Low Level Document

Amazon Sales and Revenue

Document Version Control :

Date	Version	Description	Author
21/01/2022	0.1	First Version of Complete LLD	Amit Sangwan

Content :

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 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.

1.3 Project Introduction

Sales management has gained importance to meet increasing competition and the need for improved methods of distribution to reduce cost and to increase profits. The objective of this project is to perform data analysis and visualisation and built dashboards to provide insights that can help in making data driven decisions to increase sales and revenue of the company.

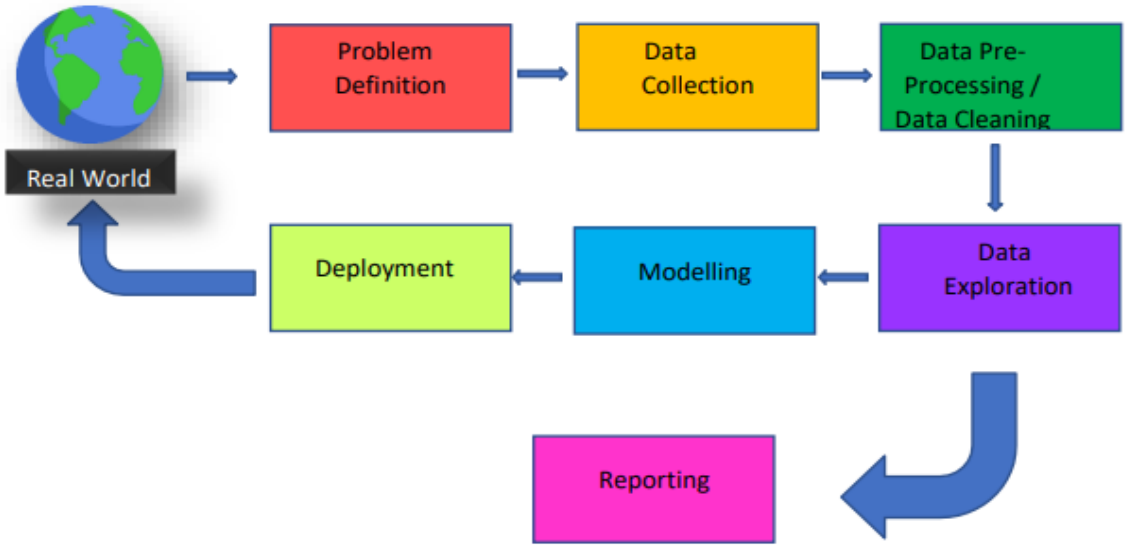
2. Problem Statement :

The objective of this project is to analyse the Sales and Revenue trend. This project will help in identifying major markets in terms of Sales and Revenue.

3. Dataset Information :

- Order ID : Unique Order ID number per Order
- Product : Name of ordered Product
- Quantity Ordered : Number of Items Ordered
- Price Each : Price of one item (in $)
- Order Date : Date when order was placed
- City : City from where order was placed
- State : State from where order was placed
- Category : Category of the ordered Product

4. Architecture :



5. Architecture Description :

5.1 Raw Data Collection :

The dataset is an open source and taken from Kaggle website.

5.2 Data Pre-processing and Transformation :

Before building any model, it is crucial to perform data pre-processing and transformation to feed the correct data to the model to analyse and visualise the data. The process includes :

a) Handling Null/Missing Values :

There were only few rows which were completely null, so those values were removed from the dataset.

Raw Data

Order ID	Product	Quantity Ordered	Price Each	Order Date	Purchase Address
141234	iPhone	1	700	01/22/19 21:25	944 Walnut St, Boston, MA 02215
141235	Lightning Charging Cable	1	14.95	01/28/19 14:15	185 Maple St, Portland, OR 97035
141236	Wired Headphones	2	11.99	01/17/19 13:33	538 Adams St, San Francisco, CA 94016
141237	27in FHD Monitor	1	149.99	01-05-2019 20:33	738 10th St, Los Angeles, CA 90001
141238	Wired Headphones	1	11.99	01/25/19 11:59	387 10th St, Austin, TX 73301
141239	AAA Batteries (4-pack)	1	2.99	01/29/19 20:22	775 Willow St, San Francisco, CA 94016
141240	27in 4K Gaming Monitor	1	389.99	01/26/19 12:16	979 Park St, Los Angeles, CA 90001
141241	USB-C Charging Cable	1	11.95	01-05-2019 12:04	181 6th St, San Francisco, CA 94016
141242	Bose SoundSport Headphones	1	99.99	01-01-2019 10:30	867 Willow St, Los Angeles, CA 90001
141243	Apple Airpods Headphones	1	150	01/22/19 21:20	657 Johnson St, San Francisco, CA 94016
141244	Apple Airpods Headphones	1	150	01-07-2019 11:29	492 Walnut St, San Francisco, CA 94016
141245	Macbook Pro Laptop	1	1700	01/31/19 10:12	322 6th St, San Francisco, CA 94016
141246	AAA Batteries (4-pack)	3	2.99	01-09-2019 18:57	618 7th St, Los Angeles, CA 90001
141247	27in FHD Monitor	1	149.99	01/25/19 19:19	512 Wilson St, San Francisco, CA 94016
141248	Flatscreen TV	1	300	01-03-2019 21:54	363 Spruce St, Austin, TX 73301
141249	27in FHD Monitor	1	149.99	01-05-2019 17:20	440 Cedar St, Portland, OR 97035
141250	Vareebadd Phone	1	400	01-10-2019 11:20	471 Center St, Los Angeles, CA 90001
141251	Apple Airpods Headphones	1	150	01/24/19 08:13	414 Walnut St, Boston, MA 02215
141252	USB-C Charging Cable	1	11.95	01/30/19 09:28	220 9th St, Los Angeles, CA 90001
141253	AA Batteries (4-pack)	1	3.84	01/17/19 00:09	385 11th St, Atlanta, GA 30301
141254	AAA Batteries (4-pack)	1	2.99	01-08-2019 11:51	238 Sunset St, Seattle, WA 98101

b) Data Transformation :

From raw dataset, we have to derive some columns which were necessary for data analysis and dashboard building.

- City and State Columns were derived from Purchase Address Column from raw dataset and after extracting columns, Purchase Address column was dropped.
- Based on the Product name, Category Column was created which specified the Category of product like Laptop, Phone, TV etc.

Transformed Data

Order ID	Product	Quantity Ordered	Price Each	Order Date	City	State	Category
141234	iPhone	1	700	22-01-2019 21:25	Boston	Massachusetts	Phone
141235	Lightning Charging Cable	1	14.95	28-01-2019 14:15	Portland	Oregon	Charging Cable
141236	Wired Headphones	2	11.99	17-01-2019 13:33	San Francisco	California	Headphones
141237	27in FHD Monitor	1	149.99	05-01-2019 20:33	Los Angeles	California	Monitor
141238	Wired Headphones	1	11.99	25-01-2019 11:59	Austin	Texas	Headphones
141239	AAA Batteries (4-pack)	1	2.99	29-01-2019 20:22	San Francisco	California	Batteries
141240	27in 4K Gaming Monitor	1	389.99	26-01-2019 12:16	Los Angeles	California	Monitor
141241	USB-C Charging Cable	1	11.95	05-01-2019 12:04	San Francisco	California	Charging Cable
141242	Bose SoundSport Headphones	1	99.99	01-01-2019 10:30	Los Angeles	California	Headphones
141243	Apple Airpods Headphones	1	150	22-01-2019 21:20	San Francisco	California	Headphones
141244	Apple Airpods Headphones	1	150	07-01-2019 11:29	San Francisco	California	Headphones
141245	Macbook Pro Laptop	1	1700	31-01-2019 10:12	San Francisco	California	Laptop
141246	AAA Batteries (4-pack)	3	2.99	09-01-2019 18:57	Los Angeles	California	Batteries
141247	27in FHD Monitor	1	149.99	25-01-2019 19:19	San Francisco	California	Monitor
141248	Flatscreen TV	1	300	03-01-2019 21:54	Austin	Texas	TV
141249	27in FHD Monitor	1	149.99	05-01-2019 17:20	Portland	Oregon	Monitor
141250	Vareebadd Phone	1	400	10-01-2019 11:20	Los Angeles	California	Phone
141251	Apple Airpods Headphones	1	150	24-01-2019 08:13	Boston	Massachusetts	Headphones
141252	USB-C Charging Cable	1	11.95	30-01-2019 09:28	Los Angeles	California	Charging Cable
141253	AA Batteries (4-pack)	1	3.84	17-01-2019 00:09	Atlanta	Georgia	Batteries
141254	AAA Batteries (4-pack)	1	2.99	08-01-2019 11:51	Seattle	Washington	Batteries

5.3 Reporting :

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

a) High Level Design Document (HLD)

b) Low Level Design Document (LLD)

c) Architecture

d) Wireframe

e) Detailed Project Report

f) Power Point Presentation

5.4 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 for the data to be stored 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.

5.5 Deployment :

Power BI is used to build reports and dashboard. Power BI file is then uploaded to Power BI Web service from where client can access using Power BI account.