

Solutions

Task 1: Data Gathering / Loading

1. Load Sales Data:

- Mechanism: Create a robust process to load all files from the sales folder into a single Sales fact table.
- Resilience: Ensure removing or adding files doesn't cause errors or require manual updates.

Task 2: Data Modeling

2.1 Transformations:

- Split the Country and City in the Location field.
- Correct the Date field format.

2.2 Unique Key:

- Create a GeoKey in both Sales and Geography tables.

2.3 Dimensional Queries:

- Clean SalesRep and SubCategory IDs by removing the "ID - " part.

2.4 Data Model:

- Connect all tables using the Calendar table set up in the :pbix file.

Datamodel

Data Model break down:

Tables

1. Sales (Fact Table)

- Columns: SalesID, Date, ProductID, GeographyID, SalesRepID, Units, Location, TotalRevenue, TotalCost, GrossProfit

2. Product (Dimension Table)

- Columns: ProductID, ProductName, RetailPrice, StandardCost,

CategoryID, SubCategoryID

3. Categories (Dimension Table)

- Columns: CategoryID, CategoryName

4. SubCategories (Dimension Table)

- Columns: SubCategoryID, SubCategoryName

5. Geography (Dimension Table)

- Columns: GeographyID, Country, City, GeoKey

6. SalesRep (Dimension Table)

- Columns: SalesRepID, SalesRepName

7. Calendar (Date Table)

- Columns: Date, Year, Quarter, Month, Day

Relationships

1. Sales[ProductID] → Product[ProductID]
2. Sales[GeographyID] → Geography[GeographyID]
3. Sales[SalesRepID] → SalesRep[SalesRepID]
4. Product[CategoryID] → Categories[CategoryID]
5. Product[SubCategoryID] → SubCategories[SubCategoryID]
6. Sales[Date] → Calendar[Date]

Task 3.1: Total Revenue

DAX

TotalRevenue = SUMX(Sales, Sales[Units] * RELATED(Product[RetailPrice]))

Task 3.2: Total Cost

DAX

TotalCost = SUMX(Sales, Sales[Units] * RELATED(Product[StandardCost]))

Task 3.3: Gross Profit

DAX

GrossProfit = [TotalRevenue] - [TotalCost]

Task 3.4: Gross Profit MoM Growth %

DAX

GrossProfitMoMChange% =

DIVIDE(
 [GrossProfit] - CALCULATE([GrossProfit], DATEADD(Calendar[Date], -1, MONTH)),
 CALCULATE([GrossProfit], DATEADD(Calendar[Date], -1, MONTH))
)

Task 3.5: Average Sales Per Day

DAX

AvgSalesPerDay = AVERAGEX(VALUES(Calendar[Date]), [TotalRevenue])

Task 3.7: QoQ Growth

DAX

QoQGrowth =

DIVIDE(
 [TotalRevenue] - CALCULATE([TotalRevenue], DATEADD(Calendar[Date], -1, QUARTER)),
 CALCULATE([TotalRevenue], DATEADD(Calendar[Date], -1, QUARTER))
)