“ZOMATO RESTAURANTS RATING PREDICTION”

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CONTENTS

Business Problem

Problem Description

Restaurants from all over the world can be found here in Bengaluru. From United States to Japan, Russia to Antarctica, you get all type of cuisines here. Delivery, Dine-out, Pubs, Bars, Drinks, Buffet, Desserts you name it and Bengaluru has it. Bengaluru is best place for foodies. The number of restaurant is increasing day by day. Currently which stands at approximately 12,000 restaurants. With such a high number of restaurants. And new restaurants are opening every day. However, it has become difficult for them to compete with already established restaurants. This Zomato data aims at analyzing the demography of the location.

Most importantly it will help new restaurants in deciding their theme, menus, cuisine, cost etc…. for a particular location.

It also aims at finding similarities between neighborhoods of Bengaluru on the basis of food.

- Does demography of area matters?

- Does location of particular type of restaurant depends on people living in that area>

- Are any neighborhood on similar based on the type of food?

- Is particular neighbors is famous for its own kind of food?

- What kind of food is famous in locality?

Problem Statement

The dataset also contains reviews for each of the restaurants which will help in finding an overall rating for the place. So we will try to predict rating for a particular restaurant.

Real-world/Business Objectives

We need to predict rating based on different parameters like Average cost for two people, Online Order available, foods, menu list, most liked dishes etc... features.

Machine Learning Formulation

Here we suppose to predict rating of a restaurant, so it is basically a **Regression** problem.

Performance Metric

We will try to reduce Mean Square Error i.e **MSE** as minimum as possible. So it is a **Regression** problem reducing **MSE**.
-Ideal MSE is 0.

STEPS:

1. STRATEGY: Fixing the problem with accurate solution
2. Dataset preparation and preparation and preprocessing

   Data collection

   Data visualization

   Data cleaning

   Data preprocessing

   Data transformation

3. Dataset splitting
4. Modelling
5. Model deployment

Tools Used

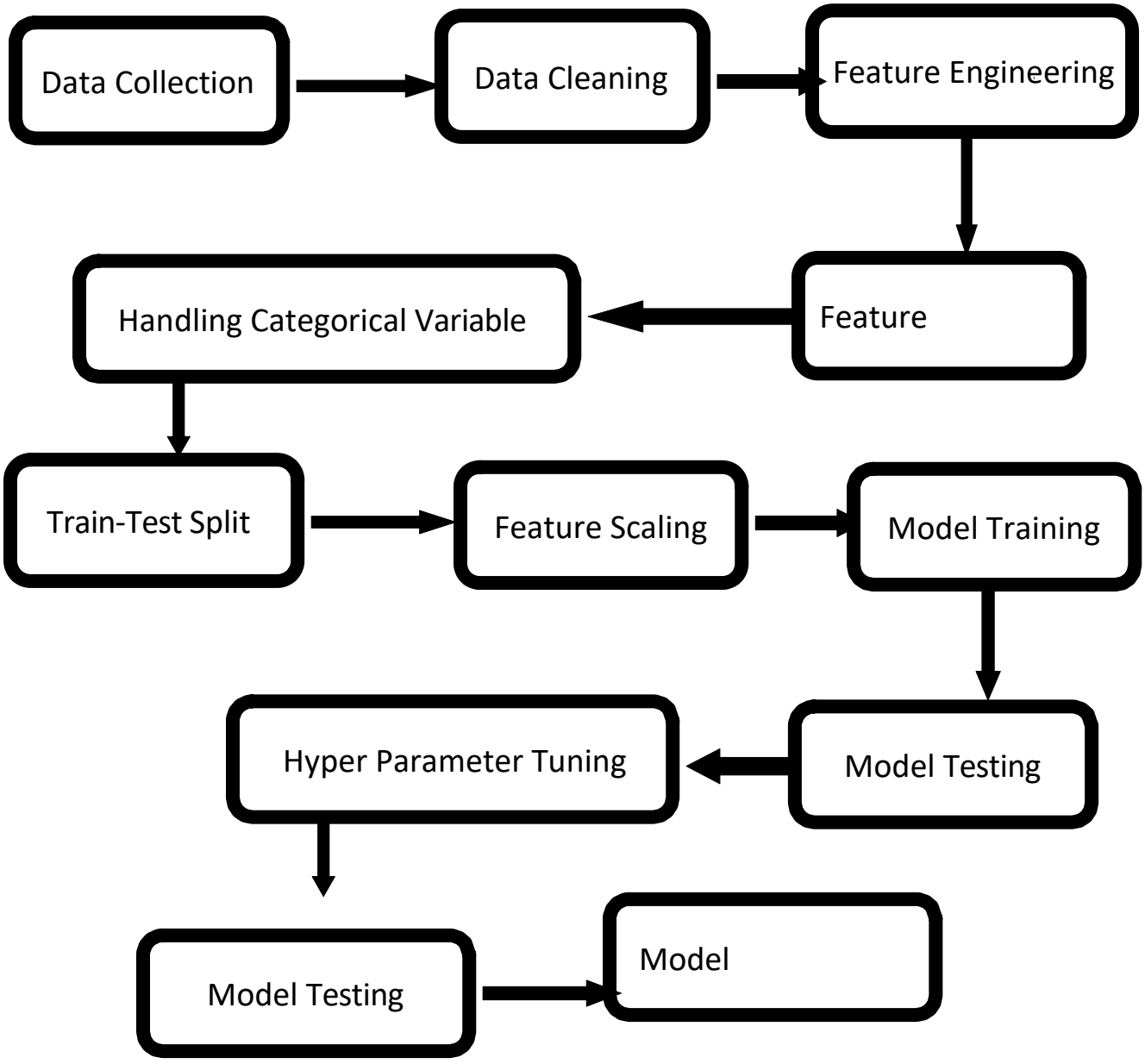

- Jupyter is used as Development platform.
- For visualization of the plots, Matplotlib, Seaborn are used.
- Heroku is used for deployment of the model.
- Front end development is done using HTML/CSS, Flask is used for backend development and for API development.
- GitHub is used as version control system.

Constraints

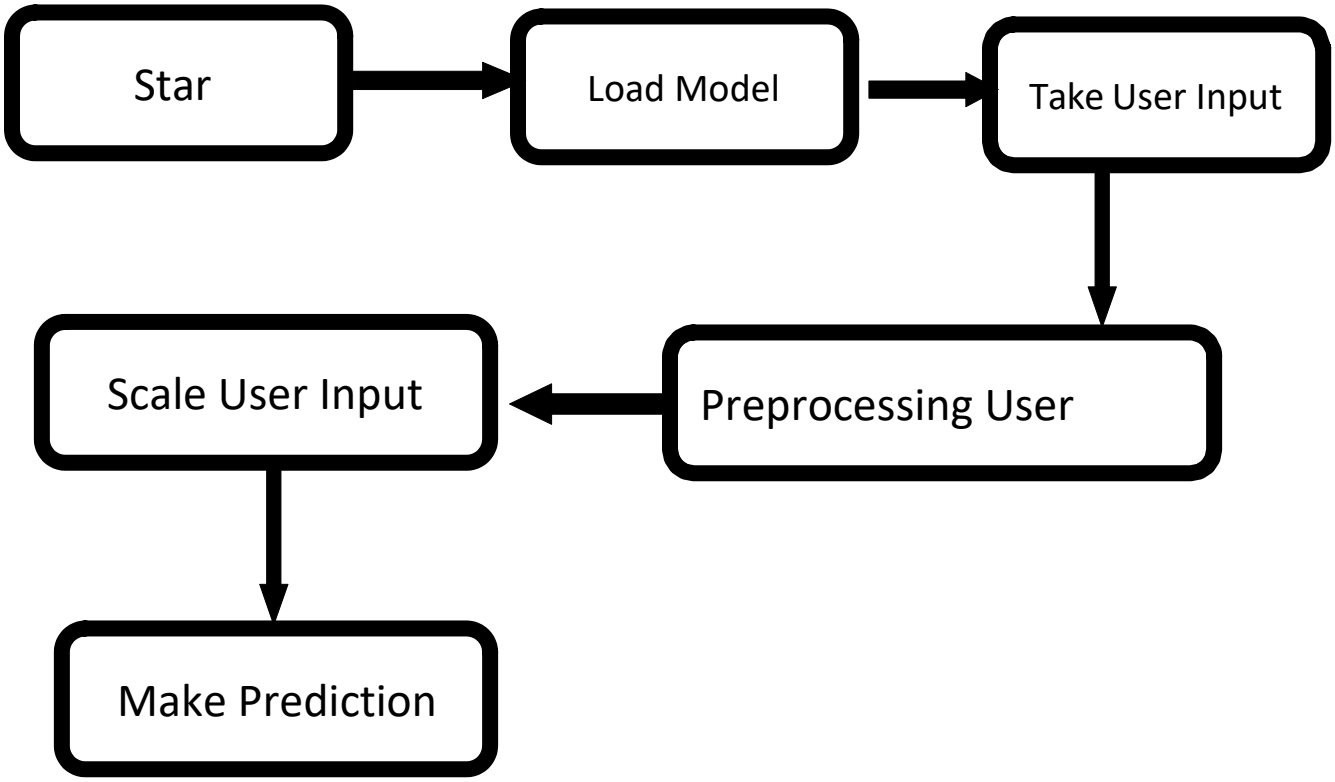
The Restaurant rating prediction system must be user friendly, errors free and users should not be required to know any of the back-end working.

Design Details`

Process Flow



Deployment Process



Error Handling

We have designed this project in such a way that, at any step if error occur then our application should not terminate rather it should catch that error and display that error with proper explanation as to what went wrong during process flow.

Re-usability

We have done programming of this project in such a way that it should be reusable. So that anyone can add and contribute without facing any problems.

Application Compatibility

The different module of this project is using Python as an interface between them. Each modules have it is own job to perform and it is the job of the Python to ensure the proper transfer of information.

Resource Utilization

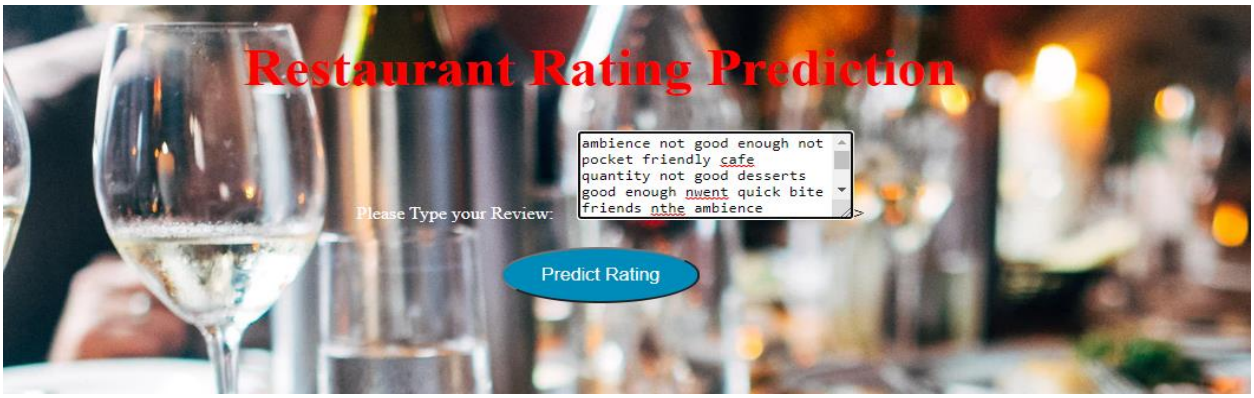
In this project, when any task is performed, it will likely that the task will use all the processing power available in that particular system until it's job finished.

Deployment

We have deployed this as web application by using heroku.

CONCLUSION

In this a number of features about existing restaurants of different areas in a city and analyses them to predict rating of the restaurant. This makes it an important aspect to be considered, before making a dining decision. Such analysis is essential part of planning before establishing a venture like that of a restaurant. Lot of researches have been made on factors which affect sales and market in restaurant industry. Various dine-scape factors have been analysed to improve customer satisfaction levels. If the data for other cities is also collected, such predictions could be made for accurate and more helpful.



THE PREDICETED RATING IS 3.8

HIGH LEVEL DOCUMENT(HLD)