Low-Level Design

ANALYZING AMAZON SALES DATA

Revision Number - 1.2

Last Date of Revision - 27/09/2022

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Document Control

Date	Version	Description	Author
19/09/2022	1.0	Introduction, Problem Statement	Aditya Sahoo
22/09/2022	1.1	Dataset Information, Architecture Description	Aditya Sahoo
27/09/2022	1.2	Final Revision	Aditya Sahoo

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Abstract

Amazon Sales data refers to sales, high performing sellers and several other data points. There are millions of Amazon sellers around the world. Nearly half of them are self-employed and live off their ecommerce/retail businesses (47%), and 22% earn income from their Amazon businesses alone. Amazon sales data Analysis focuses on the process of analysing consumer behaviour, sales, and several other attributes in order to make improved, data-driven decisions. It is key to successfully sustaining their businesses and earning profits and for this purpose, they analyse different metrics like sales, Sales Quantity, Discount rate, Sales over years etc.

By analysing different metrics, you will be able to increase and improve your performance in terms of sales, Items to be sold and discount rates etc. Analysis of the sales data the main factor that contributes to sellers improving their business and increasing their revenue. They can better understand the market trends and customers' buying behaviours and help them cater to what the customers really want. In the world of rising new technology and innovation, E-commerce industry is advancing with the role of Data Science and Analytics.

Data analysis can help them to understand their business in a quiet different manner and helps to improve the quality of the service by identifying the weak areas of the business. This study demonstrates the how different analysis help to make better business decisions and help analyse customer trends and satisfaction, which can lead to new and better products and services. Different analysis performed to get the key insights from this data based on which business decisions will be taken.

1. Introduction

1.1 What is Low-Level Design Document?

The goal of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Sales Analysis dashboard. LLDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 What is Scope?

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

2. Problem Statement

Sales management has gained importance to meet increasing competition and the need for improved distribution methods to reduce cost and increase profits. Today, sales management is the most important function in a commercial and business enterprise. Do ETL: Extract-Transform-Load some Amazon dataset and find for me Sales-trend -> month-wise, year-wise, yearly-month wise. Find key metrics and factors and show the meaningful relationships between attributes.

3. Dataset Information

- Invoice Date: Day on which Invoice generated.
- Discount Amount: Total discount provided on any item.
- Sales Amount: Total Sales Price of an Item.
- Sales Margin Amount (Profits): Sales Margin Amount is a difference of Sales Cost Amount & Sales Amount.
- Sales Cost Amount: Total Cost Price of any Item.
- Sales Price: Sales Price of any particular Item.
- List Price: Basic Price of an Item as published on the price list.
- Sales Rep: A person whose job is to sell products or services for a company.
- U/M: Unit of Measure
- CustKey: It is a Unique Number on the Invoice that is used to reference customers' account

4. Architecture
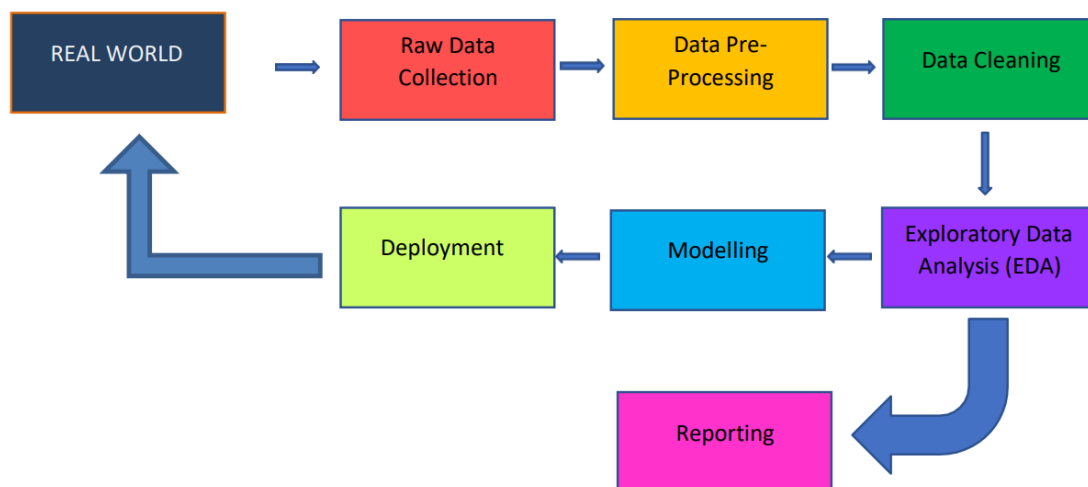
4.1 Architecture Description

1. Raw Data Collection
The Dataset was taken from iNeuron's Provided Google Drive link.

2. Data Pre-Processing
Before building any model, it is crucial to perform data pre-processing to feed the correct data to the model.

3. Data Cleaning
Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset.

4. Exploratory Data Analysis (EDA)
Exploratory Data Analysis refers to the critical process of performing initial investigations on data to discover patterns, spot anomalies, test hypotheses and check assumptions with the help of summary statistics and graphical representations.

5. Reporting
Reporting is a most important and underrated skill of a data analytics field. Because being a Data Analyst you should be good in the easy and self-explanatory report because your model will be used by many stakeholders who are not from a technical background.

6. Modelling Data
Modelling is the process of analysing the data objects and their relationship to the other objects. It is used to analyse the data requirements that are required for the business processes. The data models are created to store the data in a database. The Data Model's main focus is on what data is needed and how we have to organize data rather than what operations we have to perform.

7. Deployment
Created a Power BI Dashboard.

2943K
Total Order Qty.

Year | Select all | 2017 | 2018 | 2019

186M
Revenue

Revenue Vs. Target
182.51M
186.18M
0.00M — 372.36M

Order Qty. Vs. Target
3M
3M
0M — 6M

Revenue by Year

Year	Revenue
2017	87M
2018	21M
2019	78M

Item	Revenue
Washington Strawberry Drink	61,477.07
Washington Orange Juice	76,343.03
Washington Mango Drink	2,05,469.96
Washington Diet Soda	3,62,856.75
Washington Diet Cola	13,608.40
Washington Cream Soda	4,46,431.53
Washington Cranberry Juice	78,706.32
Washington Cola	1,12,156.52
Washington Berry Juice	12,227.85
Washington Apple Juice	99,613.05
Washington Apple Drink	6,32,530.40
Walrus White Zinfandel Wine	26,78,643.25
Walrus Light Beer	4,01,139.11
Walrus Imported Beer	38,841.50
Walrus Chardonnay	86,533.50
Urban Small Eggs	36,577.39
Total	**18,61,81,367.19**

Revenue By Month

8.7M, 7.6M, 8.7M, 8.8M, 5.7M, 6.4M, 6.4M, 7.6M, 3.2M, 5.1M, 7.7M, 7.2M, 6.5M, 7.2M
Jan 2017 — Jul 2017 — Jan 2018 — Jul 2018 — Jan 2019 — Jul 2019

Top 5 Items By Revenue

- Ebony Squash 5.38M
- Better Canned Tuna in Oil 5.69M
- Red Spade Pimento Loaf 5.71M
- Better Large Canned Shrimp 15.45M
- High Top Dried Mushrooms 13.37M

Top 5 Items By Order Qty.

Item	Order Qty.
Better Large Canned Shrimp	590K
High Top Dried Mushrooms	377K
Better Canned Tuna in Oil	267K
Walrus Chardonnay	212K
Red Spade Pimento Loaf	163K

100% / 27.7%

Top 10 Customers By Revenue

Revenue 3.11M — 11.40M

CustKey	Revenue
10021485	11.4M
10009676	10.8M
10025024	9.3M
10021300	8.7M
10025052	5.4M
10025737	5.2M
10025039	3.3M
10025919	3.3M
10002154	3.1M
10019194	3.1M