

Low Level Design (HLD)

Amazon Sales Data Analysis.

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1 Introduction

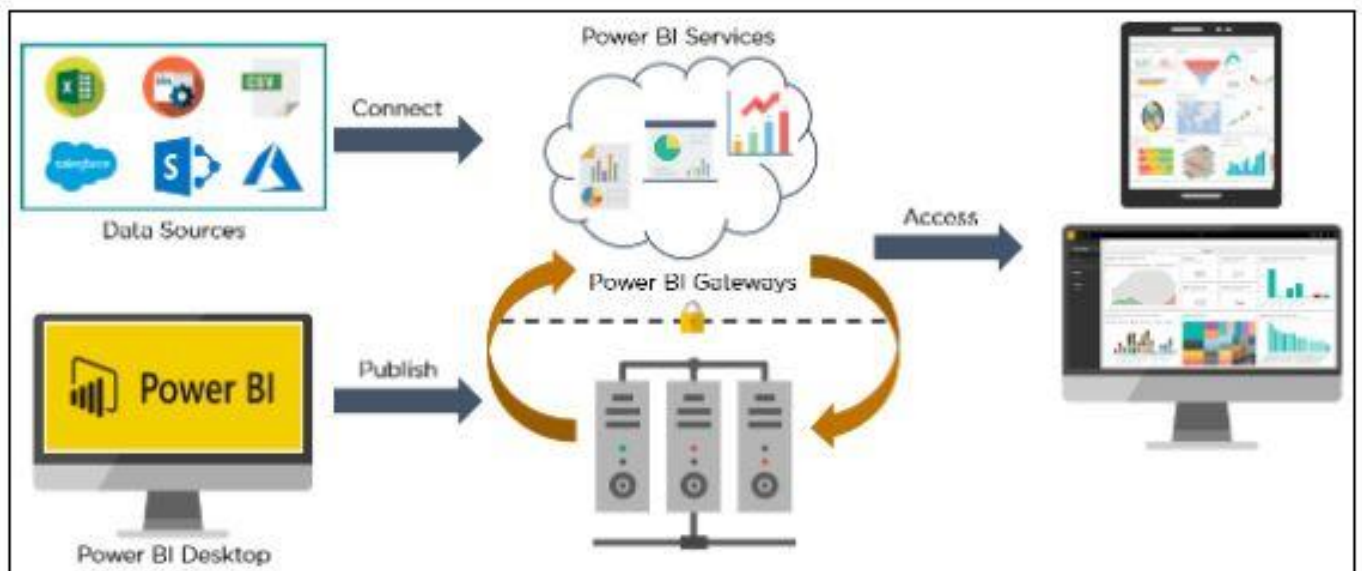
1.1 Why this Low-Level Design Document?

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 architecture is a service built on top of Azure. There are multiple data sources that Power BI can connect to. Power BI Desktop allows you to create reports and data visualizations on the dataset. Power BI gateway is connected to on-premise data sources to get continuous data for reporting and analytics. Power BI services refer to the cloud

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services that are used to publish Power BI reports and data visualizations. Using Power BI mobile apps, you can stay connected to their data from anywhere. Power BI apps are available for Windows, iOS, and Android platforms.

Power BI Service

Power BI service is the Software as a Service (SaaS) part of Power BI. It is also known as Power BI Online. To access Power BI Service, you need to log in to Power BI service.

Power BI Dashboard

Power BI Dashboard is a single page visualization to tell a story. The visualizations on a dashboard are generated from reports, and each report is based on one dataset.

Power BI allows you to create different reports on Power BI Desktop. These reports can be published on the Power BI dashboard using the Power BI service. A Power BI report created on Power BI Desktop can be published on to Power BI Service by clicking on the Publish button.

Power Query

Power Query is the data transformation and mash up the engine. It enables you to discover, connect, combine, and refine data sources to meet your analysis need. It can be downloaded as an add-in for Excel or can be used as part of the Power BI Desktop.

Power Pivot

Power Pivot is a data modelling technique that lets you create data models, establish relationships, and create calculations. It uses Data Analysis Expression (DAX) language to model simple and complex data.

Power View

Power View is a technology that is available in Excel, SharePoint, SQL Server, and Power BI. It lets you create interactive charts, graphs, maps, and other visuals that bring your data to life. It can connect to data sources and filter data for each data visualization element or the entire report.

Power Map

Microsoft's Power Map for Excel and Power BI is a 3-D data visualization tool that lets you map your data and plot more than a million rows of data visually on Bing maps in 3-D format from an Excel table or Data Model in Excel. Power Map works with Bing maps to get the best visualization based on latitude, longitude, or country, state, city, and street address information.

3 Architecture Description

3.1 Data Description

The Dataset contains the 'Customer ID', 'Customer Addresses' and 'Sales Data'. Shape of the dataset is 65283 x 25.

Customer Key	This attribute shows the customers IDs
Country	It contains the countries in which customer belongs
State	It shows the customer's state in which they residing
City	It shows the current city of the customer IDs
Business Family	It shows the business family of the customers.
Customer Type	It contains the customer types. It has three distinct values G1, G2, G3
Regional Sales Manager	It shows the sales manager assigned to the customer id
Region	Region of the customer
Date Key	Date of order registration
Discount Amount	Discount on the order
Invoice Date	Date on which Invoice for the order is generated
Invoice Number	Invoice Number for the Order
Item Number	Ordered Item Number
Item	Item description according to the item number
Line Number	Item line numbers for further details
List Price	Listed price of the item
Order Number	Gives more about order details
Promised Delivery Date	Expected Delivery Date Mentioned on the Invoice
Sales Amount	Sales amount According to order quantity
Sales Amount Based on List Price	Sales amount Based on Listed Price
Sales Cost Amount	Cost incurred for Sales
Sales Margin Amount	Sales Amount after deducting the sales cost amount.
Sales Price	Sales price incurred for items
Sales Quantity	Total order quantity
U/M	Quantity distributed (Unit/Pair/Measure)

Extraction of Data:

Web scrapping 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 python libraries used for web scrapping are Beautiful Soup, Scrapy, Selenium, etc.

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.

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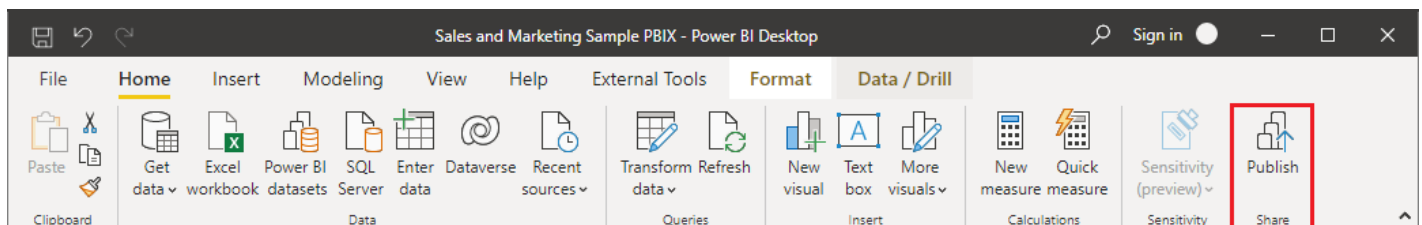
4. Deployment:

Git Hub: It is an online software development platform used for storing, tracking, and collaborating on software projects. It enables developers to upload their own code files and to collaborate with fellow developers on open-source projects

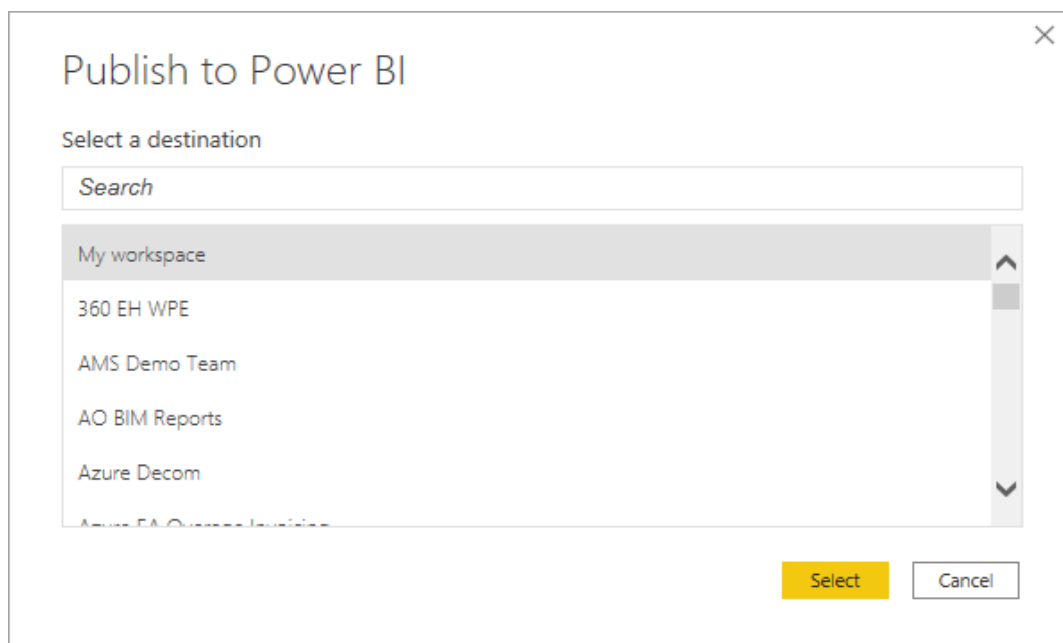
Power BI Service: Report Server gives your users access to rich, interactive reports, and the enterprise reporting capabilities of SQL Server Reporting Services. Explore visual data and quickly discover patterns to make better, faster decisions. At the same time, generate pixel-perfect paginated reports your business needs. You also have the ability to confidently scale to thousands of users because Power BI Report Server is based on a proven, enterprise-grade platform.

Steps For Publishing the Dashboard:

In Power BI Desktop, choose **File > Publish > Publish to Power BI** or select **Publish** on the **Home** ribbon.



Sign in to Power BI, if you aren't already signed in, Select the destination. You can search your list of available workspaces to find the workspace into which you want to publish. The search box lets you filter your workspaces. Select the workspace, and then click the **Select** button to publish



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When publishing is complete, you receive a link to your report. Select the link to open the report in your Power BI site.

