Incremental Insignia Documentation

# Overview

This project involves designing and implementing a database schema for Insignia Corporation, which is involved in online gift sales.This project involes creating tables from a single table, followed by developing a data model and implementing an ETL (Extract, Transform, Load) process.

The database schema follows best practices for data integrity, security, and performance.

# Database Schema

**Step 1:Create Dimension Tables**

**1.Employee Dimension:**

CREATE TABLE dim\_employee (

employee\_id INT PRIMARY KEY IDENTITY(1,1),

employee\_name NVARCHAR(100),

employee\_role NVARCHAR(50),

start\_date DATE,

end\_date DATE,

current\_flag BIT,

lineage\_id INT);

**2.Customer Dimension:**

CREATE TABLE dim\_customer (

customer\_id INT PRIMARY KEY IDENTITY(1,1),

customer\_name NVARCHAR(100),

customer\_email NVARCHAR(100),

start\_date DATE,

end\_date DATE,

current\_flag BIT,

lineage\_id INT

);

**3.Geography Dimension:**

CREATE TABLE dim\_geography (

geography\_id INT PRIMARY KEY IDENTITY(1,1),

country NVARCHAR(50),

state NVARCHAR(50),

city NVARCHAR(50),

population INT,

previous\_population INT,

lineage\_id INT);

**4.Product Dimension:**

CREATE TABLE dim\_product (

product\_id INT PRIMARY KEY IDENTITY(1,1),

product\_name NVARCHAR(100),

product\_category NVARCHAR(50),

product\_price DECIMAL(10, 2),

lineage\_id INT

);

**Step 2:Create Fact Table**

CREATE TABLE fact\_sales (

sales\_id INT PRIMARY KEY IDENTITY(1,1),

date\_id DATE,

employee\_id INT,

customer\_id INT,

geography\_id INT,

product\_id INT,

sales\_amount DECIMAL(10, 2),

quantity INT,

lineage\_id INT

);

**Step 3:Create Lineage Table**

CREATE TABLE lineage (

lineage\_id INT PRIMARY KEY IDENTITY(1,1),

load\_date DATETIME,

source\_row\_count INT,

destination\_row\_count INT

);

**Step 4:Create Staging Copy Table**

CREATE TABLE Insignia\_staging\_copy AS SELECT \* FROM Insignia\_staging WHERE 1 = 0;

**Step 5:Truncate Staging Copy Table Before Loading Data**

TRUNCATE TABLE Insignia\_staging\_copy;

**Step 6:Insert Incremental Data into Staging Copy Table**

INSERT INTO Insignia\_staging\_copy (columns...)

SELECT columns... FROM Insignia\_incremental;

**Step 7:SCD Type 2 Implementation for Employee Dimension**

**Insert New Records**:

INSERT INTO dim\_employee (employee\_name, employee\_role, start\_date, end\_date, current\_flag, lineage\_id)

SELECT employee\_name, employee\_role, GETDATE(), NULL, 1, @lineage\_id

FROM Insignia\_staging\_copy

WHERE employee\_id NOT IN (SELECT employee\_id FROM dim\_employee WHERE current\_flag = 1);

**Update Existing Records:**

*UPDATE dim\_employee*

*SET end\_date = GETDATE(), current\_flag = 0*

*WHERE employee\_id IN (SELECT employee\_id FROM Insignia\_staging\_copy) AND current\_flag = 1;*

**Insert Updates Records:**

*INSERT INTO dim\_employee (employee\_name, employee\_role, start\_date, end\_date, current\_flag, lineage\_id)*

*SELECT employee\_name, employee\_role, GETDATE(), NULL, 1, @lineage\_id*

*FROM Insignia\_staging\_copy*

*WHERE employee\_id IN (SELECT employee\_id FROM dim\_employee WHERE current\_flag = 0);*

**Step 8:Insert into Lineage Table**

INSERT INTO lineage (load\_date, source\_row\_count, destination\_row\_count)

VALUES (GETDATE(), (SELECT COUNT(\*) FROM Insignia\_staging\_copy), (SELECT COUNT(\*) FROM fact\_sales));