

Low Level Design

Amazon Sales Data Analysis

Written By	Akshay Dani
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1. Introduction

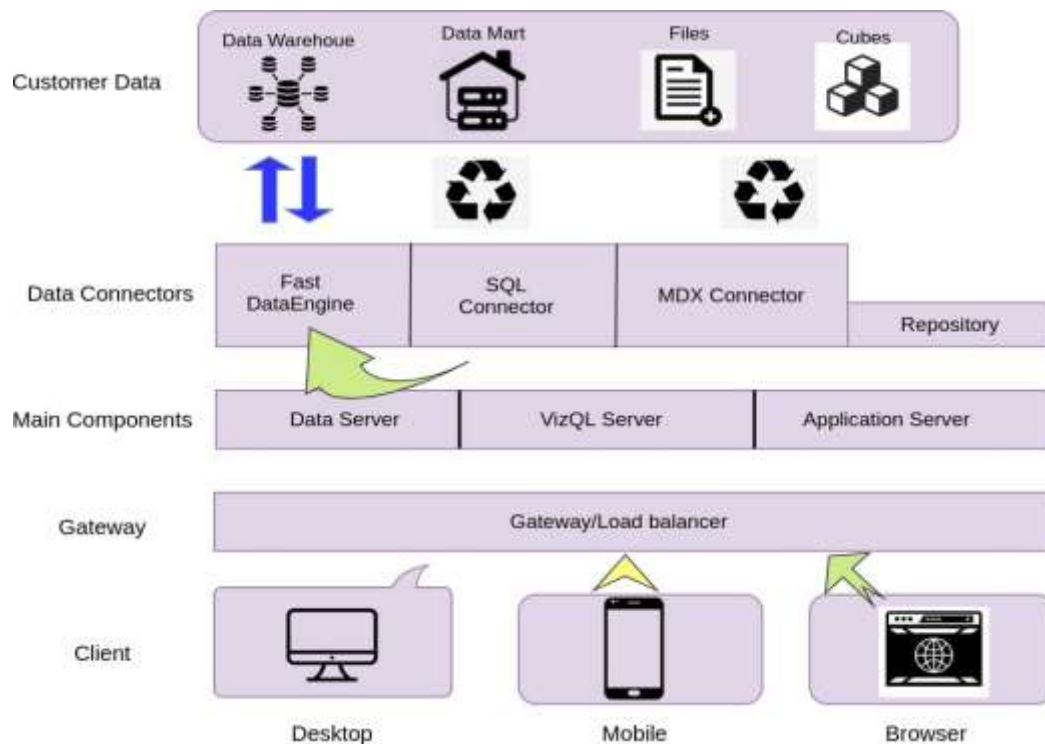
1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the report for the Amazon Sales Data Analysis. LDD describes the procedures and relationships between the variables and programs data visualizations.

1.2 Scope

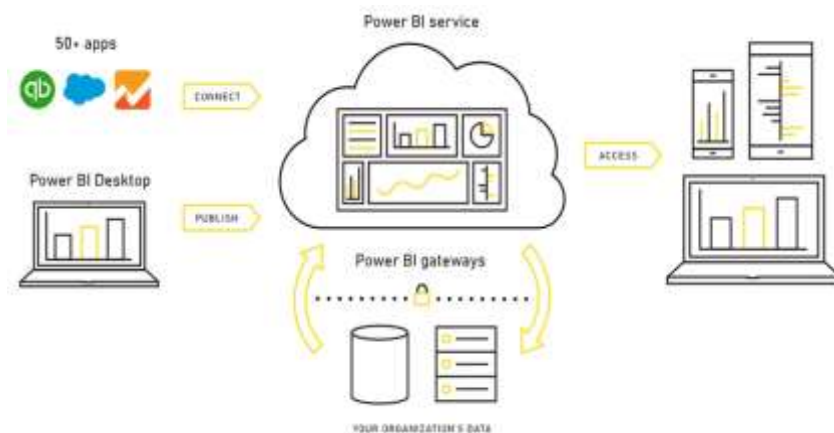
Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing reports, dashboards and required charts to showcase relationship between different data points.

2. Architecture



Power BI Architecture:

Power BI has a highly scalable architecture that serves mobile clients, web clients and desktop-installed software. Power BI architecture supports fast and flexible report and dashboard creation to drive business insights. The following diagram shows Power BI's architecture:



3. Architecture Description

3.1. Data Description

The Dataset contains Amazon Sales Data consists of columns like Sales Amount, Sales Quantity, Margin Amount, Sales Cost, Items, Item Orders, Sales Representatives, Item Class and Date of Order.

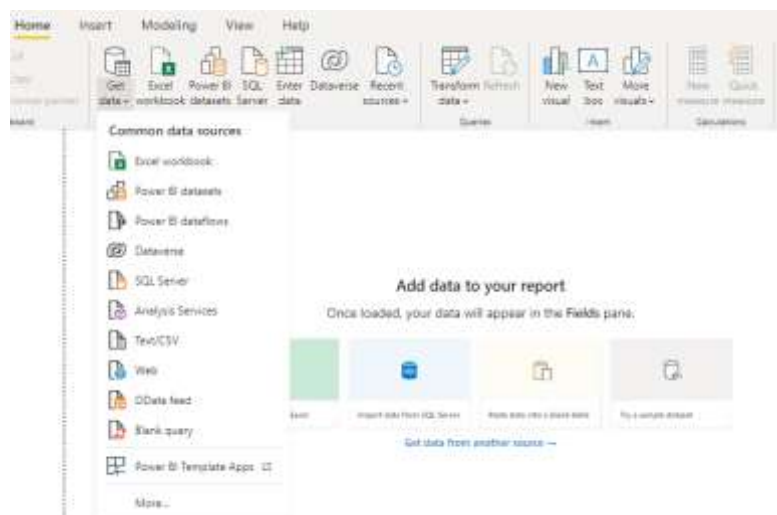
1. Discount Amount: Discount on every ordered item
2. Date: Ordered Date
3. Item: Name of the item ordered
4. List Price: The price at which the item is listed.
5. Sales Amount: Total amount of sales for particular item.
6. Sales Cost Amount: Amount spent for conversion of Sale
7. Sales Margin Amount: Margin amount on each item sold
8. Sales Quantity: Total number of items sold
9. Sales Representative: Representative under whom sale is completed.

3.2. Data Cleaning

Data Cleaning is a crucial stage before we start creating visuals. The dataset given some time has impurities such as missing values or incorrect data types. Data cleaning can be performed in Python with Pandas library to remove missing values and make dataset ready for building visuals.

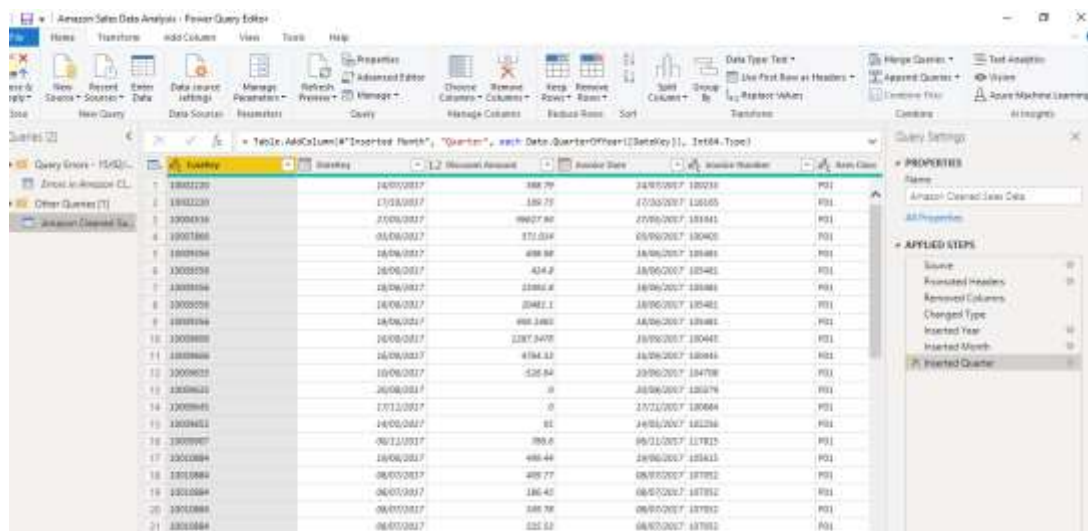
3.3. Data Importing

In Power BI, we have options to connect to our dataset via various options such as SQL Server, MYSQL, excel or CSV files. We have our clean data in CSV file. We will import it in Power BI with import data option and start working with it.



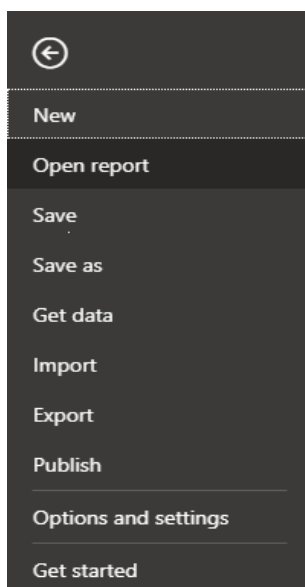
3.4. Data Transformation in Power BI

Once the data is imported in Power BI, we do 'transform data' i.e. using Power Query editor to perform certain operation on to the data. Ensuring correct data types, creating custom/conditional columns are some fundamental task performed in Power Query.



3.5 Deployment

In Power BI, You can directly publish the report online to your workstation. If you do not have the work email-id then you can save the file in '.pbix' version. This helps another viewer see your work and understand the story or insights you're communicating.



4. Unit Test Cases

TEST CASE DESCRIPTION	EXPECTED RESULTS
Year slicer	When clicked on the slicer, the shows results for that particular year
Month Slicer	When clicked on the slicer, a dropdown occurs which lists the name of months. This helps us see data by each month.
Monthly Trend for Sales	This chart showcases trend for monthly sales. Top performing months and low performing months can be easily segmented.
Yearly Trend for Sales	This chart displays which year has been best one so far in regards to the sales.
Relation between Sales Amount and Discount Amount	The visual shows a line chart displaying relation between Sales Amount and Discount
Top 10 ordered items.	This is a table that displays top 10 items that were ordered frequently. It also shows list price and sales price to understand the reasoning behind higher orders.
Top Sales Representatives	This chart shows top performing sales representatives with the sales amount.
Relationship between Sales Cost and Total Sales	A scatterplot that helps us understand relationship between sales cost and total sales.
Relationship between Sales Quantity and List Price	This visual has a scatterplot that helps us understand relationship between sales quantity and list price.
Relationship between Sales Price and List Price	A scatterplot chart helps us understand relationship between sales price and list price.
Top Margin Items	This chart displays higher margin items.

