

Sales Forecasting Application - User Manual

1. Run locally

- Overview:

This guide will walk you through how to download and run the Sales Forecasting project on your local machine. This allows you to forecast future sales based on historical data using time-series analysis techniques like ARIMA, SARIMA, or regression models.

- Requirements:

1. System Requirements:

- **Python version: 3.7 or higher**

2. Python libraries:

- Pandas
- Numpy
- Matplotlib
- Seaborn
- Scikit-learn
- Streamlit
- Xgboost
- Os
- Joblib

- Step by step installation guide:

- Step 1 : Download the Repository:

Go to: [Repo link](#)

Click the green "Code" button → Download ZIP

Extract the ZIP file to your computer

Open Terminal/Command Prompt and navigate to the folder

```
cd path/to/Sales-Forecasting-and-Optimization
```

- Step 2 : Install Required Packages:

```
pip install -r requirements.txt
```

- Prepare your data :

The model expects a CSV file with at least two columns:

- Date: Date of sale (format: YYYY-MM-DD)
- Sales: Total sales amount

Place your dataset in the data/ folder (or adjust the script accordingly).

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- Run the Forecasting Script :

Assuming the main forecasting script is named “Model_Train.ipynb”, run it with:

```
jupyter notebook Source_Code/Model_Train.ipynb
```

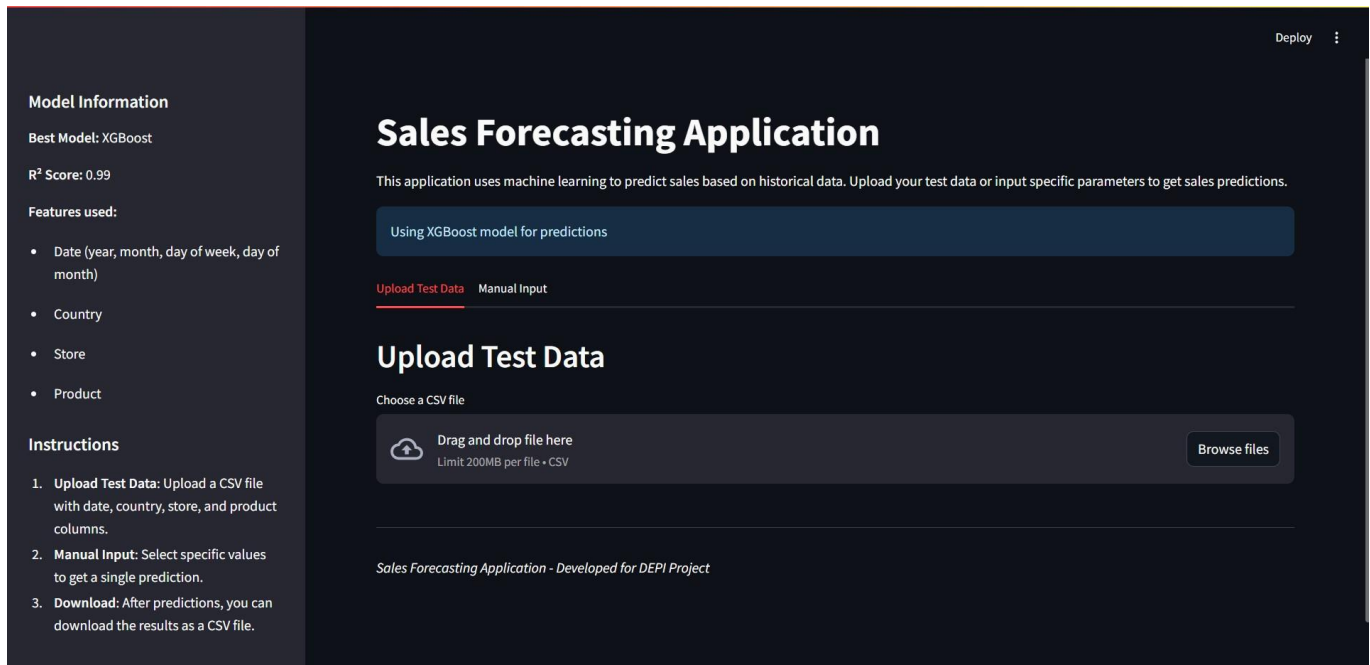
Then run “app.py”

```
streamlit run Source_Code/app.py
```

2. Uploading Test Data

This section allows you to upload a CSV file containing the sales data you want to forecast. You can drag and drop the file or browse your system. The file must include the following columns:

- Date (year, month ,day of weak, day of month)
- Country
- Store
- Product



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3. Manual Input

This Section allows you to enter the forecasting parameters manually:

- Date (e.g., 2025/05/10)
- Country (e.g., Finland)
- Store (e.g., KaggleMart)
- Product (e.g., Kaggle Hat)

Click “Predict Sales” to see the forecast.

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Model Information

Best Model: XGBoost

R² Score: 0.99

Features used:

- Date (year, month, day of week, day of month)
- Country
- Store
- Product

Instructions

1. **Upload Test Data:** Upload a CSV file with date, country, store, and product columns.
2. **Manual Input:** Select specific values to get a single prediction.
3. **Download:** After predictions, you can download the results as a CSV file.

Deploy ⋮

Sales Forecasting Application

This application uses machine learning to predict sales based on historical data. Upload your test data or input specific parameters to get sales predictions.

Using XGBoost model for predictions

Upload Test Data

Manual Input

Manual Input

Date

2025/05/10

Store

KaggleMart

Country

Finland

Product

Kaggle Hat

Predict Sales

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