Adidas Interactive Sales Dashboard Documentation

Overview

The **Adidas Interactive Sales Dashboard** is a data-driven web application developed using **Streamlit**. This dashboard provides an intuitive interface for visualizing and analyzing Adidas sales data across multiple dimensions such as retailers, states, regions, and time. It utilizes interactive visualizations from **Plotly** and enables dynamic data exploration through expanders and download buttons for accessing raw and processed data.

Features

1. Interactive Dashboard

- **Retailer Sales Analysis**: Displays total sales by retailer using a bar chart.
- **Monthly Sales Trends**: A line chart illustrating sales trends over time.
- **State-wise Sales and Units Sold**: Combined bar and line chart comparing sales and units sold across states.
- **Regional Sales Analysis**: Treemap visualization of sales by region and city.

2. Dynamic Data Views

- Expandable sections allow users to view grouped data for retailers, monthly sales, states, and regions.
- Users can view the raw dataset in an organized format.

3. Data Download Options

- CSV downloads are available for:
    - Retailer-wise sales.
    - Monthly sales.
    - State-wise sales and units sold.
    - Sales by region and city.
    - Raw data.

4. Responsive Layout

- Optimized for wide-screen usage with adaptive column layouts.
- Visualizations and components adjust seamlessly to different screen sizes.

Tools and Libraries Used

- **Streamlit**: Frontend framework for building the interactive dashboard.
- **Pandas**: Data manipulation and analysis.
- **Plotly**: Interactive visualizations including bar, line, and treemap charts.
- **Pillow**: Image processing for displaying the Adidas logo.

- **Datetime**: Dynamic display of the last update time.

Data Sources

The application uses an **Excel file** containing the Adidas sales dataset. Key columns include:

- Retailer: Retailer names.
- TotalSales: Total sales revenue.
- InvoiceDate: Date of sales transactions.
- UnitsSold: Number of units sold.
- Region and City: Geographical dimensions.

Project Components

1. Header

- **Logo Display**: Adidas logo is displayed in the top-left corner.
- **Title**: A stylized title centered at the top of the page.
- **Last Updated**: Shows the current date as a timestamp.

2. Sales Visualizations

- **Bar Chart**: Sales by retailer.
- **Line Chart**: Monthly sales trends.
- **Combination Chart**: Sales and units sold by state with dual axes.
- **Treemap**: Sales distribution by region and city.

3. Data Exploration

- Expandable sections for viewing grouped data.
- Download buttons for saving insights in CSV format.

How to Use

1. **Run the Application**:
    - Install dependencies:
    - pip install -r requirements.txt
    - Launch the Streamlit app:
    - streamlit run app.py
2. **Navigate the Dashboard**:
    - Use interactive visualizations to explore sales data.

- Expand sections to view grouped data.
- Download datasets using the provided buttons.

3. **Customization**:
    - Modify the dataset path (df = pd.read_excel(...)) to use your own data.
    - Update visualizations and styles as needed.

Key Visualizations and Insights

1. **Retailer Analysis**:
    - Identify top-performing retailers based on sales.
2. **Sales Trends**:
    - Monitor sales growth or decline over time.
3. **State-Wise Comparison**:
    - Compare sales revenue and units sold across states.
4. **Regional Distribution**:
    - Understand sales concentration by region and city.

Limitations

- **Static Dataset**: Currently, the application uses a static Excel file. Dynamic integration with live data sources (e.g., databases or APIs) could enhance functionality.
- **Device Compatibility**: Optimized for desktop use; smaller screens may not display all elements effectively.

Future Enhancements

1. **Live Data Integration**:
    - Connect the application to databases or APIs for real-time data updates.
2. **Advanced Filters**:
    - Enable users to filter data by date range, region, or other dimensions.
3. **Predictive Analytics**:
    - Incorporate machine learning models to forecast sales trends.