

SCD Type 1 vs. Type 2: The Data Handling Trade-off

Slowly Changing Dimensions (SCD) strategies manage how attribute changes are handled over time. Type 1 prioritizes current data accuracy, while Type 2 prioritizes historical tracking.



SCD Type 1 - The "Overwrite" Method

Customer Record (Current State)

Customer ID	Name	Address	Phone
1	John Smith	123 Main St 456 Oak Ave	(555) 012-3456

- ✓ **Overwrites Existing Values:** New data directly replaces old data in the database record.
- ✓ **No History Maintained:** Historical context is permanently lost once the update occurs.
- ✓ **Simple and Space-Efficient:** Keeps tables small and queries simple by only storing current state.



SCD Type 2 - The "History" Method

Customer History Table (Audit Trail)

Customer ID	Name	Address	Phone	Effective Date	End Date	Current Flag
1	John Smith	123 Main St	(555) 012-3456	2023-01-01	2024-01-01	No
1	Jehn Smith	456 Oak Ave	(555) 012-3456	2024-01-01	NULL	Yes

- + **Creates New Row for Every Change:** A new record is added rather than updating the existing one.
- + **Full Audit Trail:** Preserves the complete history of all changes over time.
- + **Requires Version Tracking:** Uses 'Effective Dates' and 'End Dates' to identify the active record and specific time windows.

Feature	SCD Type 1	SCD Type 2
History Kept	No	Yes
Storage Growth	Low (Updates)	High (New Rows)
Primary Use	Correcting Errors	Trend Analysis