Low Level Design

Amazon Sales Data Analysis

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Contents

1. Introduction 04

1.1 What is Low-Level Design Document? 04

1.2 Scope 04

2. Architecture 05

3. Architecture Description 07

3.1 Data Description 07

3.2 Web Scrapping 08

3.3 Data Transformation 08

3.4 Deployment 08

4. Unit test cases 10

1. Introduction

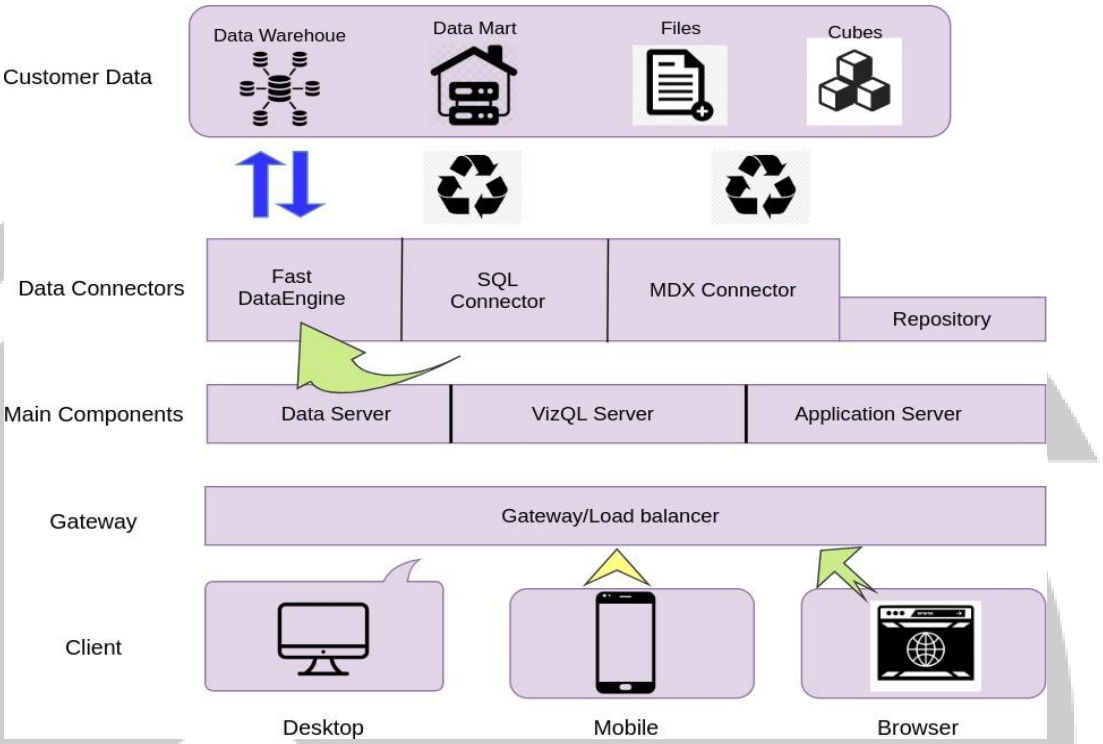
1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the actual program code for the House Price Prediction dashboard. LDD 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 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.

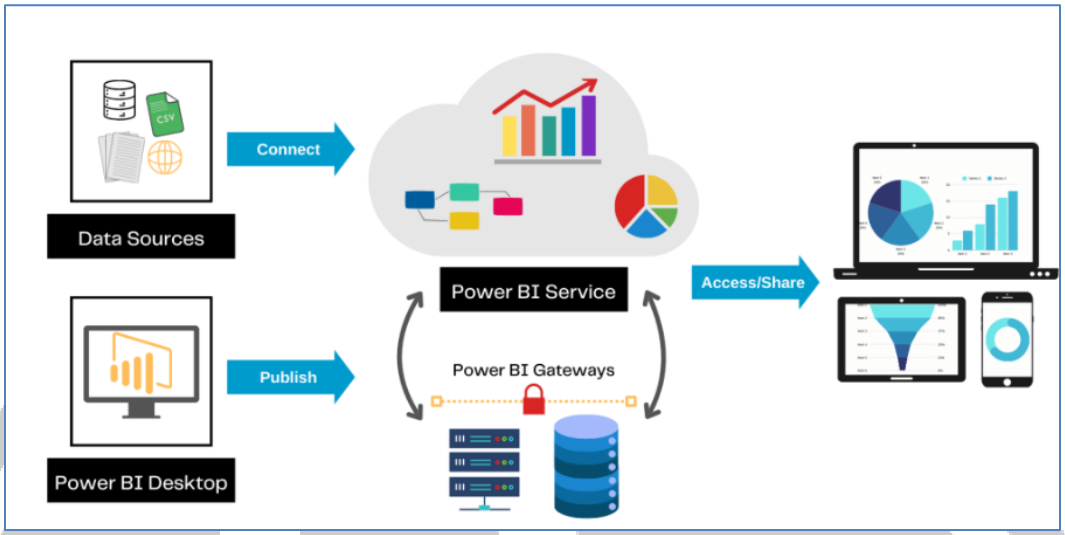
2. Architecture



Power BI Server Architecture

The platform connects to various data sources and helps create reports and visualize data. The architecture of Power BI includes a set of core components that work together to transform raw data into valuable business insights.

The following diagram shows Power BI's architecture:



Power BI is internally managed by the multiple server processes.

Phase 1: Connect to data sources

The platform has native connectors for various data sources, including flat files, databases, online applications & services, etc. In the Power BI interface, you can set up the data sources from the Get data option.

Phase 2: Transform the model data:-

The raw data may not always be ready for direct analysis. You can use the platform's data transformation and modelling features to shape and prepare the data for analysis.

Once you connect a data source, you can use Power Query Editor to perform various transformations like changing objects and column names, removing unwanted columns, filtering and pivoting data, and changing data types

Phase 3: Create and publish a report

After transformation, you can visualize the data and create reports using Power BI Desktop. It offers plenty of visuals to turn your data into a meaningful report with charts, graphs, tables, and more. You can also download and use third-party visuals from the Microsoft AppSource marketplace.

Phase4: Build dashboards:-

Power BI Dashboards are single pages that highlight important insights from the reports. You can build one by using tiles from existing reports in your account. They're helpful to get an overview of all the reports briefly.

3. Architecture Description

3.1. Data Description

The Dataset contains information about the region, units, order date, Total revenue, etc.

1. Item type: All the items present on the platform like Baby food, cereals, Fruits, office setup, etc.
2. Order Priority: This attribute contains types of products with the priority level like H, L, C.
3. Units sold: This attribute contains all the units sold of the product.
4. Total Revenue: This attribute contains total revenue generated according to the region.
5. Total Cost: This attribute contains total cost incurred by the production of the unit.
6. Total Profit: This attribute is incurred by the total revenue – total cost.

3.2. Web Scrapping

Web scraping is a technique to automatically extract content and data from websites using bots. It is also known as web data extraction or web harvesting. Web scrapping is made simple now days, many tools are used for web scrapping. Some of the python libraries used for web scrapping are Beautiful Soup, Scrapy, Selenium, etc.

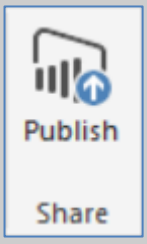
3.3. Data Transformation

In the Transformation Process, we will convert our original datasets with other necessary attributes format. And will merge it with the Scrapped dataset.

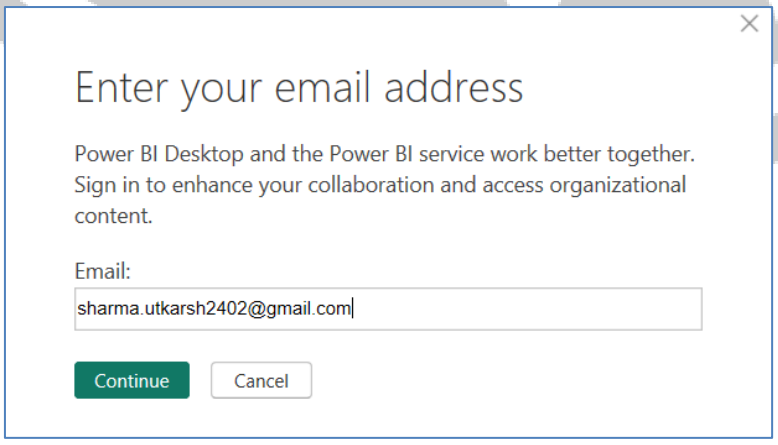
3.4 Deployment.

In this, we'll publish our dataset and report to the Power BI service; then we'll create a dashboard based on the report. In many cases a report has many visualizations and only a subset is used in a dashboard. In our case, we'll add all four visualizations to the dashboard.

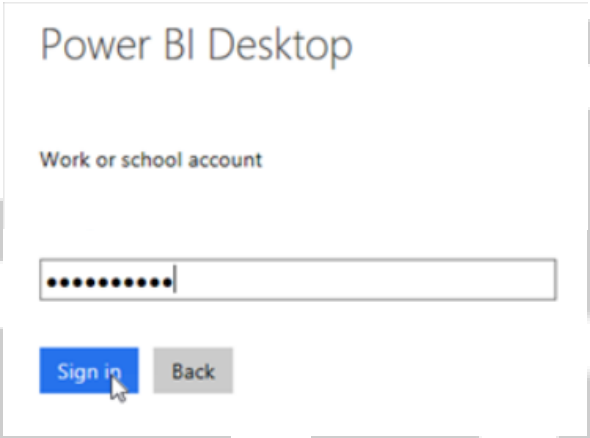
Step 1: In Power BI Desktop, on the **Home** tab, click or tap **Publish**



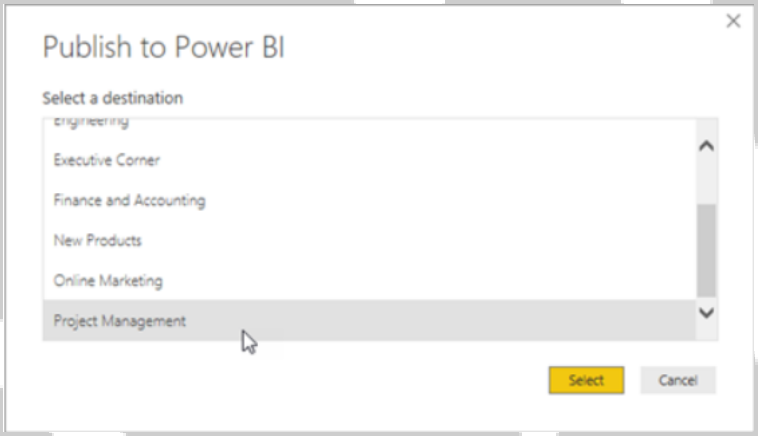
Step 2: If you're not already signed in to the Power BI service, enter an account, then click or tap **Sign in**.



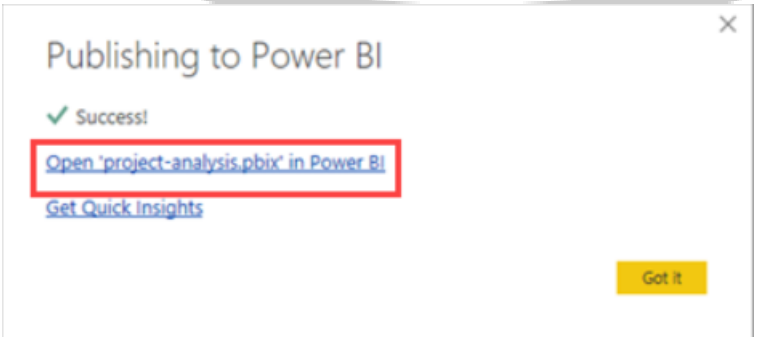
Step 3: Enter a password, then click or tap Sign in.



Step 4: Choose a destination for the report, then click or tap **Select**. We recommend publishing to a group workspace to simplify access to the report in SharePoint. In this case, we are publishing to the **Project Management** group workspace.



Step 5: After publishing completes, click or tap **Open 'project-analysis.pbx' in Power BI**.



4. Unit Test Cases

TEST CASE DESCRIPTION	EXPECTED RESULTS
Total Revenue	Total Revenue generated by the amazon in the span of 1 year is Rs.1,37,349K
Total Profit	Total profit incurred by the amazon is Rs. 44,168K within all the regions
Total units sold	About 513K unit of the products sold by the amazon globally effectively and efficiently
Monthly Revenue	It shows the monthly revenue of the amazon which shows that in the month of February company touch the highest revenue which is Rs. 25 million
Yearly Revenue	shows the yearly revenue of the amazon, and according to this chart first, the company starts with the 19.2M and then it falls in the year 2012
Region wise revenue	It shows that company generated the highest revenue in the Sub-African which is Rs. 40 million
Priority wise items sold	it shows that the items which has priority “H” has the highest number of the item sold continuing with the priority “L” with the 28.64% after that priority “C” with 22.8% and last priority “M” with the lowest number of the percentage which is 18.49%