

User Manual — Dynamic Pricing Strategies for E-Commerce

Overview

This application is an interactive Streamlit dashboard built on the Myntra Fashion dataset. It helps users analyze sales data, predict demand, forecast future trends, and generate pricing insights for business decisions.

System Requirements

Python 3.8 or higher is required along with Streamlit, Pandas, NumPy, Plotly, Scikit-learn, and Statsmodels. The main files are app.py and Myntra_Clean_Data.csv.

How to Run

Open a terminal in the project folder, install packages using `pip install -r requirements.txt`, and start the app with `streamlit run app.py`.

Navigation

Use the sidebar to switch between Dashboard Overview, Data Quality Checks, Demand Prediction, Time Series Forecasting, and Pricing & Revenue Insights pages.

Global Filters & Download

Filters allow analysis by category, season, weekday, date range, and product ID. The Download button exports the filtered dataset as a CSV file.

Dashboard Overview

Displays KPIs, sales trends, seasonal patterns, price-demand relationships, and competitor comparisons.

Data Quality Checks

Shows missing values, duplicate rows, and descriptive statistics to ensure data reliability.

Demand Prediction

Users enter pricing, discount, competitor price, inventory, season, and weekday to predict units sold, expected revenue, and profit.

Forecasting

Users choose ARIMA or SARIMA models, set parameters and forecast horizon, and view future demand curves and tables.

Pricing Insights

Provides analysis of price sensitivity, discount impact, seasonal revenue trends, inventory effects, and competitor influence.

Best Practices

Review data quality first, test multiple scenarios, apply realistic pricing inputs, and use seasonal models.

Summary

The platform combines analytics, prediction, and forecasting to support data-driven pricing decisions.