



# Sales Data Analysis & Dashboard

Interactive Sales Insights using Python & Power BI

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## Repository

👉 <https://github.com/fatimatahir229-ctrl/Fatima-Code>

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## Project Overview

This project demonstrates a complete sales data analysis workflow from **data cleaning & transformation** in Python to **interactive visual storytelling** in Power BI. It highlights key monthly sales trends and actionable business KPIs using real-world datasets. The cleaned output also powers a dynamic dashboard to assist stakeholders in decision-making.

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## Technologies Used

Layer	Tools / Libraries
Data Processing	Python, Pandas, NumPy
Visualization	Matplotlib / Seaborn
Dashboard	Power BI
Reporting	Github Markdown

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## Repository Structure

```
Fatima-Code
├── Apple project.ipynb
├── DATAANALYSIS.ipynb
├── SalarySurveyAnalysis.ipynb
├── jsonscraap.ipynb
├── ... (other notebooks)
└── cleaned_sales_data.csv  ← exported clean dataset for Power BI
```



## 1. Data Cleaning & Preparation (Python)

In `DATAANALYSIS.ipynb`, the following steps are performed:

- 👉 Removed duplicates
- 👉 Handled missing values
- 👉 Converted dates to datetime
- 👉 Created `TotalSales` as a derived metric

**Example Python snippet:**

```
# Remove duplicates
df = df.drop_duplicates()

# Convert Date column
df['Date'] = pd.to_datetime(df['Date'], errors='coerce')

# Create TotalSales
df['TotalSales'] = df['Quantity'] * df['UnitPrice']
```



## 2. Exploratory Analysis

Computed key summaries such as:

- **Monthly Sales Trend**
- **Top 5 Products by Revenue**
- **Sales Descriptive Statistics**

**Visualization:** Line charts and bar plots to show trends and performance over time.



## 3. Power BI Dashboard

Load the exported file `cleaned_sales_data.csv` into Power BI Desktop.

**Power BI Features to Include:**

- 👉 Line chart — *Monthly Total Sales*
- 👉 Top-Product Bar charts
- 👉 KPI Cards — Revenue, Avg Order Value
- 👉 Filters — Date, Category, Region (if available)

Use slicers for interactivity & drill-downs.

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## How to Run This Project Locally

### 1. Clone the repo

```
git clone https://github.com/fatimatahir229-ctrl/Fatima-Code.git
```

### 2. Install Python dependencies

```
pip install pandas numpy matplotlib
```

### 3. Open Jupyter Notebook

```
jupyter notebook
```

4. Run `DATAANALYSIS.ipynb` to clean and export data for Power BI.

5. Open Power BI Desktop and import `cleaned_sales_data.csv`.

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## Project Outcomes

- Cleaned & transformed sales dataset
  - Monthly sales visualization & trend analysis
  - Interactive dashboard ready for stakeholders
  - Portfolio-ready Power BI reporting
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## Dashboard Preview

(Add screenshots of your Power BI visuals here to impress viewers)

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## Future Enhancements

- Add forecasting (ex: sales projections)
  - Implement category & region drill-downs
  - Add DAX measures for advanced KPIs
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