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Low Level Design

AMAZON SALES DATA ANALYSIS

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1. Introduction

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 Budget 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.

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.

Project Introduction

The goal of this project is to perform ETL processes on the Amazon Sales Dataset and to create an interactive dashboard of the same, which will allow the user to study and identify useful trends and patterns pertaining to Sales and Cost, which will further enable the user to make informed data-driven decisions to maximize profit.

2. Problem Statement

Sales management has gained importance to meet increasing competition and the need for improved methods of distribution to reduce cost and to increase profit. Sales management today is the most important function in a commercial and business enterprise.

3. Dataset information

CustKey: Primary key for customer dataset

Discount Amount: Discount given for each product

Invoice date: The date on which the item was ordered.

Invoice number: Unique invoice number for each customer.

Item: Item name

Line number: Unique line number

List Price: Price listed for each item

Order Number: Unique Order Number.

Promised Delivery Date: Estimated delivery date

Sales Quantity: Number of units ordered

Sales Amount based on list Price: [List Price] * [Sales Quantity]

Sales Amount: [Sales Amount Based on List Price] - [Discount Amount]

Sales Cost Amount: Cost of Goods Sold (Expenses related to production, storage and delivery of goods)

Sales Margin Amount: [Sales Amount] - [Sales Cost Amount]

Sales Price: [Sales Amount] / [Sales Quantity]

Sales Rep: Sales Representative

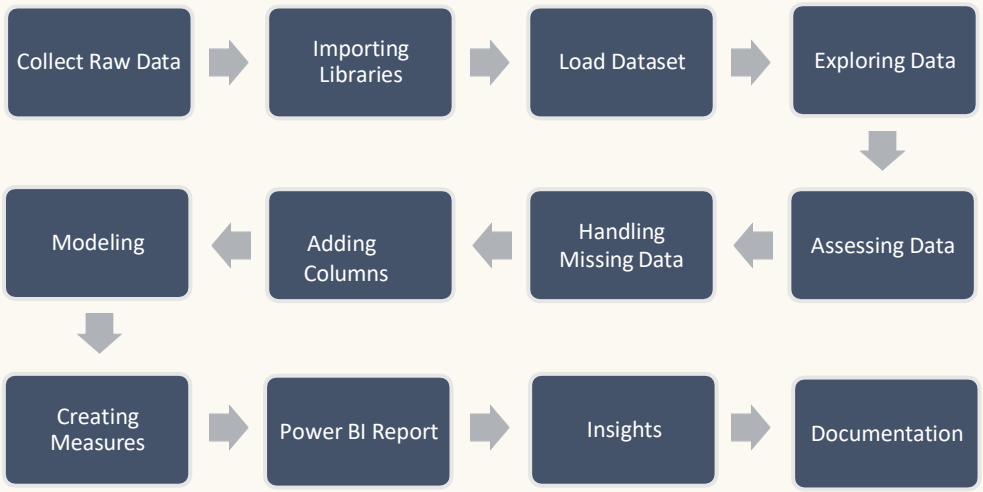
U/M: Unit of measure (EA - Each, SI - Some SI unit like kgs or galloons, PR - Pair)

Year: Year of order

Month: Month of order

Quarter: Quarter of a year (Q1- Jan to Mar, Q2 - Apr to Jun, Q3 - Jul to Sep, Q4 - Oct to Dec)

4. Architecture



Collect Raw Data - This step involves extracting the data from different sources relevant to the problem statement or obtaining data from the client.

Importing Libraries – Import analysis related python libraries example – Pandas, Numpy, Matplotlib, datetime, etc.

Data Wrangling – Contains following steps - Gathering data, assessing data, handling missing data, adding new columns and removing redundant ones.

Exploring Data – Once the data is loaded and pre-processed, we perform data analysis using python libraries and Business Intelligence tools like Power BI

Data Modelling - Data Modelling is one of the features used to connect multiple data sources in BI tool using a relationship.

A relationship defines how data sources are connected with each other and you can create interesting data visualizations on multiple data sources.

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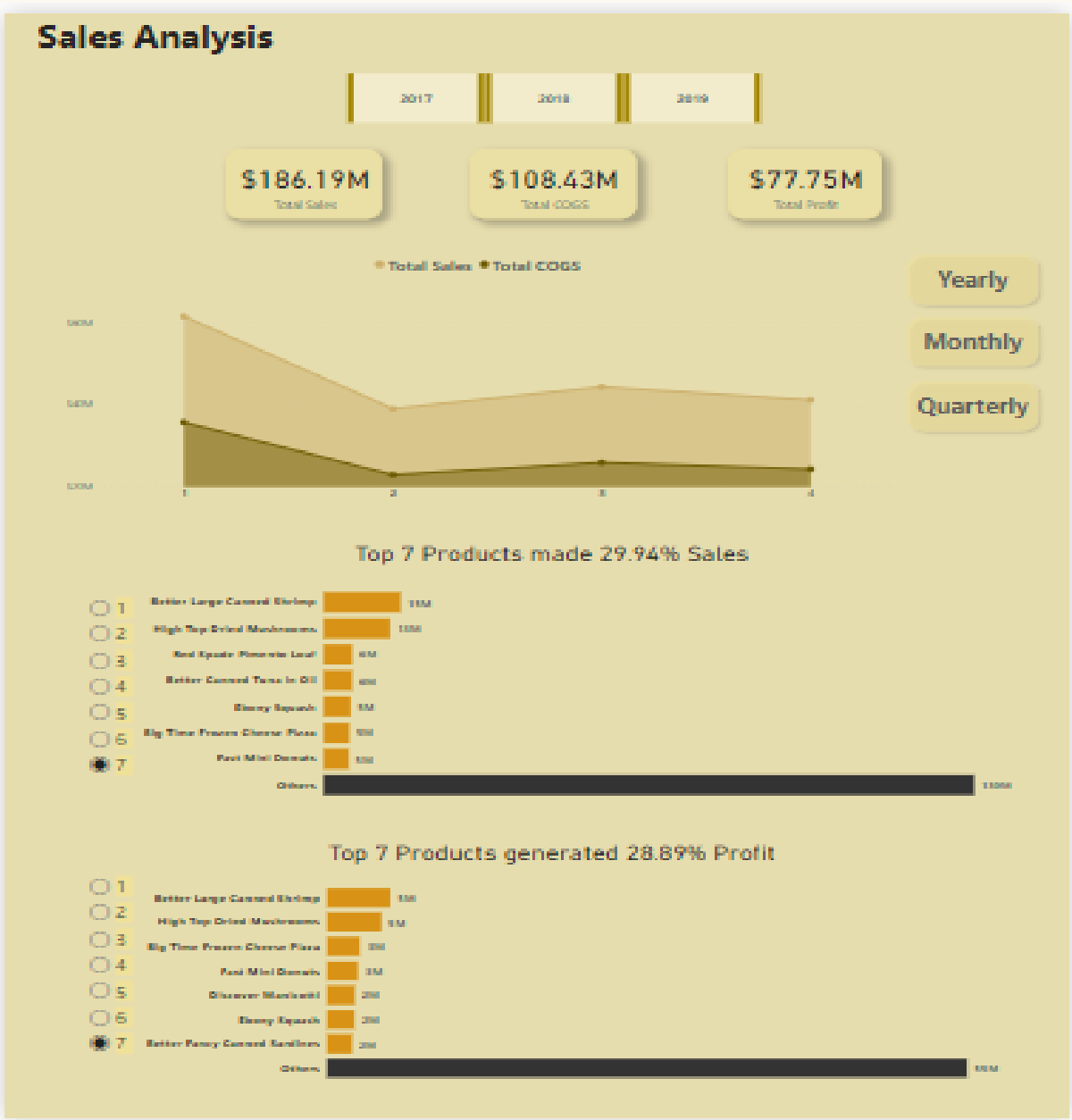
Sales Analysis
2017
2018
2019
$186.19M
Total Sales
$108.43M
Total COGS
$77.75M
Total Profit
Total Sales
Total COGS
Yearly
Monthly
Quarterly
Top 7 Products made 29.94% Sales
Top 7 Products generated 28.89% Profit