Low Level Design Document

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

Contents

Introduction: The purpose of the LDD, or Low-level design document (LLDD), is to provide the core logic design of the actual programme code for the Amazon Sales Data Analysis. LDD defines class diagrams with methods and relationships between classes and programme specifications. It explains the modules so that the programmer can immediately code the programme from the document.

Inspiration: Amazon is an American Multi-National Company whose business interests include E-commerce, where they buy and store the inventory, and take care of everything from shipping and pricing to customer service and returns. I've created this dataset so that people can play with this dataset and do a lot of things as mentioned below

- Dataset Walkthrough
- Understanding Dataset Hierarchy
- Data Pre-processing
- Exploratory Data Analysis
- Data Visualization

Data Description: Sales analytics is the practice of generating insights from sales data, trends, and metrics to set targets and forecast future sales performance. Sales analysis is mining your data to evaluate the performance of your sales team against its goals. It provides insights about the top performing and underperforming products/services, the problems in selling and market opportunities, sales forecasting, and sales activities that generate revenue.

Data:

- Cust Key
- Date Key
- Discount Amount
- Invoice Date
- Invoice Number
- Item Class
- Item Number
- Item
- Line Number
- List Price
- Order Number
- Promised Delivery Date
- Sales Amount
- Sales Amount Based on List
- Price Sales
- Cost Amount
- Sales Margin
- Amount Sales
- Price
- Sales Quantity
- Sales Rep

Target: Target market analysis is an assessment of how product or service fits into a specific market and where it will gain the most.

- Sales trend month wise, year wise, yearly month wise
- Sales Comparison
- Most 10 items sold, and Least 10 items sold
- Total sales amount
- Total sales quantity
- Average sales amount
- Average sales quantity
- Total sales margin amount
- Average sales margin amount
- Total discount amount
- Total cost amount
- Total list price amount
- Total profit amount

A. Monthly and annual sales analysis:

The purpose of this research is to discover sales trends throughout months and years, providing insights into seasonality and growth patterns.

- Load the Amazon sales data into Jupyter Notebook; - Perform exploratory data analysis (EDA) to understand the data structure and identify any missing or inconsistent values.

- Extract the month and year from the date column to make new columns for "Month" and "Year."

- Sort the data by "Month" and "Year" and total the sales for each group.

- To visualise the sales patterns over time, use line graphs, bar plots, or any other appropriate visual.

B. Analysis of Sales Metrics and Items:

The goal of this analysis is to get insight into numerous sales and the performance of particular items.

Approach: - Execute the cleansed Amazon sales data from the previous step.

- Determine critical sales data such as total revenue, average order value, total units sold, and so on.

- Examine the top-selling items in terms of quantity sold or revenue produced.

- Investigate sales performance across several product categories, brands, or other relevant factors.

- Identify any outliers or anomalies in sales data that require further investigation.

C. Analysis of Sales and Profitability:

The goal of this study is to understand the relationship between sales and profitability and to find areas for profit improvement.

Approach: Combine the cleansed sales data with extra information on product costs, transfer, and other relevant expenses.

- Subtract the total cost from the revenue to determine the profitability of each sale.

- Analyse profitability trends over time and identify periods of high and low profitability.

- Analyse the link between sales volume and profitability for various items or categories.

- Perform a correlation study to determine any elements that have a major effect on profitability.

Documentation: Provide detailed explanations of each phase of the analysis.

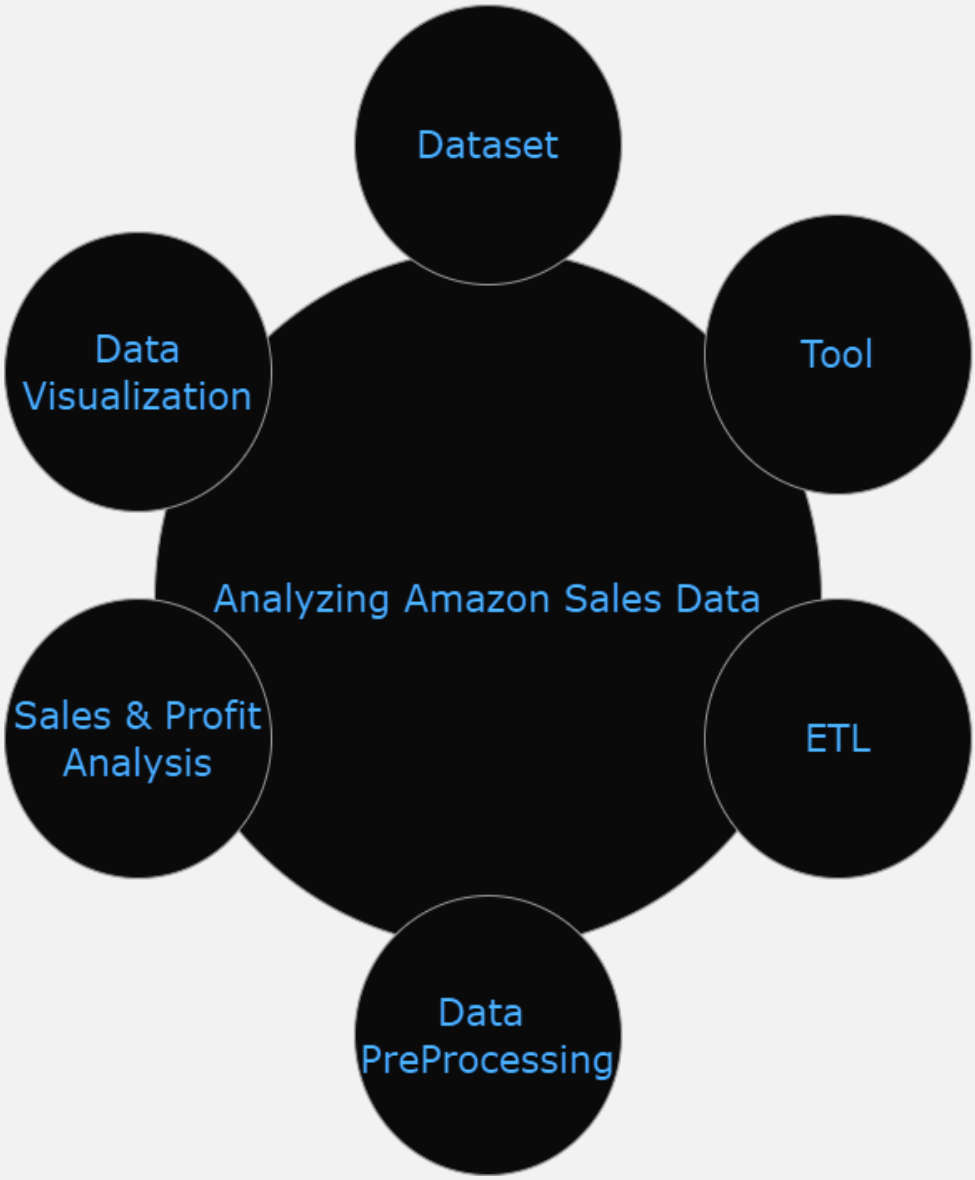
- Provide information on data cleansing, transformation, and pre-processing activities.

- Document the Jupyter Notebook's tools and libraries.

- Present the results and ideas from each analysis.

- Include pertinent charts, graphs, and visualisations to support up your results.

Work Flow Diagram:



Technologies Used:

Conclusion: Based on the insights collected, describe the key findings from the sales analysis, highlight important patterns, and provide actionable recommendations for improving business intelligence and sales strategies.