Course Project: Dimensional Data Model ERD | Tables & Their Details

In the dimensional diagram, Primary keys are marked as PK and Foreign Keys are marked as FK. The dimensional diagram is based on the snowflake schema.

Details of tables

Fact_Sales – Consists of the Grains and Facts obtained from SalesHeader and SalesDetail Tables. Here, one grain provides details of *sales quantity*, *amount*, unit price and profit, and connects with other dimensions using surrogate keys. The table contains natural keys from these tables as well as additional details from them along with the measures to be calculated as:

- SalesQuantity – *SalesQuantity* from *SalesDetail* Table
- SalesAmount - *SalesAmount* from *SalesDetail* Table
- SalesUnitPrice - SalesAmount/SalesQuantity, hence float
- SalesProfit - To identify the profit of Sales which will be dependent on UnitPrice, Cost, and Sales Quantity

Dim_Product – Dimension table containing details from Product, Product Type, and Product Category Tables to contain **all details of the product** that are needed for analysis, as well as the measures that are needed for calculation. The table contains natural keys from these tables as well as additional details from them along with the measures to be calculated:

- ProductName – *Name* of product from *Product* Table.
- ProductCost – *Cost* of product from *Product* Table
- ProductSalePrice - *Price* of product from *Product* Table
- ProductWholesalePrice – *Wholesale Price* of product from *Product* Table
- ProductSaleProfit – *ProductSalePrice - ProductCost*
- ProductWholesaleProfit – *ProductWholesalePrice – ProductCost*
- ProductProfitMargin – *ProductSaleProfit/ ProductSalePrice*
- Other details from Product Table were not necessary for our analysis or covered in Dim_Date
- ProductCategory – *ProductCategory* of product from *ProductCategory* Table.
- ProductType – *ProductType* of product from *ProductType* Table.

Dim_Channel – Dimension table containing details from Channel and Channel Category Tables to **contain all details of the channel** that are needed for analysis, as well as the measures that are needed for calculation. Each grain contains details of channel ID, channel category ID, channel Name, and channel category. The table contains natural keys from these tables as well as additional details from them as:

- ChannelName – *Channel* of product from *Channel* Table.

- ChannelCategory – *ChannelCategory* of product from *ChannelCategory* Table.

Dim_Location: Dimension Table created to contain the details of **locations of stores, customers and resellers.** Each grain contains details of location such as Address, city, state, country, and postal code. The grain of this table helps in connecting the locations of stores to find the states where multiple stores exist etc. The table contains natural keys from the tables of *Store, Customer, Reseller* tables as well as additional details from them as:

- Address, City, StateProvince, Country, PostalCode – All details from the *Store, Customer, Reseller Table*

Dim_Store: Dimension Table created to contain the **details of Stores that are required for analysis** of each store. Each grain contains details of store such as store number, store manager, and store ID. This includes StoreNumber and StoreManager details along with natural keys from the *Store* Table.

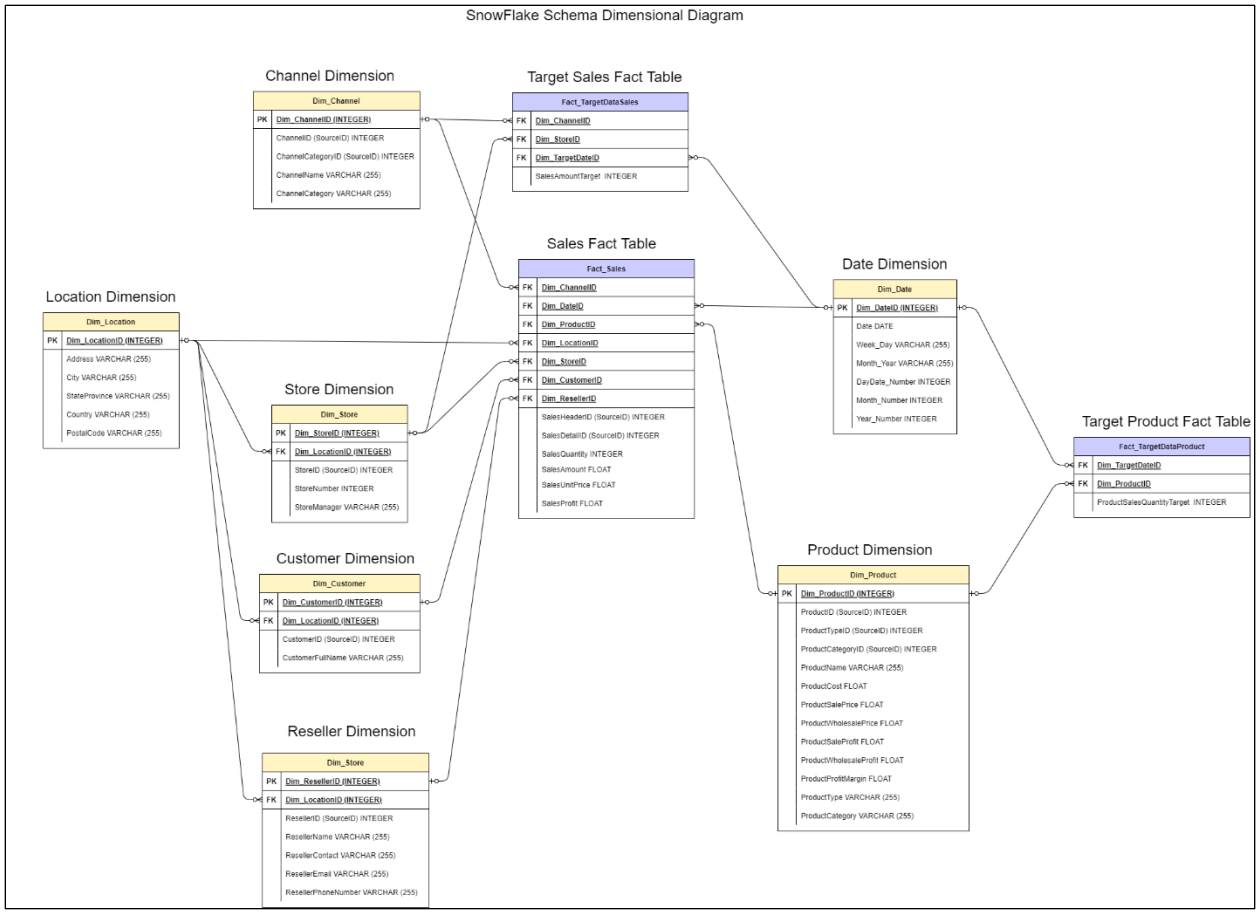
Dim_Customer: Dimension Table created to contain the **details of customers that are required for analysis**. Each grain contains details of customer ID and customer name as these are the only details required for our analysis at the maximum. These details along with natural keys come from the *Customer* Table.

Dim_Reseller: Dimension Table created to contain the **details of resellers that are required for analysis** of each store. Each grain contains details of resellers such as reseller ID, reseller name, reseller contact, reseller email and reseller phone number. These details along with natural keys come from the *Reseller* Table.

Dim_Date: Dimension Table created to contain the **details of dates of sales and purchases for** each store, customer, and reseller. Each grain contains details of date such as Date, Week of the Day, month of the Year, Day of the month, and number of the month and year itself. These details come from the DateTime values from customer, reseller, product, store, product, product type, and sales details tables.

Fact_TargetDataProduct: Fact Table created to contain the **details of dates of product sales quantity targets for the year**. Each grain contains details of product ID and Product Sales Quantity Target Value. This will help in the **actual to target comparison metric**.

Fact_TargetDataSales: Fact Table created to contain the **details of dates of sales amount targets for the year**. Each grain contains details of product ID and Product Sales Amount Target Value. This will help in the **actual to target comparison metric**.


SnowFlake Schema Dimensional Diagram
Channel Dimension
Dim_Channel
PK Dim_ChannelID (INTEGER)
ChannelID (SourceID) INTEGER
ChannelCategoryID (SourceID) INTEGER
ChannelName VARCHAR (255)
ChannelCategory VARCHAR (255)
Target Sales Fact Table
Fact_TargetDataSales
FK Dim_ChannelID
FK Dim_StoreID
FK Dim_TargetDateID
SalesAmountTarget INTEGER
Sales Fact Table
Fact_Sales
FK Dim_ChannelID
FK Dim_DateID
FK Dim_ProductID
FK Dim_LocationID
FK Dim_StoreID
FK Dim_CustomerID
FK Dim_ResellerID
SalesHeaderID (SourceID) INTEGER
SalesDetailID (SourceID) INTEGER
SalesQuantity INTEGER
SalesAmount FLOAT
SalesUnitPrice FLOAT
SalesProfit FLOAT
Date Dimension
Dim_Date
PK Dim_DateID (INTEGER)
Date DATE
Week_Day VARCHAR (255)
Month_Year VARCHAR (255)
DayDate_Number INTEGER
Month_Number INTEGER
Year_Number INTEGER
Location Dimension
Dim_Location
PK Dim_LocationID (INTEGER)
Address VARCHAR (255)
City VARCHAR (255)
StateProvince VARCHAR (255)
Country VARCHAR (255)
PostalCode VARCHAR (255)
Store Dimension
Dim_Store
PK Dim_StoreID (INTEGER)
FK Dim_LocationID (INTEGER)
StoreID (SourceID) INTEGER
StoreNumber INTEGER
StoreManager VARCHAR (255)
Target Product Fact Table
Fact_TargetDataProduct
FK Dim_TargetDateID
FK Dim_ProductID
ProductSalesQuantityTarget INTEGER
Customer Dimension
Dim_Customer
PK Dim_CustomerID (INTEGER)
FK Dim_LocationID (INTEGER)
CustomerID (SourceID) INTEGER
CustomerFullName VARCHAR (255)
Product Dimension
Dim_Product
PK Dim_ProductID (INTEGER)
ProductID (SourceID) INTEGER
ProductTypeID (SourceID) INTEGER
ProductCategoryID (SourceID) INTEGER
ProductName VARCHAR (255)
ProductCost FLOAT
ProductSalePrice FLOAT
ProductWholesalePrice FLOAT
ProductSaleProfit FLOAT
ProductWholesaleProfit FLOAT
ProductProfitMargin FLOAT
ProductType VARCHAR (255)
ProductCategory VARCHAR (255)
Reseller Dimension
Dim_Store
PK Dim_ResellerID (INTEGER)
FK Dim_LocationID (INTEGER)
ResellerID (SourceID) INTEGER
ResellerName VARCHAR (255)
ResellerContact VARCHAR (255)
ResellerEmail VARCHAR (255)
ResellerPhoneNumber VARCHAR (255)