Low Level Design

CUSTOMER LIFETIME ANALYSIS

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1. Introduction

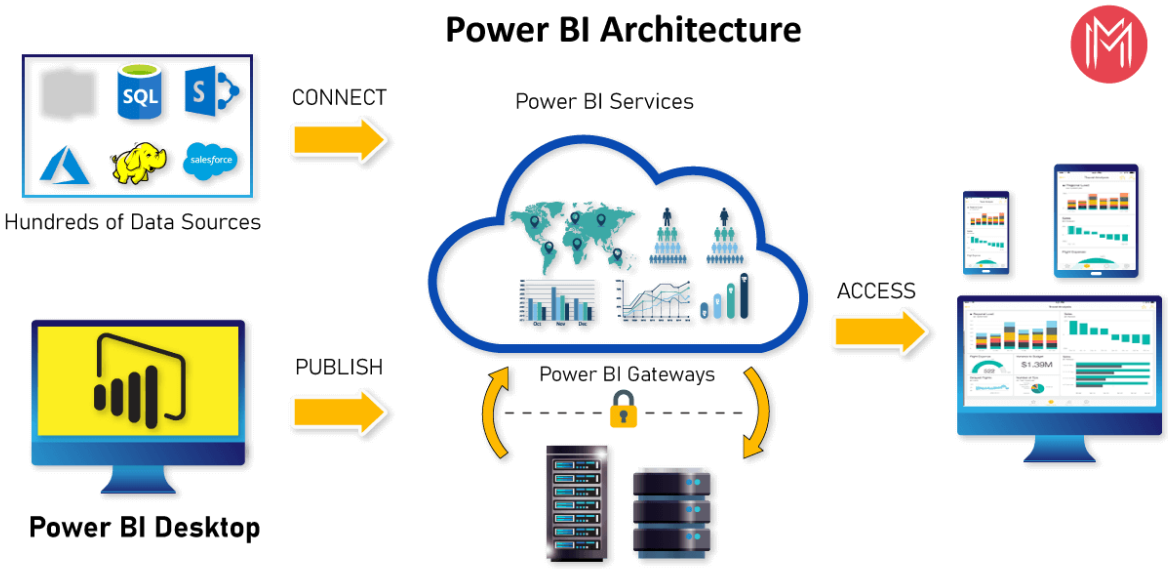
1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the 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

Power BI has a highly scalable, n-tier client-server architecture that serves mobile clients, web clients and desktop-installed software. Tableau Server architecture supports fast and flexible deployments.

The following diagram shows Power BI Server's architecture:

Power BI Server is internally managed by the multiple server

1. Power BI Desktop

It is free software that enables you to connect, transform and visualize the data on your desktop. You can connect to various data sources with the help of Power BI Desktop and combine the data into a data model.

2. Power BI Service

Power BI Service is an On-Cloud service with a web-based platform and used to share and publish the reports made on Power BI Desktop. It collaborates the data with other users and creates dashboards. Power BI Service is also called “Power BI Workspace”, “Power BI Web Portal”, and “Power BI Site”.

3. Power BI Report Server:

Power BI Report Server is similar to the Power BI Service. It is an On-Premises server platform. Using Power BI Report Server, organizations can secure their data. It enables the users to create reports and dashboards and allows you to share the reports with other users or organizations with proper security protocols.

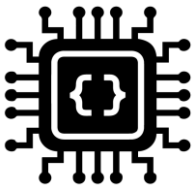
4. Power BI Gateway

Power BI Gateway is used to maintain fresh information by connecting to your on-site data sources without transferring the data. It provides secure data and allows you to transfer the data between Microsoft cloud services and on-premise services.

5. Power BI Mobile apps

Using Power BI Mobile Apps, you can stay connected with on-premises data from anywhere. Power BI apps are available for iOS, Windows, and Android platforms.

6. Power BI Embedded



Power BI Embedded is an On-premises service in Azure. It offers APIs for embedding the reports and dashboards into custom applications. Till now, we have been discussing major components of the Power BI, and now, we will talk about the remaining components of Power BI as well.

7. Power BI Query

Power Query is the data connectivity that enables the business users to access the data which is stored in multiple data sources and redesign it to satisfy their business requirements. Power Query offers custom connectors SDK so that third-party users can create their data connectors.

3. Architecture Description

3.1. Data Description

The Dataset contains house price of cities that fall under the categories A,B and C based on the availability of parking, rainfall, its built-up area etc.

1. Coverage: Insurance protection against specified risk per policy terms.
2. Monthly premium auto: Monthly payment for auto insurance coverage as agreed in policy.
3. Months since last claim: Number of months since the last filled insurance claim.
4. Months since policy inception: Time lapsed since the policy was initially issued.
5. Policy type: Category of kind of insurance plan.
6. Option to continue policy: same terms or with modifications.
7. Sales channel: Method used to sell insurance, like agent, online.
8. Total claim amount of money requested in an insurance claim for reimbursement.

3.2. Data Integration

Data is extracted from different sources which can be different servers or databases. The data from various sources can be in different types and formats. If you import the file into the Power BI, it compresses the data sets up to 1GB, and it uses a direct query if the compressed data sets exceed more than 1GB. Then the data is integrated into a standard format and stored at a place called a staging area. There are two choices for big data sets. They are as follows.

3.3. Data Transformation

Integrated data is not ready to visualize data because the data should be transformed. To transform the data, it should be cleaned or pre-processed. For example, redundant or missing values are removed from the data sets. After data is pre-processed or cleaned, business rules are applied to transform the data. After processing the data, it is loaded into the data warehouse.

3.4. Report and Publish

After sourcing and cleaning the data, you can create the reports. Reports are the visualization of the data in the form of slicers, graphs, and charts. Power BI offers a lot of custom visualization to create the reports. After creating reports, you can publish them to power bi services and also publish them to an on-premise power bi server.

3.5 Creating Dashboards

You can create dashboards after publishing reports to Power BI services, by holding the individual elements. The visual retains the filter when the report is holding the individual elements to save the report. Pinning the live report page allows the dashboard users to interact with the visual by selecting slicers and filters.