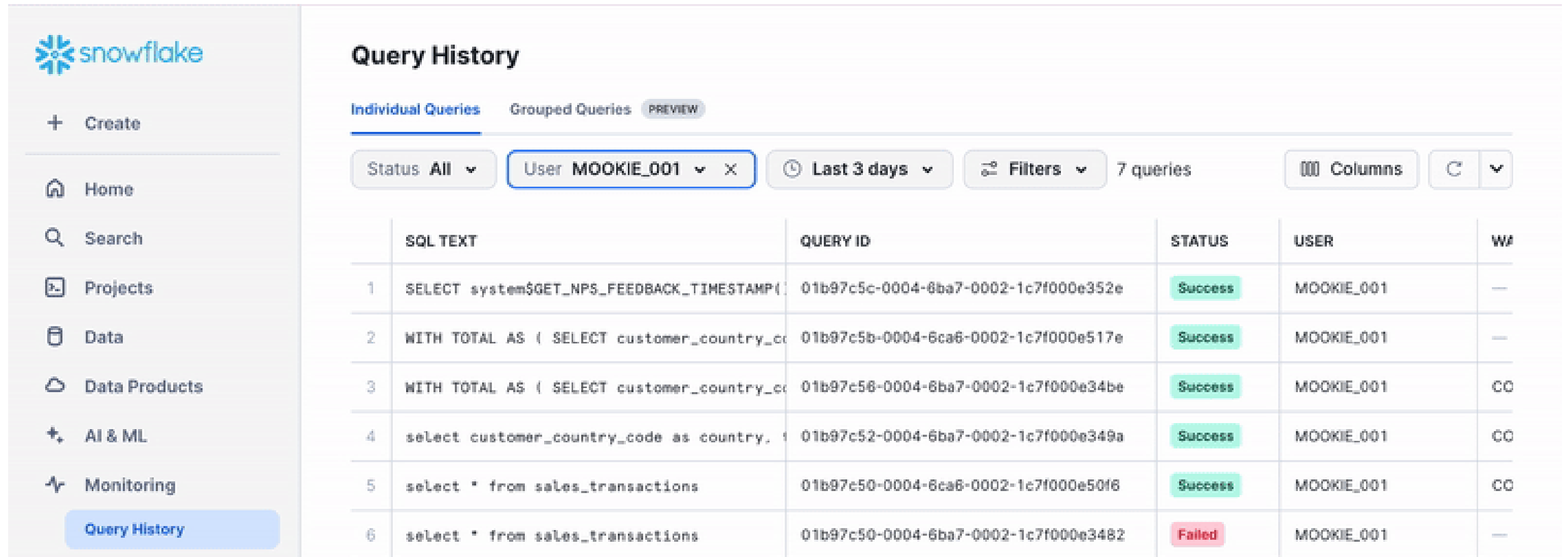
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Benefits of Monitoring

- See how tables are queried
- See which queries take longest to execute
- See how much data is copied to tables
- Debug failures and see historical queries

Viewing Query History


- Can retrieve a past SQL query you wrote
- Keeps track of queries executed in past 14 days



The screenshot displays the Snowflake Query History interface. The left sidebar contains navigation links: Create, Home, Search, Projects, Data, Data Products, AI & ML, and Monitoring. The main panel is titled "Query History" and includes tabs for "Individual Queries", "Grouped Queries", and "PREVIEW". Below the tabs are filters: Status (All), User (MOOKIE_001), Last 3 days, Filters, 7 queries, Columns, and a refresh button. The table below shows the query history:

| | SQL TEXT | QUERY ID | STATUS | USER | WA |
|---|--|--------------------------------------|---------|------------|----|
| 1 | SELECT system\$GET_NPS_FEEDBACK_TIMESTAMP(| 01b97c5c-0004-6ba7-0002-1c7f000e352e | Success | MOOKIE_001 | — |
| 2 | WITH TOTAL AS (SELECT customer_country_co | 01b97c5b-0004-6ca6-0002-1c7f000e517e | Success | MOOKIE_001 | — |
| 3 | WITH TOTAL AS (SELECT customer_country_co | 01b97c56-0004-6ba7-0002-1c7f000e34be | Success | MOOKIE_001 | CO |
| 4 | select customer_country_code as country, | 01b97c52-0004-6ba7-0002-1c7f000e349a | Success | MOOKIE_001 | CO |
| 5 | select * from sales_transactions | 01b97c50-0004-6ca6-0002-1c7f000e50f6 | Success | MOOKIE_001 | CO |
| 6 | select * from sales_transactions | 01b97c50-0004-6ba7-0002-1c7f000e3482 | Failed | MOOKIE_001 | — |

Finding a Query



+ Create

Home

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Notebooks

Streamlit


Dashboards

Folders

Create your first project


You can start querying in SQL, develop workflows, or visualize data insights.

+ New Project

 datacamp

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Query Details



+ Create

Home

Search

Projects

Data

Data Products

AI & ML

Monitoring

Query History

Copy History

Task History

Dynamic Tables

Traces & Logs

Trust Center

Admin

<

Query - 01b97ebf-0004-6ba7-0002-1c7f000e3b5a

↺

↻

A. MOOKIE_001






Query Details

Query Profile

Query Telemetry

PREVIEW

Details

| | | |
|----------------------|---|--|
| Status | Duration | Driver Status |
| Success | 126ms | Supported |
| Start Time | Query ID | Client Driver |
| 1/4/2025, 4:23:08 PM | 01b97ebf-0004-6ba7-0002-1c7f00...  | Go 1.1.5  |
| End Time | Query Tag | Session ID |
| 1/4/2025, 4:23:08 PM | — | 594281740968346  |
| Warehouse Size | Attributed Compute Credits  | Parameterized query hash |
| — | — | c09feae6236c6ff66216997f20730...  |

SQL Text

```
WITH TOTAL AS (  
SELECT  
customer_country_code as country,  
SUM(amount) as total_amount
```

Viewing Copy History

- Monitor incoming volume of data from external sources
 - see how often loads are succeeding vs failing
- Two options to view
 - Monitoring > Copy History (45 minute data latency, **BUT** can be longer)
 - Table > Copy History (no latency, data is up to date)
- Access limited to higher privilege roles
 - PUBLIC role restricted due to sensitive information

Copy History Demo

Monitoring > Copy History

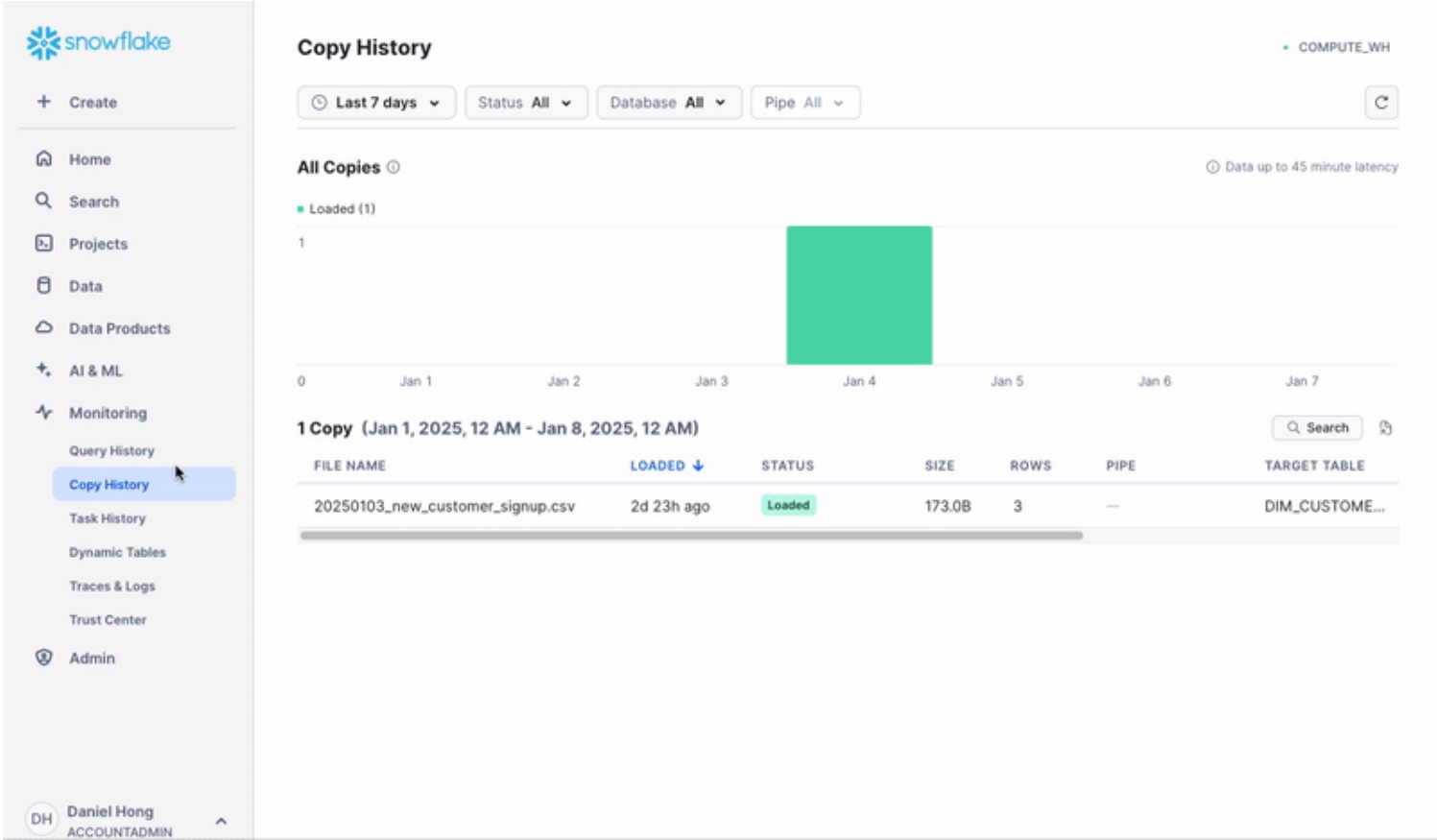
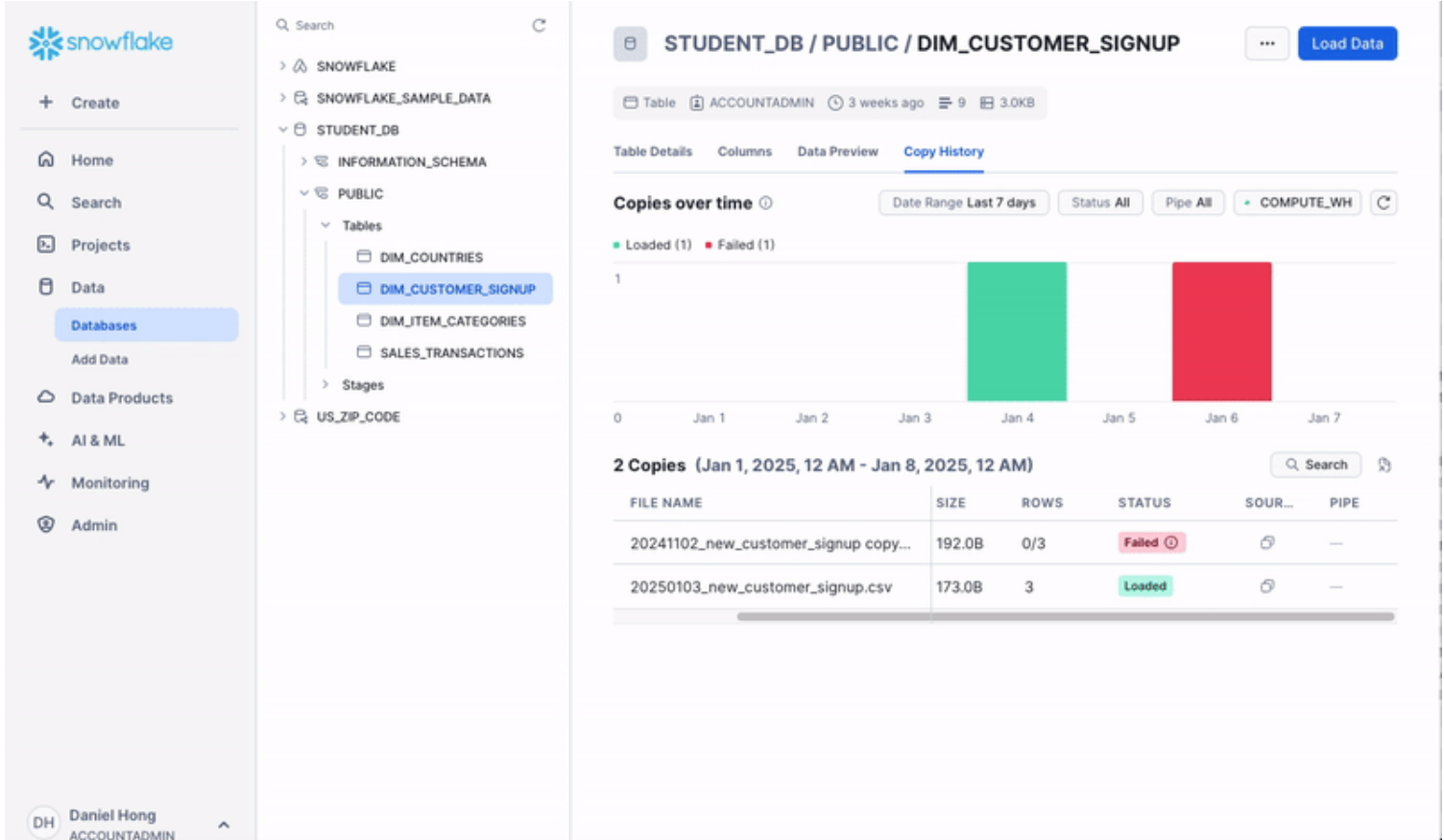


Table > Copy History



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