

# Low Level Design (LLD)

**ZOMATO RESTAURANT RATINGS PREDICTION**

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# Document Version Control

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# CONTENTS

1. Document Version Control.....	2
2. Introduction .....	4
1.1 What is low-level Design Document. ....	4
1.2 Scope .....	4
1.3 Project Introduction .....	4
3. Problem Statement.....	5
4. Dataset Information.....	5
4. Architecture .....	6
4.1 Architecture Description .....	6

# 1. Introduction

## 1.1 What is low-level Design

The goal of the Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Zomato Restaurant Analysis and predict their ratings. LLDD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so that the programmer can directly code the program from the document

## 1.2 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.

## 1.3 Project Introduction

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. Problem Statement

The number of restaurants is increasing day by day. Currently, it stands at approximately 12,000 restaurants. With such a high number of restaurants. This industry hasn't been saturated yet. And new restaurants are opening every day. However, it has become difficult for them to compete with already established restaurants. The key issues that continue to pose a challenge to them include high real estate costs, rising food costs, shortage of quality manpower, fragmented supply chain, and over-licensing. You must analyze the Zomato restaurant and predict their ratings for better future preparation. A dataset is formed by taking into consideration some of the information of approximately 17,000 restaurants.

## 3. Dataset Information

**url** - contains the url of the restaurant in the Zomato website.

**address** - contains the address of the restaurant in Bangalore.

**name** - contains the names of the restaurants.

**online\_order** - whether online ordering is available in the restaurant or not

**book\_table** - table book option available or not.

**rate** - contains the overall rating of the restaurant out of 5.

**votes** - contains the total number of ratings for the restaurant as of the above-mentioned date.

**phone** - contains the phone number of the restaurants.

**location** - contains the neighborhood in which the restaurant is located

**rest\_type** - restaurants type.

**dish\_liked** - dishes people liked in the restaurants.

**cuisines** - food styles, separated by comma

**approx\_cost(for two people)** - contains the approximate cost for meal for two peoples.

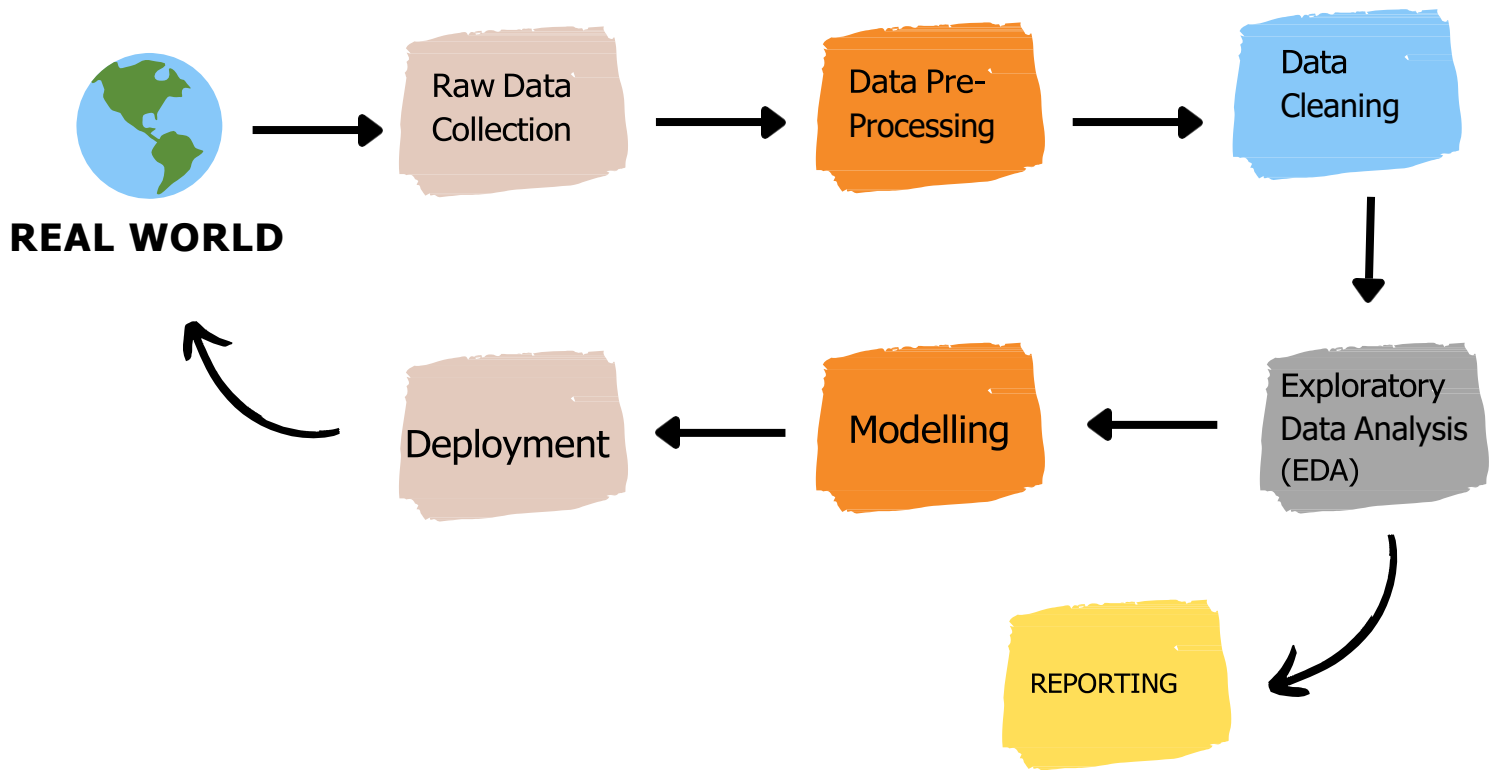
**reviews\_list** - list of tuples containing reviews for the restaurant, each tuple.

**menu\_item** - contains list of menus available in the restaurant

**listed\_in(type)** - type of meals.

**listed\_in(city)** - contains the neighborhood in which the restaurant is listed.

## 4. Architecture



### 4.1 Architecture Description

#### 1. Raw Data Collection

The dataset was taken from iNeuron provided Project Description Document.  
Link - <https://www.kaggle.com/datasets/himanshupoddar/zomato-bangalore-restaurants?resource=download>

#### 2. 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 fed to the model to train.

This process includes-

- Handling Null values / Duplicated values
- Handling skewed values.
- Outliers Detection and Removal

### 3. Data Cleaning

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

- a) Remove duplicate or irrelevant observations.
- b) Filter unwanted outliers
- c) Renaming required attributes.

### 4. Exploratory Data Analysis

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

### 5. Reporting

Reporting is a most important and understandable skill in a data analytics fields. Because being a data analyst you should be a good and self-explanatory report because your model will be used by many stakeholders. who are not from a technical background.

- a) High-Level Design Document (HLD).
- b) Low-Level Design Document (LLD).
- c) Architecture
- d) Wireframe
- e) Detailed Project Report.

### 6. Modelling

Data Modelling is the process of analyzing the data objects and their relationship to other objects. It is used to analyze the data requirements 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. Model Building refers to the process of developing a machine-learning model that can learn patterns from data and make predictions or perform tasks based on those patterns.

## 7. Data From User

Here we will collect the data from the user. The user will directly Input the Data from the User-Interface. After that data will converted as a dataframe and stored.

## 8. Prediction

In this step, using the best-performing model and predicting the output are based on pre-processed user-input data. In the last the Result will be shown on the UI with the help of HTML

## 9. Deployment

