Toy Store KPI Report

Project Overview

As a new Data Analyst at Maven Toys, a toy store chain with multiple locations across Mexico, your primary task is to analyze transactional data from January 2022 to September 2023. Alongside this, you will utilize data about products and store locations to create an interactive report that monitors key business metrics and high-level trends. This report will serve as a tool for the leadership team to make data-driven decisions.

Problem Statement

The goal is to build an interactive and user-friendly KPI report that allows leadership to track essential business metrics such as total orders, revenue, and profit. The report should also highlight trends across different store locations, product categories, and time periods.

Objectives

1. **Connect and profile the data**
2. **Create a relational model**
3. **Add calculated measures and fields**
4. **Build an interactive report**

Detailed Tasks Breakdown

Objective 1: Connect and Profile the Data

The first step is to connect to the source data and perform initial profiling tasks. This will allow you to understand the structure, quality, and content of the data.

Task 1: Connect to Source Data Files

- Connect to the sales, products, stores, and calendar data files (CSV format).
- Review the table structures, check for missing or null values, and verify that data types are appropriately defined.
- Identify and confirm primary and foreign keys within the tables.

Task 2: Data Profiling

- Profile the data by answering key questions:

- How many transactions are recorded?
- How many stores does Maven Toys operate?
- What are the lowest and highest-priced products?
- Add calculated columns in the calendar table to represent the 'start of month' and 'start of week' for better time-based analysis.

Objective 2: Create a Relational Model

Next, you'll define the relationships between tables and create a relational data model, which will serve as the foundation for analysis.

Task 3: Load Tables and Create Relationships

- Load the sales, products, stores, and calendar tables into the data model.
- Establish relationships between the sales table (fact table) and the products, stores, and calendar tables (dimension tables), adhering to the best practices of data modeling (star schema).

Task 4: Hierarchies and Model Adjustments

- Create a date hierarchy within the calendar table using 'start of month,' 'start of week,' and 'date' fields.
- Hide foreign key columns in the sales table from the report view to maintain clarity and focus on the necessary fields.

Objective 3: Add Calculated Measures and Fields

To enhance the data model, you will create calculated fields and measures that allow for in-depth financial analysis.

Task 5: Calculated Fields in the Sales Table

- Create calculated columns in the sales table by pulling in the 'cost' and 'price' values from the products table.
- Use these fields to compute revenue and profit for each transaction.

Task 6: Define Key Measures

- Create the following key measures:
  - **Total Orders**: A count of all orders.
  - **Total Revenue**: A sum of revenue across all transactions.
  - **Total Profit**: A sum of profit across all transactions.

Bonus Task: Advanced Measures

● Define measures for total revenue and profit that do not rely on the previously created calculated columns in the sales table for greater flexibility.

Objective 4: Build an Interactive Report

Finally, you will visualize the data by creating an interactive report that allows for drill-down analysis and quick insights.

Task 7: Create KPI Visuals

● Add KPI card visuals displaying the following metrics:
  ○ Total orders
  ○ Total revenue
  ○ Total profit for the current month
● Show the monthly trend for each metric.

Task 8: Add Slicers and Charts

● Add a slicer to filter the report by store location, enabling users to view metrics by store.
● Include a bar chart to show total orders by product category.
● Add a line chart displaying total revenue over time, using the date hierarchy for the x-axis.

Task 9: Finalize the Report

● Organize all visuals into a logical layout, ensuring the formatting is consistent and the report is visually polished.
● Adjust alignment and formatting to create a final, user-friendly report.
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