Low Level Design (LLD) Customer Personality Analysis

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# Introduction

## What is Low Level Design Document?

#### The goal of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Heart Disease Diagnostic Analysis dashboard. LLDD 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. **What is 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.

## Project Introduction

Customer Personality Analysis is a detailed analysis of a company’s ideal customers. It helps a business to better understand its customers and makes it easier for them to modify products according to the specific needs, behaviors and concerns of different types of customers.

Customer personality analysis helps a business to modify its product based on its target customers from different types of customer segments. For example, instead of spending money to market a new product to every customer in the company’s database, a company can analyze which customer segment is most likely to buy the product and then market the product only on that particular segment.

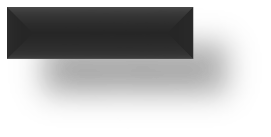
# Problem Statement

* + 1. What people say about your product: what gives customers’ attitude towards the product.
    2. What people do: which reveals what people are doing rather than what they are saying about your product.

# Dataset Information

1. Id : customer id
2. Year\_Birth : Birth year of customer
3. Education : Highest education of customer
4. Marital\_Status : marital status
5. Income : annual income
6. Kidhome : number of kids at home
7. Teenhome : number of teen at home
8. Dt\_Customer : date of customer enrollment in company
9. Recency : Number of days since last purchase
10. MntWines : Amount spend on wines in last 2 years
11. MntFruits : Amount spend on Fruits in last 2 years
12. MntMeatProducts : Amount spend on MeatProducts in last 2 years
13. MntFishProducts : Amount spend on FishProducts in last 2 years
14. MntSweetProducts : Amount spend on SweetProducts in last 2 years
15. MntGoldProds : Amount spend on GoldProds in last 2 years
16. NumDealsPurchases : Number of purcheses made from deals
17. NumDealsPurchases : Number of purcheses made from website
18. NumDealsPurchases : Number of purcheses made from catalog
19. NumDealsPurchases : Number of purcheses made from store
20. NumDealsPurchases : Number of web visit in last month
21. AcceptedCmp1 : 1, if purchase made in campaign 1
22. AcceptedCmp2 : 1, if purchase made in campaign 2
23. AcceptedCmp3 : 1, if purchase made in campaign 3
24. AcceptedCmp4 : 1, if purchase made in campaign 4
25. AcceptedCmp5 : 1, if purchase made in campaign 5
26. Complain : Complain made in last 2 years
27. Z\_costcontact : contact cost(constant)
28. Z\_Revenue : Revenue (constant)
29. Response : 1 if purchase made in last campaign

# Architecture



Real World

Exploratory Data Analysis (EDA)

Modelling

Deployment

Data Cleaning

Data Pre- Processing

Raw Data Collection

Reporting

* 1. **Architecture Description**

### Raw Data Collection

The Dataset was taken from iNeuron’s Provided Project Description Document.

[dataset](https://raw.githubusercontent.com/amankharwal/Website-data/master/marketing_campaign.csv)

### Data Pre-Processing

Before building any model, it is crucial to perform data pre-processing to feed the correct data to the model to learn and predict. Model performance depends on the quality of data feeded to the model to train.

This Process includes-

* + - 1. Handling Null/Missing Values
      2. Handling Skewed Data
      3. Outliers Detection and Removal

### Data Cleaning

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset.

* + - 1. Remove duplicate or irrelevant observations
      2. Filter unwanted outliers
      3. Renaming required attributes

### Exploratory Data Analysis (EDA)

Exploratory Data Analysis refers to the critical process of performing initial investigations on data to discover patterns, spot anomalies, test hypothesis and to check assumptions with the help of summary statistics and graphical representations.

### Reporting

Reporting is a most important and underrated skill of a data analytics field. Because being a Data Analyst you should be good in easy and self- explanatory report because your model will be used by many stakeholders who are not from technical background.

* + - 1. High Level Design Document (HLD)
      2. Low Level Design Document (LLD)
      3. Architecture
      4. Wireframe
      5. Detailed Project Report
      6. Power Point Presentation

### Modelling

Data Modelling is the process of analysing the data objects and their relationship to the other objects. It is used to analyse the data requirements that are required for the business processes. The data models are created for the data to be stored in a database. The Data Model's main focus is on what data is needed and how we have to organize data rather than what operations we have to perform.

### Deployment

We created a Power BI Dashboard

