Low-Level Design

Bank Marketing Analytics

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DOCUMENT CONTROL

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Contents

1. Introduction

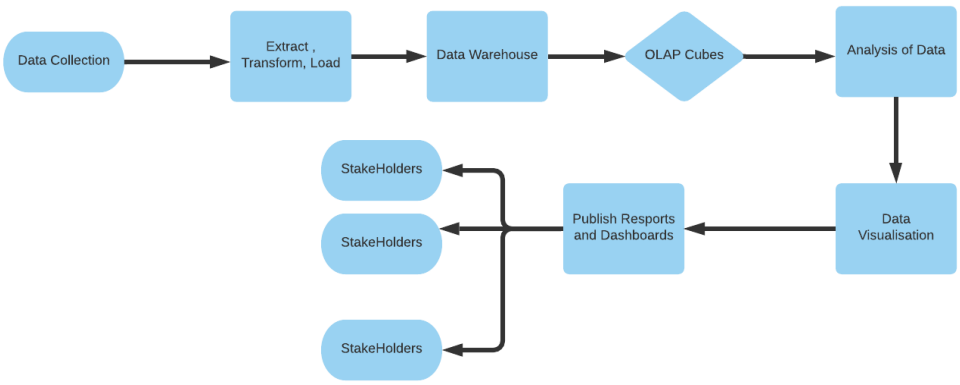
1.1 What is a Low-Level design document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

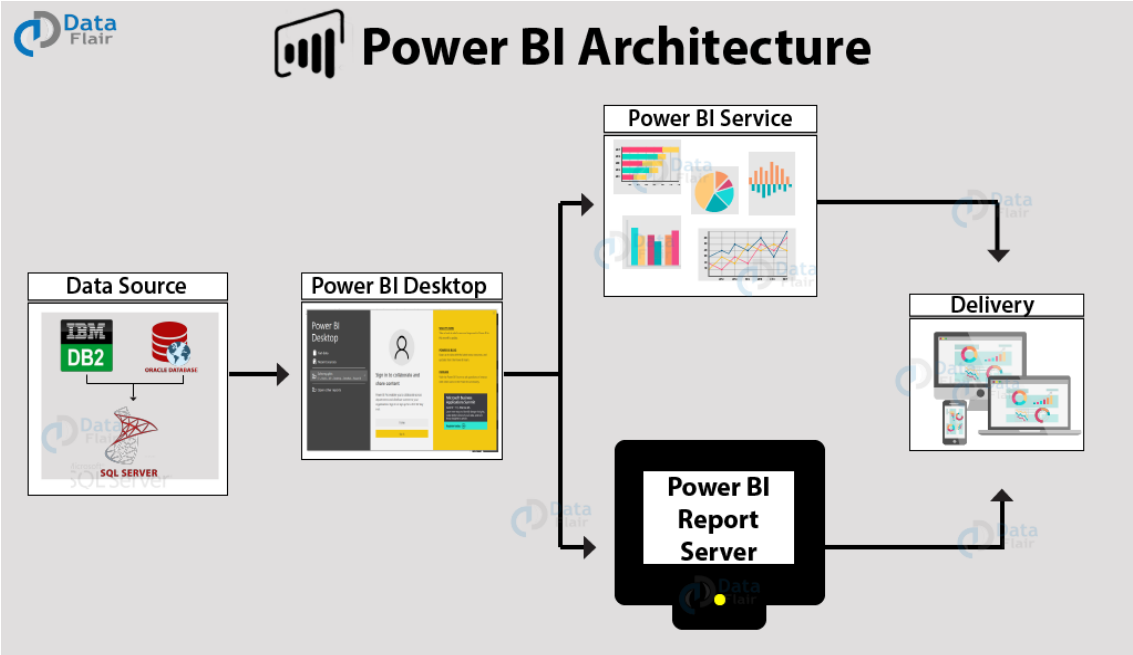
1.2 Scope

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.

2.0 Architecture



2.1 Power BI Architecture:



2.1.1 Power BI Desktop:

Power BI Desktop application used on the local machine that performs transformation and visualisation of data. The application is used to build visuals and collections of visuals are shared as reports with stakeholders organization servers.

2.1.2 Power BI Service:

The Power BI Service is a cloud-based service where stakeholders view and interact with the reports. Stakeholders in the Service can edit the reports and create visuals based on the existing data model and also share and collaborate with other Stakeholders.

2.1.3 Power BI Report Server:

Power BI Report Server is an on-premises report server with a web portal in which stakeholders can display and manage reports and KPIs. Along with it come to the tools to create Power BI reports, paginated reports, mobile reports, and KPIs.

3. Architecture Description

3.1. Data Description

The Bank Marketing DataSet contains these set of Input variables:

Age: (numeric)

Job : Type of job (categorical:"admin.","unknown","unemployed","management","housemaid","entrepreneur","student","blue-collar","self-employed","retired","technician","services")

Marital : Marital status (categorical: "married","divorced","single"; note: "divorced" means divorced or widowed)

Education (categorical: "unknown","secondary","primary","tertiary")

Default: has credit in default? (binary: "yes","no")

Balance: average yearly balance, in euros (numeric)

Housing: has a housing loan? (binary: "yes","no")

Loan: has personal loan? (binary: "yes","no")

Contact: contact communication type (categorical: "unknown","telephone","cellular")

Day: last contact day of the month (numeric)

Month: last contact month of year (categorical: "jan", "feb", "mar", ..., "nov", "dec")

Duration: last contact duration, in seconds (numeric)

Campaign: number of contacts performed during this campaign and for this client (numeric, includes last contact)

Pdays: number of days that passed by after the client was last contacted from a previous campaign (numeric, -1 means client was not previously contacted)

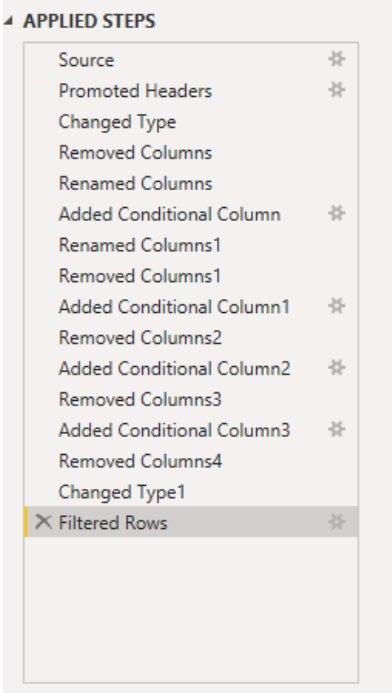
Previous: number of contacts performed before this campaign and for this client (numeric)

Poutcome: outcome of the previous marketing campaign (categorical: "unknown","other","failure","success")

Y - has the client subscribed a term deposit? (binary: "yes","no")

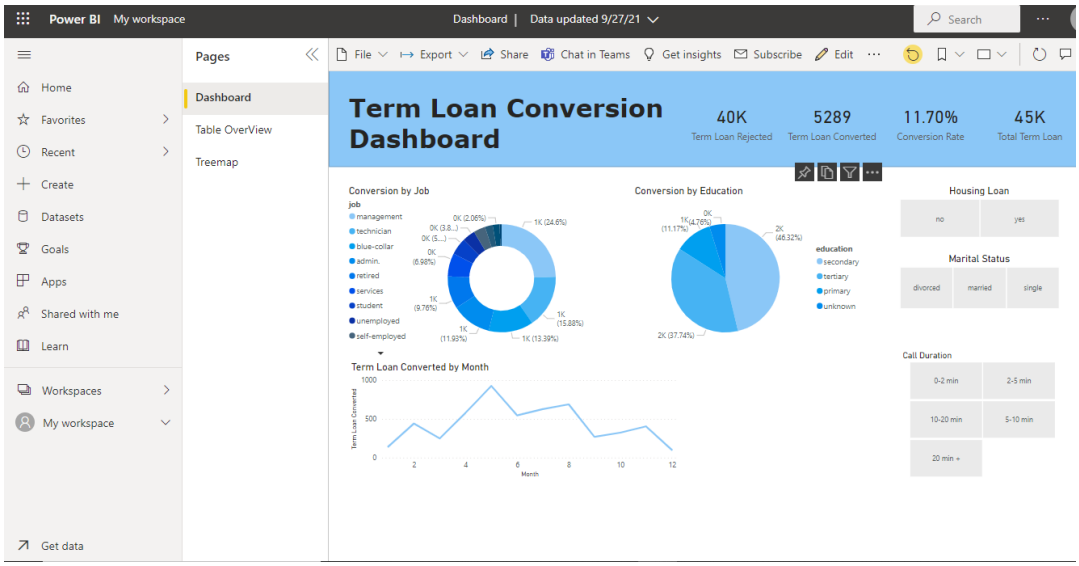
3.2 Data Transformation

In the Transformation Process, we will convert our original datasets with other necessary attributes formats. The given dataset was transformed by removing null Values, renaming columns , adding conditional columns to change numerical data type to categorical data type and removing unnecessary columns



3.3 Publishing the Data

We can share the report in Power BI Service and share the report with others with a valid licence of Power BI pro. Here we have successfully deployed the report in Power BI service. We can publish the report on Power BI service through publishing the report online by Power BI Desktop



4.0 Unit Test Cases

Test Case Description	Description
Marital Status Slicer	When clicked on the slicer, a drop down should occur which has various parameters of the Marital Status.
Housing Loan Slicer	When clicked on the slicer, a drop down should occur which has various parameters of the Housing Loan.
Call Duration Slicer	When clicked on the slicer, a drop down should occur which has various parameters of the Call Duration.
Relation Between Term Loan Pitched and Months of the year	Here a time series graph is shown of Term Loan Pitched VS Months data
Relation Term Loan Converted and Job	Various city category is shown and a visualization is created which shows relationship between Term Loan Converted and Jobs
Relation Term Loan Converted and Job	Various city category is shown and a visualization is created which shows relationship between Term Loan Converted and Education of the Customer