High Level Design

(Swiggy Data Analysis)

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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 Exploratory Data 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.

1. Introduction

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

1.1 Purpose of the Document

The purpose of this plan is to

- Describe different design approaches.
- Describe different analysis approaches based on variety of Use Cases.
- Describe third party components/tools required for the system.
- Present complete Process Flow followed for this project.

1.2 Objective of HLD

1. To provide an overview of the entire system.
2. To provide introduction of Problem Perspective & Statement, Data Requirements, Tools used and many more.
3. To provide a module-wise breakup of the entire system.

1.3 Scope of HLD

This HLD covers all areas of system.

2. General Description

2.1 Product Perspective & Problem Statement

Food industries are having important reflection of the economy from past few decades. 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 this project, we are analyzing the various aspects with different use cases which covers many aspects of Swiggy Food Delivery Service. 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.

The objective of the project is to perform an exploratory data analysis, data pre-processing, & data cleaning and at the end, apply different Data Visualization techniques to get the meaningful insight from the given data. This project aims apply some amazing Python Libraries such as Plotly and WordCloud which will give a boost to our visual understanding of the data.

2.2 Data Requirements

Data Requirement completely depend on our problem.

- In this project, to perform analysis, we are using datasets that are provided by iNeuron Intelligence Pvt. Ltd.
- The features which are taken into consideration are:
- Some of the important features are:

Name	Description
Shop_Name	Name of the Shop/Restaurants
Cuisine	Name of the different Cuisines provided by Restaurants.
Location	Restaurant Area/Location.
Rating	Rating given by the Customers out of 5.
Cost_for_Two (₹)	Approx. Cost of Two people w.r.t. Restaurants.

2.3 Tools Used

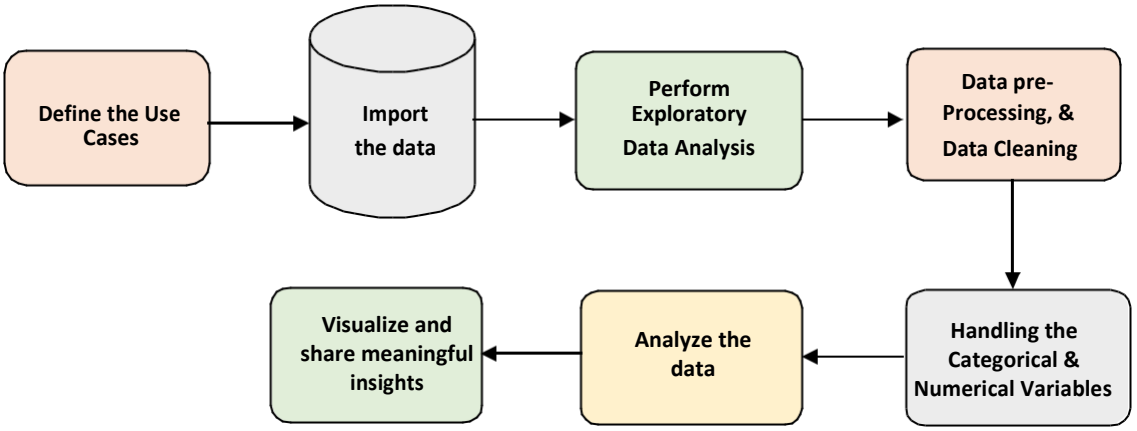
- Jupyter Notebook is used as IDE.
- Pandas and NumPy are used for Data Manipulation & Pre-processing and Mathematical functions respectively.
- Exploratory data analysis is automated by dataprep.
- For visualization of the plots, Matplotlib, Seaborn, Plotly are used.
- WordCloud is used to representing the Text Data.
- GitHub is used as version control system

2.4 Constraints

The analysis must be user friendly, code must be neat & clean, EDA 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.

3. Design Details

3.1 Process Flow



3.2 Error Handling / Exception Handling:

We have designed this project in such a way that, complete script is tested and runs multiple times to make sure that there is no error occurred during process flow.

Additionally, we have also dismissed the un-necessary warnings to avoid confusion by using filterwarnings class from warnings module.

4. Conclusion

In this analysis project, we have been analyzed several different use cases for the given dataset to make better business decisions and help analyze customer trends and satisfaction, which can lead to new and better products and services. It has been found that –

- In **BTM** Area: Most of the Restaurants has **4.0** to **4.2** Rating and Approx. Cost for Two People lies between **200** to **350**. (Max. Cost goes up to **600**)
- **HSR**: Most has **4** or above Rating and Approx. Cost for Two People lies between **300** to **400**. (Max. Cost goes up to **800**)
- **Koramangala**: Most has **4.0** to **4.3** Rating and Approx. Cost for Two People lies between **200** to **350**. (Max. Cost goes up to **600**)

With this we can conclude the Most Costly Area is **HSR**.

We have also analyzed that, we have **Total "82"** which are the "Budget Restaurants" as well as they are "Affordable".
On top of that, we have found-out, ***Most of the Affordable/Budgeted Restaurants*** are having ***Excellent Rating*** as well. Like, For ***Approx. Cost*** of **"200", "150", "250"**, and **"450"**, the ***Ratings*** were **"4.8", "4.6"**, and **"4.5"** respectively.
This might be because *Most of the people prefer Affordable/Budget-Restaurants* which also provides ***good quality*** of ***Cuisines***.
And On the other hand, there are ***few Expensive Restaurants*** who ***doesn't*** have that much ***Rating*** and they are ***Expensive*** *too*.
Those ***Restaurants Costs*** around **"600"** to **"800"** for ***Two People*** are having the ***Ratings in between '4.0' to '4.1'*** which is ***too less*** as compared to ***Affordable/Budgeted Restaurants***.

In addition to that, we have also performed Analysis on the Cuisines w.r.t. different Areas/Location and We have found-out:

- In **BTM** Area, ***Most of the Restaurants*** sell **"Chinese"** which is around **'17.1%'** followed by **"North Indian"** & **"South Indian"** Cuisines which are around **'15.2%'** & **'9.52%'**.
- So, we can also infer that Most of the people are fond of these Cuisines.
- In **HSR** Area, **"North Indian"** Cuisines are dominated by around **'14.3%'** followed by **"Chinese"** & **"South Indian"** Cuisines **'9.52%'** & **'9.52%'** Restaurants respectively.
- In **Koramangala** Area, **"Chinese"** Cuisines are dominated by around **'10.3%'** followed by **"North Indian"** & **"South Indian"** Cuisines **'9.66%'** & **'7.59%'** Restaurants respectively.

- Furthermore, we have also been analyzed Cheapest/Expensive & Highest Rated Restaurants with Approx. Cost for 2 People and many more.

5. References

1. Business Model Of Swiggy | How Swiggy works & Make Money | Casestudy (tristatetechnology.com)
2. Swiggy Business Model | How Swiggy Works & Makes Money | Feedough
3. Swiggy - Wikipedia