Adventure Works

About the dataset:

AdventureWorks is a fictitious company that Microsoft created for the purpose of demonstrating and testing its software products, particularly its SQL Server database management system. The AdventureWorks database is a sample database that Microsoft provides for developers to use as a tool for learning and testing SQL Server.

The AdventureWorks database includes a set of tables, views, stored procedures, and other database objects that simulate a fictional company's operations, such as sales, purchasing, and manufacturing. The database is designed to be a realistic and representative example of a real-world database, and it is often used by developers to practice writing SQL queries and developing database applications.

Project goal and objective:

The goal of this project is to create a set of reports and dashboards that provide insights into sales performance for AdventureWorks, a fictitious bicycle and accessories company. The specific objectives are to:

- Analyze sales by product, region, and time.
- Identify trends and anomalies in sales data.
- Provide actionable insights to the sales team.

Data Sources:

The primary data source for this project is the AdventureWorks database, which includes tables for sales, products, customers, and regions. The data is accessed using SQL Server and imported into Power BI using the "Get Data" feature.

Data Model:

The data model for this project includes the following tables and relationships:

- Sales: Contains information on individual sales transactions, including the product, customer, order, territory, order line, date, and sales amount.

- Products: Holds information about the products sold by AdventureWorks, including the product name, category, subcategory, color, size, and price.

- Customers: Contains information on AdventureWorks customers, including their name, address, gender, income, and contact information.

- Returns: Contains information on the returns that customers dislike, including the date, which territory, which product, and quantity.

- Regions: Contains information on the territories where AdventureWorks operates, including the continent, country, and region.

- The Sales table is linked to the Products, Customers, and Regions tables using foreign keys.

Dashboard Design:

The dashboard for this project includes:

- Sales by product category: A bar chart that shows sales by product category, with filters for region and time.

- Sales by region: A map that shows sales by region, with filters for product category and time.

- Sales trends: A line chart that shows sales trends over time, with filters for product category and region.

- Sales anomalies: A table that shows sales transactions that deviate significantly from the norm, with filters for product category and region.

Calculations and Measures:

The following calculations and measures are used in the reports.

- Sales amount: The total sales amount for each transaction.

- Sales quantity: The total quantity of products sold for each transaction.

- Average sales: The average sales amount per transaction.

- Year-to-date sales: The total sales amount for the current year.

- Previous year sales: The total sales amount for the previous year.

- Sales variance: The percentage change in sales from the previous year.

Data Refresh and Maintenance: The AdventureWorks database is updated on a weekly basis. The Power BI reports are refreshed using the "Scheduled Refresh" feature in Power BI, which is set to run once a day.

Security: Access to the Power BI reports is restricted to authorized users within the sales team. This applied by RLS feature which enables you to control which data a user can see in a report or dashboard, based on the user's role or permissions.