SCD Types with SQL Server (SSMS)

This document explains the implementation of Slowly Changing Dimensions (SCD) Types 0, 1, 2, 3, 4, and 6 using SQL Server Management Studio (SSMS). Each SCD type has its specific use case and implementation strategy.

# SCD Type 0

Preserves original data. No updates are allowed. Only inserts are permitted.

Example Usage:

- New data is inserted but existing records are never changed.

# SCD Type 1

Overwrites existing data with new data. No historical data is stored.

Example Usage:

- If a customer's address changes, the existing record is updated with the new address.

# SCD Type 2

Stores full history of data. Adds new row with start and end date tracking.

Example Usage:

- When a customer's address changes, the current record is marked as old and a new record is inserted with updated details and new start date.

# SCD Type 3

Tracks limited historical data using additional columns (e.g., PreviousAddress).

Example Usage:

- If a customer moves, the current address is stored and the previous address is shifted to another column for tracking.

# SCD Type 4

Uses a separate history table to store historical changes.

Example Usage:

- Current data is updated, and old values are moved to a separate history table with timestamps.

# SCD Type 6

Combines SCD Types 1, 2, and 3. Tracks history in rows and updates limited columns in main table.

Example Usage:

- When a change occurs, the system logs old data in a history table (like SCD4), adds a new row (like SCD2), and updates a previous value column (like SCD3).