Detail Project Report

ZOMATO RESTAURANT RATINGS

13/08/2024

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Project Title: Restaurant rating prediction

Technology: Machine learning Technology

Domain: E-commerce

Project difficulty level: Intermedia

Programming language: Python

The tool used: Jupyter, Data spell, Streamlit
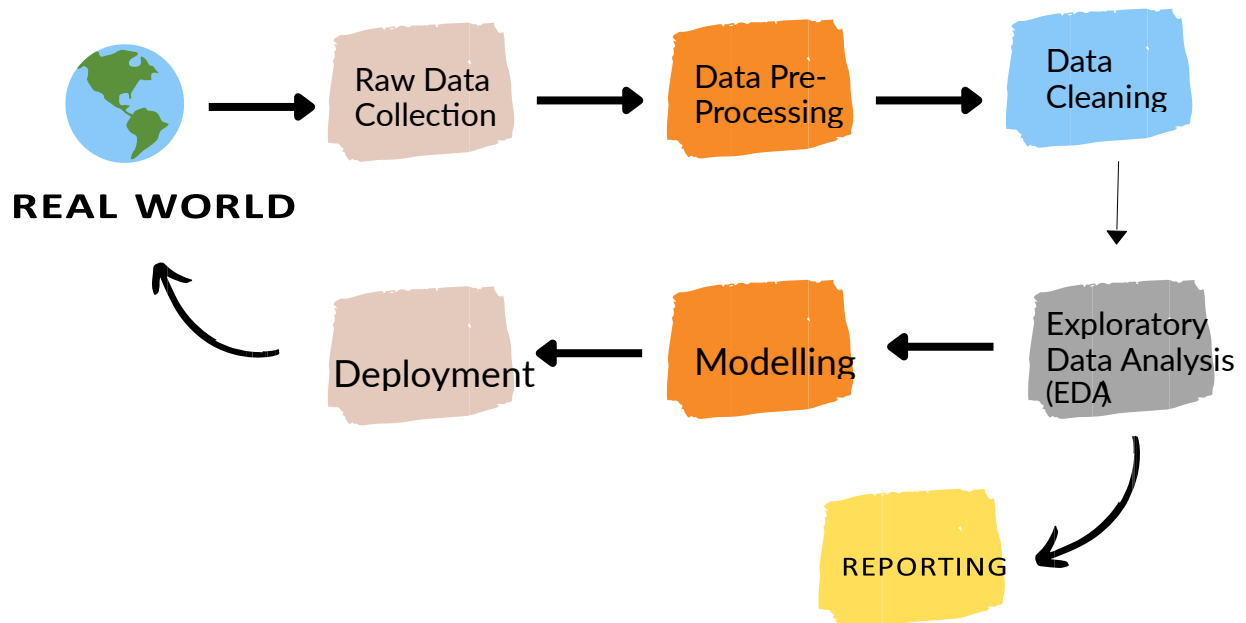
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Objective:

The main goal of this project is to perform extensive Exploratory Data Analysis(EDA) on the Zomato Dataset and build an appropriate Machine Learning Model that will help various Zomato Restaurants to predict their respective Ratings based on certain features

Problem statement:

The underlying problem is that it has become difficult for non-established restaurants to compete with already-established ones. You are required to predict the rating for their better future.

Data is formed by taking 12,000 restaurants, serving dishes from all over the world. The data include the Location of the restaurant, Theme based on the restaurant or not, and many more things

Architecture:

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Dataset

URL	Contains the URL of the restaurant in the Zomato website
Address Name	Contains the address of the restaurant in Bengaluru
Online order	Contains the name of the restaurant whether online ordering is available in the restaurant or not.
Book table	Table book option available or not
Location rest	Contains the neighborhood in which the restaurant is located
Type	The type of restaurant

Key Performance:

1. Percentage of People book tables online or offline.
2. Location of restaurants.
3. Neighborhood in which the restaurants is listed.
4. Restaurants accept online orders or not.
5. Most liked dish of the restaurants.
6. Cuisine of the respective restaurants.

Conclusion:

I.   Most restaurants don't offer table booking.
II. From the analysis, most of the ratings are between 3.5 and 4.5.
III. From the analysis. we can see that most of the restaurants are located in 'Koramangala 5th Block', 'BTM' & 'Indiranagar'. The least restaurants are located 'KR Puram', 'Kanakapura', and 'Magadi Road'.
IV. 'Casual Dining', 'Quick Bites', 'Cafe', and 'Dessert Parlor' are the most common types of restaurants. And 'Food Court', 'Casual Dining', and 'Dhaba' are the least common.
V.   From the analysis, pasta & Pizza most famous food in Bangalore restaurants.
VI. From the analysis, we can see that North Indian Cuisines are the most famous in Bangalore restaurants.
VII. Two main service types are Delivery and Dine-out.
VIII. From the analysis, we can see that 'Oneota', 'Truffles' & 'Empire Restaurant' are highly voted restaurants.
IX. For the modeling part, I used LinearRegression, Decision Tree Regressor, Random Forest Regressor, Supervector Regressor & Extreme Tree Regressor. From all these

models Extreme Tree Regressor performs well compared to the other models. So, I selected Extreme Tree Regressor for model creation.

Question:

Q1) What's the source of data?

The Dataset was taken from the Kaggle Website.

Q2) What was the type of data?

The data was a combination of numerical and Categorical values.

Q3) What's the complete flow you followed in this project?

Refer to Slide 5th for a better understanding.

Q4) What techniques were you using for data?

    I.   Removing unwanted attributes. Visualizing the relation of independent variables with each other and output variables.

   II.   Removing outliers

 III.   Cleaning data and imputing if null values are present.

 IV.   Converting Categorical data into Numerical data.

Q5) What were the libraries that you used in Python?

I used pandas, NumPy, Matplotlib, Seaborn, and libraries in Python.