Swiggy Data Analysis

Low Level Design (LLD)

Author	Mujahid Raza
Document Version	LLD-V 1.0
Last Revised Date	29/04/2024

Document Version Control :

Date	Version	Author	Description
29/04/2024	**LLD-V 1.0**	**Mujahid Raza**	**Completed LLD**

Contents

Document Version Control 2
Abstract 4
1 Introduction 5
1.1 Why this Low-Level design document? 5
1.2 Scope 5
1.3 Constraints 5
2 **Technical Specifications** 6
2.1 Swiggy Dataset 6
2.1.1 Swiggy Dataset Overview 6
2.1.2 Overview of Variables 7
3 Architecture 8
3.1 Architecture Description 8
3.1.1 Data Description 8
3.1.2 Define the Use Cases 8
3.1.3 Import the Dataset 9
3.1.4 Exploratory Data Analysis (EDA) 9
3.1.5 Data Pre-processing, Data Cleaning & Imputation (Handling the Categorical & Numerical Variables) 9
3.1.6 Analyse the Data 10
3.1.7 Visualize & Share Meaningful Insights 10
4 **Technology Stack**

Abstract

The online food ordering market includes foods prepared by restaurants, prepared by independent people, and groceries being ordered online and then picked up or delivered. The first online food ordering service, World Wide Waiter (now known as Waiter.com), was founded in 1995. Online food ordering is the process of ordering food from a website or other application. The product can be either ready-to-eat food or food that has not been specially prepared for direction consumption.

In the world of rising new technology and innovation, Food industry is advancing with the role of Data Science and Analytics. Data analysis can help them to understand their business in a quiet different manner and helps to improve the quality of the service by identifying the weak areas of the business. This study demonstrates the how different analysis help to make better business decisions and help analyze customer trends and satisfaction, which can lead to new and better products and services. Different analysis performed such as Extract, Transformed Load(ETL) Analysis and Descriptive Analysis on variety of use cases to get the key insights from this data based on which business decisions will be taken.

Introduction

1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLD) 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

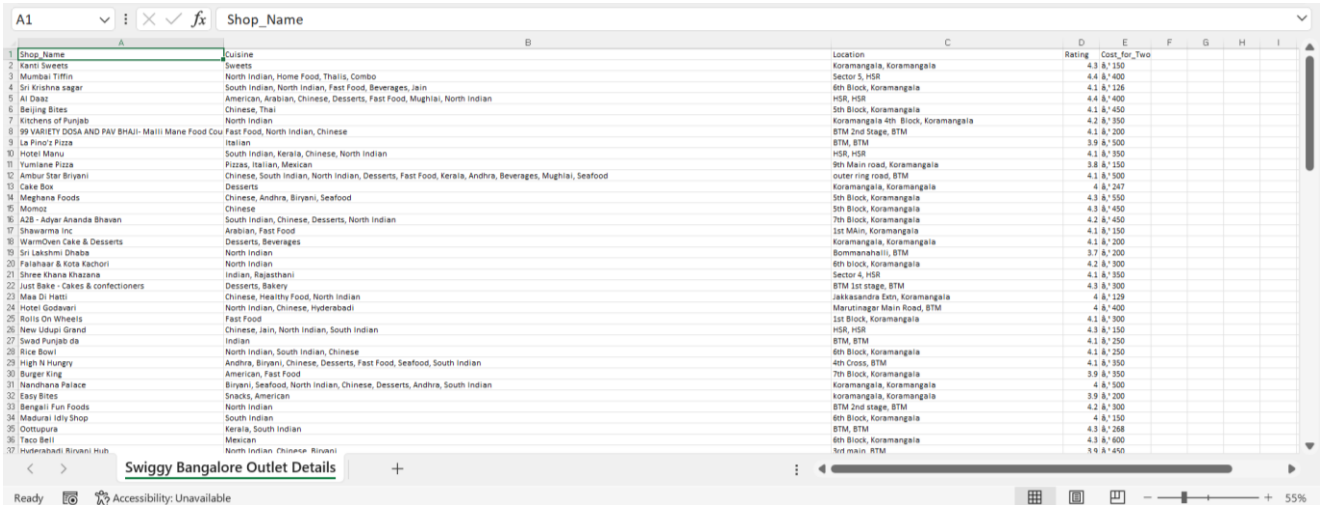
Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

1.3 Constraints

The analysis must be user friendly, code must be neat & clean, ETL must be automated as much as possible because it will save huge amount of time. Moreover, users should not be required to have any of the coding knowledge as the insights they are looking for are mentioned in-detail with respective visuals.

2 Technical Specifications

2.1 Swiggy Bangalore Outlet Dataset



Shop_Name	Cuisine	Location	Rating	Cost_for_Two
Kanti Sweets	Sweets	Koramangala, Koramangala	4.3	₹150
Mumbai Tiffin	North Indian, Home Food, Thalis, Combo	Sector 5, HSR	4.4	₹400
Sri Krishna sagar	South Indian, North Indian, Fast Food, Beverages, Jain	6th Block, Koramangala	4.1	₹126
Al Daaz	American, Arabian, Chinese, Desserts, Fast Food, Mughlai, North Indian	HSR, HSR	4.4	₹400
Beijing Bites	Chinese, Thai	5th Block, Koramangala	4.1	₹450
Kitchens of Punjab	North Indian	Koramangala 4th Block, Koramangala	4.2	₹350
99 VARIETY DOSA AND PAV BHAJI- Malli Mane Food Cou	Fast Food, North Indian, Chinese	BTM 2nd Stage, BTM	4.1	₹200
La Pino'z Pizza	Italian	BTM, BTM	3.9	₹500
Hotel Manu	South Indian, Kerala, Chinese, North Indian	HSR, HSR	4.1	₹350
Yumlane Pizza	Pizzas, Italian, Mexican	9th Main road, Koramangala	3.8	₹150
Ambur Star Biryani	Chinese, South Indian, North Indian, Desserts, Fast Food, Kerala, Andhra, Beverages, Mughlai, Seafood	outer ring road, BTM	4.1	₹500
Cake Box	Desserts	Koramangala, Koramangala	4	₹247
Meghana Foods	Chinese, Andhra, Biryani, Seafood	5th Block, Koramangala	4.3	₹550
Momoz	Chinese	5th Block, Koramangala	4.3	₹450
A2B - Adyar Ananda Bhavan	South Indian, Chinese, Desserts, North Indian	7th Block, Koramangala	4.2	₹450
Shawarma Inc	Arabian, Fast Food	1st MAin, Koramangala	4.1	₹150
WarmOven Cake & Desserts	Desserts, Beverages	Koramangala, Koramangala	4.1	₹200
Sri Lakshmi Dhaba	North Indian	Bommanahalli, BTM	3.7	₹200
Falahaar & Kota Kachori	North Indian	6th block, Koramangala	4.2	₹300
Shree Khana Khazana	Indian, Rajasthani	Sector 4, HSR	4.1	₹350
Just Bake - Cakes & confectioners	Desserts, Bakery	BTM 1st stage, BTM	4.3	₹300
Maa Di Hatti	Chinese, Healthy Food, North Indian	Jakkasandra Extn, Koramangala	4	₹129
Hotel Godavari	North Indian, Chinese, Hyderabadi	Marutinagar Main Road, BTM	4	₹400
Rolls On Wheels	Fast Food	1st Block, Koramangala	4.1	₹300
New Udupi Grand	Chinese, Jain, North Indian, South Indian	HSR, HSR	4.3	₹150
Swad Punjab da	Indian	BTM, BTM	4.1	₹250
Rice Bowl	North Indian, South Indian, Chinese	6th Block, Koramangala	4.1	₹250
High N Hungry	Andhra, Biryani, Chinese, Desserts, Fast Food, Seafood, South Indian	4th Cross, BTM	4.1	₹350
Burger King	American, Fast Food	7th Block, Koramangala	3.9	₹350
Nandhana Palace	Biryani, Seafood, North Indian, Chinese, Desserts, Andhra, South Indian	Koramangala, Koramangala	4	₹500
Easy Bites	Snacks, American	koramangala, Koramangala	3.9	₹200
Bengali Fun Foods	North Indian	BTM 2nd stage, BTM	4.2	₹300
Madurai Idly Shop	South Indian	6th Block, Koramangala	4	₹150
Oottupura	Kerala, South Indian	BTM, BTM	4.3	₹268
Taco Bell	Mexican	6th Block, Koramangala	4.3	₹600
Hyderabadi Biryani Hub	North Indian, Chinese, Biryani	3rd main, BTM	3.9	₹450

2.1.1 Swiggy Bangalore Outlet Dataset Overview –

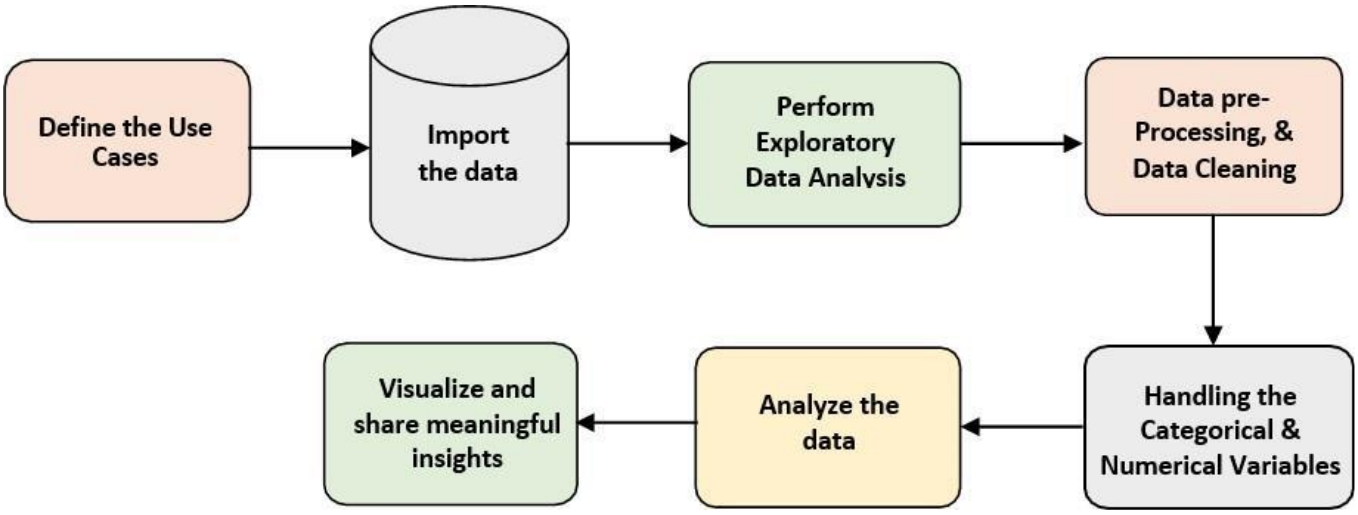
The Listings dataset consists of a table with 118 records and 5 features. Features are distributed as 2 Continuous features and 3 Categorical features. There are a total 0% of records having Missing Values. In short, there are no Missing Values present in the dataset.

```
Basic Information:

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 118 entries, 0 to 117
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   Shop_Name     118 non-null    object
 1   Cuisine       118 non-null    object
 2   Location      118 non-null    object
 3   Rating        118 non-null    object
 4   Cost_for_Two  118 non-null    object
dtypes: object(5)
memory usage: 4.7+ KB
None
```

2.1.2 Overview of Variables:

```
Number of unique values for each attribute:

shop_name              114
cuisine                 79
location                64
rating                  12
cost_for_two(₹)         30
avg_cost_per_person     30
cost_category            2
area                     4
dtype: int64
```

3 Architecture



3.1 Architecture Description –

3.1.1 Data Description –

As we have seen earlier, in our Swiggy dataset, we have around 118 records with 5 different features. Features are distributed as 2 Continuous features and 3 Categorical features. These datasets are given in the form of Comma Separated Value (.csv) format.

3.1.2 Define the Use Cases –

At this stage, based on the given dataset and business problems we have defined the several Use Cases to perform the analysis on and this will definitely help out get the key insights from this data based on which business decisions will be taken. Furthermore, It helps in not only understanding the meaningful relationships between attributes but it also allows us to do our own research and come-up with our findings.

3.1.3 Import the Dataset –

As we have received the dataset in the form of Comma Separated Value (.csv) format, therefore we can import the same using Pandas read_csv( ) function.

Reading Data

```
In [2]: df = pd.read_csv("Swiggy Bangalore Outlet Details.csv")
        df
```

Out[2]:

	Shop_Name	Cuisine	Location	Rating	Cost_for_Two
0	Kanti Sweets	Sweets	Koramangala, Koramangala	4.3	₹ 150
1	Mumbai Tiffin	North Indian, Home Food, Thalis, Combo	Sector 5, HSR	4.4	₹ 400
2	Sri Krishna sagar	South Indian, North Indian, Fast Food, Beverag...	6th Block, Koramangala	4.1	₹ 126
3	Al Daaz	American, Arabian, Chinese, Desserts, Fast Foo...	HSR, HSR	4.4	₹ 400
4	Beijing Bites	Chinese, Thai	5th Block, Koramangala	4.1	₹ 450
...	...	...	...	...	...
113	Wok Paper Scissors	Pan-Asian, Chinese, Asian	JNC Road, Koramangala	3.9	₹ 219
114	Savoury Restaurant	Arabian, Middle Eastern, North Indian, Grill, ...	Madiwala, BTM	4.1	₹ 600
115	Royal Treat	North Indian, Chinese, Seafood, Biryani	5th block Koramangala, Koramangala	4.2	₹ 193
116	Thali 99	North Indian	Koramangala, Koramangala	4.3	₹ 200
117	Mani's Dum Biryani	Andhra, Biryani	1st Block, Koramangala	4.2	₹ 400

3.1.4 Exploratory Data Analysis (EDA) –

- "Exploratory Data Analysis" (EDA) is a "Data Exploration" step in the Data Analysis Process, where a number of techniques are used to better understand the dataset being used.

- Understanding the Dataset can refer to a number of things including but not limited to…

  - Extracting Important "Variables".
  - Identifying "Outliers", "Missing Values", or "Human Error".
  - Understanding the Relationships between variables.
  - Ultimately, maximizing our insights of a dataset and minimizing potential "Error" that may occur later in the process.

- In other words, it will gives you a better Understanding of the "Variables" and the "Relationships" between them.

3.1.5 Data Pre-processing, Data Cleaning & Imputation (Handling the Categorical & Numerical Variables) –

Data pre-processing is a process of preparing the raw data and making it suitable for our analysis purpose, where we have to do lot of Data Cleaning, handle the missing values by using appropriate imputation techniques and based on that variable nature i.e. either of Categorical & Numerical variable. Here, in this project, we have done the substitution/imputation of missing values using either mean, median or mode according to the nature of those variables. Moreover, we also removed the columns which are does not participate in our analysis.

3.1.6 Analyse the Data –

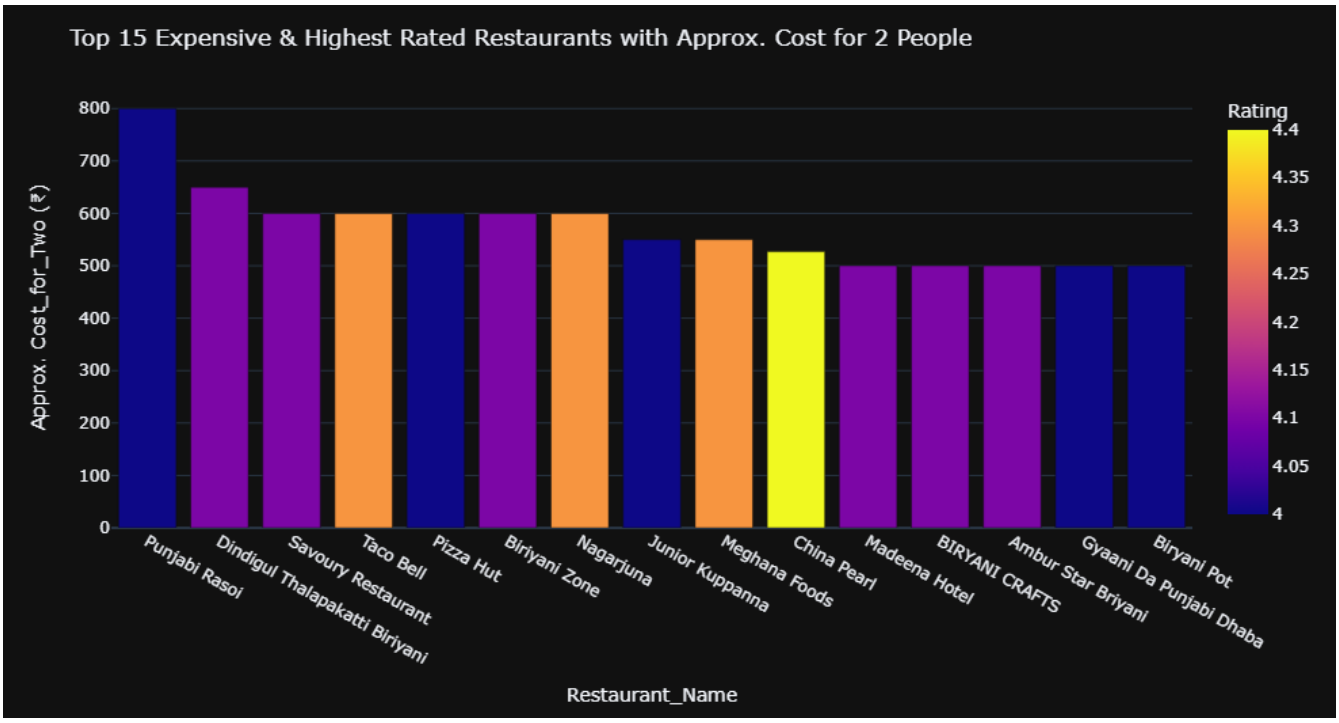
Once the pre-processing is done, we are good to go with our actual analysis where we write lines of codes and logics to prepare our data as per the defined use cases.

3.1.7 Visualize & Share Meaningful Insights –

Finally, it's time to turn our data into some sort of visual representation. In short, Data visualization is the process of translating large data sets and metrics into charts, graphs and other visuals such as Bar Plot, Pie Chart, Heat map, Box Plot, Scatter Plot, and many more. The resulting visual

representation of data makes it easier to identify and share insights about the information represented in the data.

Here is the beautiful glimpse of one of our visuals are –



All those different analysis help out to make better business decisions and help analyse customer trends and satisfaction, which can lead to new and better products and services.

4.Technology Stack