LOW LEVEL DESIGN (LLD)

Analyzing Swiggy: Banglore Delivery Outlet

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Abstract

An online food delivery system is a platform that allows customers to order food from various restaurants and have it delivered to their preferred location. These systems usually operate through websites or mobile applications and provide a convenient way for people to order food without physically visiting a restaurant.

Swiggy is a popular online food delivery platform based in India. It was founded in 2014 and has since become one of the leading players in the Indian food delivery market.Swiggy, as an online food delivery platform, collects and analyzes a vast amount of data to improve its services, optimize operations, and enhance the overall customer experience.

1. Introduction

This document will be used for documenting Low-level designs of project.

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 Swiggy data analysis project. 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. This 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

3. Architecture Description

3.1 Data Overview–

Shop_Name	Location	Rating	Cost_for_Two	Area
Kanti Sweets	Koramangala, Koramangala	4.3	150	Koramangala
Mumbai Tiffin	Sector 5, HSR	4.4	400	HSR
Sri Krishna sagar	6th Block, Koramangala	4.1	126	Koramangala
Al Daaz	HSR, HSR	4.4	400	HSR
Beijing Bites	5th Block, Koramangala	4.1	450	Koramangala
Kitchens of Punjab	Koramangala 4th Block, Koramangala	4.2	350	Koramangala
99 VARIETY DOSA AND PAV BHAJI- Malli Mane Food Court	BTM 2nd Stage, BTM	4.1	200	BTM
La Pino'z Pizza	BTM, BTM	3.9	500	BTM
Hotel Manu	HSR, HSR	4.1	350	HSR
Yumlane Pizza	9th Main road, Koramangala	3.8	150	Koramangala
Ambur Star Briyani	outer ring road, BTM	4.1	500	BTM
Cake Box	Koramangala, Koramangala	4	247	Koramangala
Meghana Foods	5th Block, Koramangala	4.3	550	Koramangala
Momoz	5th Block, Koramangala	4.3	450	Koramangala
A2B - Adyar Ananda Bhavan	7th Block, Koramangala	4.2	450	Koramangala
Shawarma Inc	1st MAin, Koramangala	4.1	150	Koramangala
WarmOven Cake & Desserts	Koramangala, Koramangala	4.1	200	Koramangala
Sri Lakshmi Dhaba	Bommanahalli, BTM	3.7	200	BTM
Falahaar & Kota Kachori	6th Block, Koramangala	4.2	300	Koramangala
Shree Khana Khazana	Sector 4, HSR	4.1	350	HSR
Just Bake - Cakes & confectioners	BTM 1st stage, BTM	4.3	300	BTM
Maa Di Hatti	Jakkasandra Extn, Koramangala	4	129	Koramangala
Hotel Godavari	Marutinagar Main Road, BTM	4	400	BTM

: swiggy_data (117 rows) Column: Avg Rating (0 distinct values)

3.2 Problem Statement –

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.

Do ETL : Extract-Transform-Load the dataset and find for me some information from this large data. This is form of data mining.What all information can be achieved by mining this data, would be explained in class by the trainer Find key metrics and factors and show the meaningful relationships between attributes.

3.3 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

Import Dataset

```
In [2]: ## import data

        df = pd.read_csv("/Users/vaibhavjoshi/Desktop/Swiggy Bangalore Outlet Details (1).csv")
```

Show First 5 Rows

```
In [3]: ## head() gives first five rows of dataset.

        df.head()
```

Out[3]:

	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

3.4 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.
- Here, we make use of dataprep module to automate our EDA process.
- It provides the following information:
- **Overview**: detect the types of columns in a DataFrame.
- **Variables**: variable type, unique values, distinct count, missing values Quartile statistics like minimum value, Q1, median, Q3, maximum, range, interquartile range Descriptive statistics like mean, mode, standard deviation, sum, median absolute deviation, coefficient of variation, kurtosis, skewness.
- **Correlations**: highlighting of highly correlated variables, Spearman, Pearson and Kendall matrices
- **Missing Values**: Bar Chart, Heatmap and spectrum of missing values.

3.5 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.

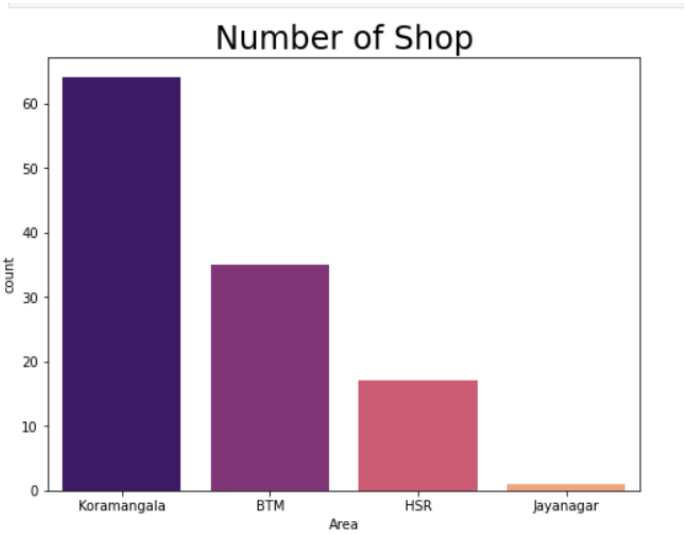
3.6 Data Analysis –

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.

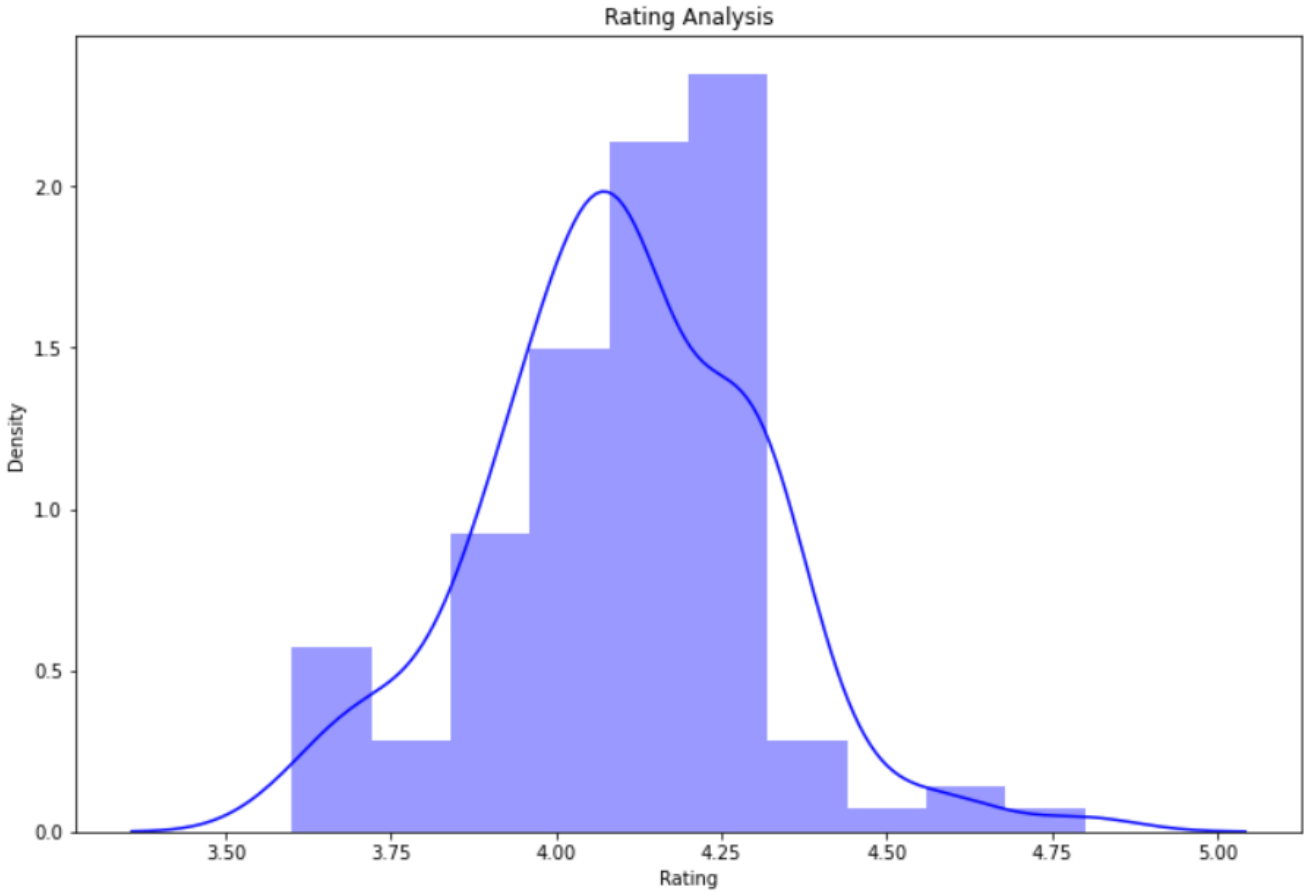
3.7 Data Visualization –

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.

Number of Shops in Each Area –



Koramangala Area have highest number of Restaurants



From the above distribution more than 50% restaurants are having rating greater than median rating(4.1).

maximum rating is 4.8

4 Technology Stack

Data Manipulation	Numpy,Pandas
Visualization	Matplotlib, Seaborn, Plotly
Power Bi	Creating dashboard
Github	Maintaining code
IDE	Jupyter Notebook