Supermarket Sales Analysis

Project Overview

This project presents an interactive data analysis dashboard built using Python and Streamlit, designed to visualize and explore sales data from a supermarket. The application provides insights into various sales metrics and customer behaviour through meaningful visualizations.

Objective

The primary goal is to analyse supermarket sales data and extract valuable insights using data visualization tools. The dashboard allows users to:

- Upload a CSV dataset

- View key summary statistics

- Analyse gender-wise and weekday vs. weekend sales

- Explore product line performance

- Understand commonly used payment methods

Dataset Information

- **Source**: Supermarket Sales Dataset (Kaggle)

- **File Format**: CSV

- **Records**: 1000 rows

- **Fields**: 17 columns

Key Columns:

- Invoice ID, Branch, City

- Customer Type, Gender

- Product Line, Unit Price, Quantity

- Total, Date, Time, Payment

Google Colab Notebook

You can explore the EDA and visualizations using the Colab notebook here:

[Open in Google Colab] (https://colab.research.google.com/drive/1Kj9zsvoZ-Nlo5ZwBtkBzreJB8JkHQgVh#)

Tools and Technologies Used

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| Technology      | Purpose
|----------------|-------------------------------------
| Python          | Core programming language
| Pandas          | Data manipulation and preprocessing
| Matplotlib      | Static data visualization
| Seaborn         | Statistical visualization
| Streamlit       | Web application/dashboard framework
| Google Colab    | Initial data exploration (optional)
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Dashboard Features

- File upload option for CSV input

- Interactive visualizations for gender distribution

- Analysis of product line performance

- Weekday versus weekend sales comparison

- Overview of preferred payment methods

- Simple and intuitive interface

How to Run the Application

Prerequisites:

Ensure Python is installed. Then install the required libraries using:

pip install streamlit pandas matplotlib seaborn

Run the Dashboard

In your command prompt or terminal, navigate to the project directory and run:

Python -m streamlit run supermarket_dashboard.py

After running the above command, your browser will automatically open the dashboard at:

http://localhost:8501

Once open, upload the supermarket_sales.csv file when prompted.