Detailed Project Report

Author	Shubham Gaikwad
Company	iNeuron.ai
Project Name	Amazon Sales Data Analysis

Contents

1.Introduction .....

2. Data Description .....

3 Architecture .....

4. Workflow .....

5.Technologies .....

6.Conclusion .....

7.Recommendations .....

8.Future Scope .....

1. Introduction

The purpose of this project report is to describe the results of an Amazon sales data analysis performed in Jupyter Notebook utilising Exploratory Data Analysis (EDA) techniques. The purpose is to generate business intelligence and insights from sales data that can be utilised to make informed decisions, discover patterns, and increase overall sales and profitability.

2. Data Description

The Amazon Sales dataset, which includes raw sales data such as sales transactions, products, revenue, costs, and timestamps, is the major data source for this BI solution.

3 Architecture:

This Architecture describes the approach and procedures for performing Business Intelligence (BI) analysis on Amazon Sale data in Jupyter Notebook using Exploratory Data Analysis (EDA). The goal is to get useful insights and create data-driven decisions in order to improve business performance and sales tactics.

4. Workflow:

Dataset: The first stage in the workflow is to collect and obtain the necessary dataset for the sales and profit analysis

Tool (Jupyter Notebook): For exploratory data analysis (EDA) and data manipulation, Jupyter Notebook used.

ETL: The dataset extracted from the source (e.g., Drive, Excel file) and loaded into Jupyter Notebook for further analysis during the ETL phase.

Data Pre-processing: During the data pre-processing step, the dataset is prepared for sales and profit analysis.

Analysis of Sales by Month and Year: In this part, we did a thorough examination of Amazon sales data by month and year. The following significant findings were made:

- Monthly Sales Trends: We detected seasonality trends in sales and observed changes over time.

- Yearly Sales Growth: The yearly sales growth was examined in order to comprehend the total sales performance throughout time.

- Best-Performing Months: We identified the months with the highest sales and investigated possible explanations for their success.

- Low-Performance Months: Low-performing months were identified, and solutions to increase performance were proposed.

Sales Metrics and Item Analysis: This section analysed many sales indicators and items. The following aspects were examined:

- Metrics for Sales Overview: To analyse overall sales performance, we examined key sales indicators such as Total Revenue, Average Order Value, Conversion Rate, and so on.

- Best and worst-selling items: Based on sales volume, the best-selling items were identified.

Sales and Profitability Analysis: The final section of the report delved into sales and profitability analysis. The following points were covered:

- Profitability Assessment: completed a profitability analysis, successfully identifying goods with significant profit margins as well as those with lower margins.

- Growth Prospects: Based on the investigation, prospective opportunities for sales growth and increased profitability were suggested.

Technologies:

Microsoft Excel: Microsoft Excel is a popular spreadsheet tool that allows for data processing, visualisation, and analysis

Jupyter Notebook: Jupyter Notebook is an interactive computing environment that enables data analysts to create and share documents that integrate live code, visualisations, and explanatory prose

NumPy: NumPy is a key Python module for numerical computing. It supports arrays and matrices, allowing for the efficient handling of big datasets and mathematical calculations.

Pandas: pandas are a strong NumPy-based toolkit that provides data structures and functions for rapid data manipulation and analysis.

Matplotlib: Matplotlib is a popular Python data visualisation toolkit. It enables users to produce static, interactive, and publication-quality visualisations such as line plots, bar charts, and scatter plots, among other things

Seaborn: Seaborn is a Matplotlib-based statistical data visualisation library. It offers a higher-level interface for producing visually appealing and informative visualisations.

6. Conclusion

The Amazon sales data study revealed useful information about sales trends, customer behaviour, and profitability. The insights can be used to inform data-driven decisions, improve sales techniques, and boost overall corporate success. This analysis' business intelligence can help you stay competitive, improve customer happiness, and increase revenue.

7.Recommendations

Based on the findings, the following recommendations are made:

- Run focused marketing initiatives throughout peak months to take advantage of strong sales seasons.

- Emphasise top-selling items in order to boost their visibility and promote more sales.

- Look for ways to expand into profitable product categories.

- Improve price tactics to attract more customers while maintaining profitability.

- Constantly monitor and optimise costs in order to increase overall profitability.

Amazon can achieve sustainable development, improve customer experience, and maintain its position as a leading e-commerce platform by embracing these ideas.

8. Future Scope:

The current analysis offers a glimpse of sales data and insights at a specific point in time. It is recommended to undertake regular data analysis and stay current with market trends to ensure continual improvement and adaptation. Furthermore, using machine learning and predictive analytics approaches may allow for more accurate sales forecasting and better decision-making.