Case Study Assignment: Warehouse and Retail Sales Analysis

Background:

You are working for a retail company that operates physical stores and an online warehouse. The company has provided a dataset about sales, suppliers, and items for the past few years. Your task is to analyse this data to provide actionable insights that can help the company improve its operations and profitability.

Dataset Information:

CSV File Link: Open this link and download the '**Comma Separated Values File CSV**' under the Downloads and Resource section
Columns:
'YEAR': Year of the sales record.
'MONTH': Month of the sales record.
'SUPPLIER': Name of the supplier.
'ITEM CODE': Unique code for each item.
'ITEM DESCRIPTION': Description of the item.
'ITEM TYPE': Type of the item.
'RETAIL SALES': Sales made through physical stores.
'RETAIL TRANSFERS': Transfers between stores.
'WAREHOUSE SALES': Sales made through the online warehouse.
Assignment Instructions:

Part 1: Data Preparation (Python/SQL)

Download the provided dataset from Data.gov.
Import the dataset into your chosen data analysis tool (Python or SQL).
Clean the data by handling missing values, duplicates, and any inconsistencies.

Part 2: Exploratory Data Analysis (Python/SQL)

Calculate and visualise each year's total sales (retail and warehouse).

Determine the top 5 suppliers based on total sales (both retail and warehouse) for the entire dataset.
Identify the top 10 best-selling items (based on total sales) and provide their descriptions and types.

Part 3: Business Analysis (Python/SQL)

Calculate the monthly average retail sales and warehouse sales separately for each year.
Analyse whether there are any seasonal trends in sales data. Provide visualisations to support your analysis.
Calculate the total sales for each item type and identify which item type contributes the most to overall sales.

Part 4: Recommendations and Insights (Python/SQL)

Based on your analysis, provide at least three actionable recommendations for the company to improve its sales and operations. Summarise your findings and insights in a clear and concise report.

Submission Guidelines:

You can choose Python or SQL to complete this assignment, but document your code and explain each step clearly.
Your submission should include code, visualisations, and a report summarising your analysis and recommendations.

Note: Please ensure your analysis is based solely on the provided dataset and does not involve external data sources. Your ability to analyse the dataset and derive meaningful insights is the primary focus of this assignment.

Best of luck with your analysis, and we look forward to reviewing your submission!