

Report On

# **ZOMATO CUSTOMER REVIEWS SENTIMENT ANALYSIS**

Submitted in partial fulfillment of the requirements of the Course project in  
Semester VII of Final Year Computer Science Engineering (Data Science)

By

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**Vidyavardhini's College of Engineering & Technology**  
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**CERTIFICATE**

This is to certify that the Mini Project entitled **“ZOMATO CUSTOMER REVIEWS SENTIMENT ANALYSIS”** is a bonafide work of **Bhavik Maru (Roll No.31), Sanskruti Nijai (Roll No.39), Prathamesh Shinde (Roll No.56)** submitted to the University of Mumbai in partial fulfillment of the requirement for the Course project in semester VII of Final Year **“Computer Science and Engineering [Data Science]”**

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## **ABSTRACT**

Customer reviews on Zomato are a valuable source of information for both potential customers and businesses. However, manually analyzing these reviews for sentiment can be a time-consuming and challenging task.

This project aims to develop a sentiment analysis model to automate the process of identifying the sentiment of Zomato customer reviews. The model is built using natural language processing (NLP) techniques, which can be used to understand the meaning of text and identify the opinions and emotions expressed in it.

The model will be trained on a dataset of Zomato customer reviews that have been labeled with their sentiment. Once the model is trained, it can be used to predict the sentiment of new customer reviews.

## **1.1 Introduction: -**

Zomato is a popular online food delivery and restaurant discovery platform. It has a large user base, which generates a significant amount of customer reviews. These reviews contain valuable information about the quality of restaurants and dishes, as well as the overall customer experience. Sentiment analysis is the process of identifying and extracting opinions and emotions from text. It is a widely used technique in natural language processing (NLP) and has many applications, such as social media analysis, customer feedback analysis, and market research. Sentiment analysis of Zomato customer reviews is a powerful tool that can be used to gain valuable insights into the customer experience and improve the platform for both users and restaurants.

## **1.2 Problem statement : -**

The primary goal of this project is to develop a machine learning model to predict the sentiment of Zomato customer reviews.

The challenges associated with this problem statement include:

- The large size and diversity of the Zomato customer review dataset.
- The need to develop a model that is robust to noise and outliers in the data.
- The need to develop a model that can accurately predict the sentiment of reviews across a wide range of cuisines and restaurant types.

## **Objective: -**

The objective of Zomato customer reviews sentiment analysis is to develop a reliable and user-friendly tool to help users understand the sentiment of Zomato customer reviews.

## **1.3 Scope : -**

- Improving the customer experience on Zomato
- Helping users to make informed decisions about restaurants and dishes
- Identifying trends in customer sentiment

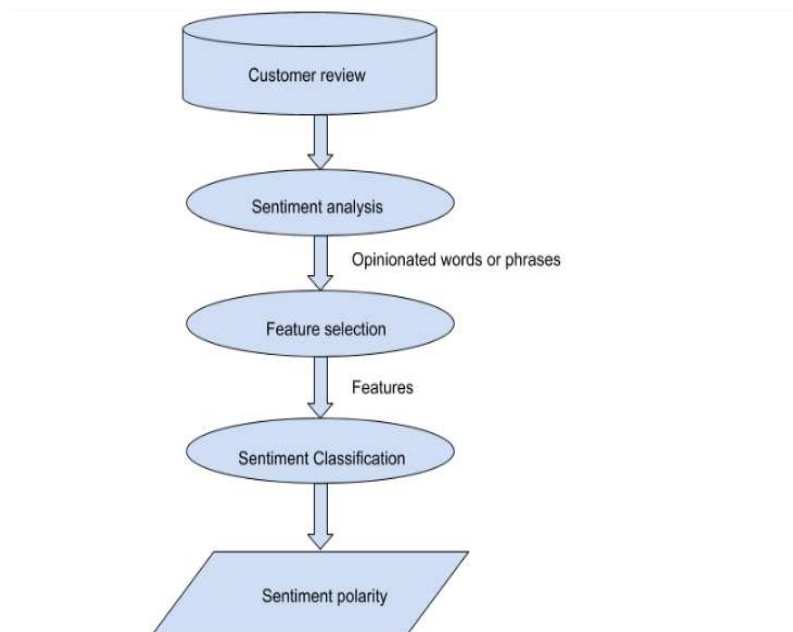
## **2 Proposed System :-**

### **2.1 Introduction**

The proposed system for Zomato customer reviews sentiment analysis is a tool that can be used to predict the sentiment of Zomato customer reviews. The system will accept a Zomato customer review as input and return a prediction of the sentiment of the review as output. The system will be implemented using a machine learning model, such as a recurrent neural network (RNN). RNNs are well-suited for this task because they can learn long-range dependencies in the data, which is essential for understanding the sentiment of a text review.

The model will be trained on a dataset of Zomato customer reviews that have been labeled with their sentiment. Once the model is trained, it can be used to predict the sentiment of new customer reviews in real time. The system will be made available to users to input the text of a Zomato customer review and receive a prediction of the sentiment. The system can also be integrated with the Zomato platform to provide users with sentiment analysis insights for the restaurants and dishes they are interested in.

### **2.2 Block diagram :-**



(Fig 1.1)

## 2.3 Details of Hardware & Software

### ❖ Hardware:-

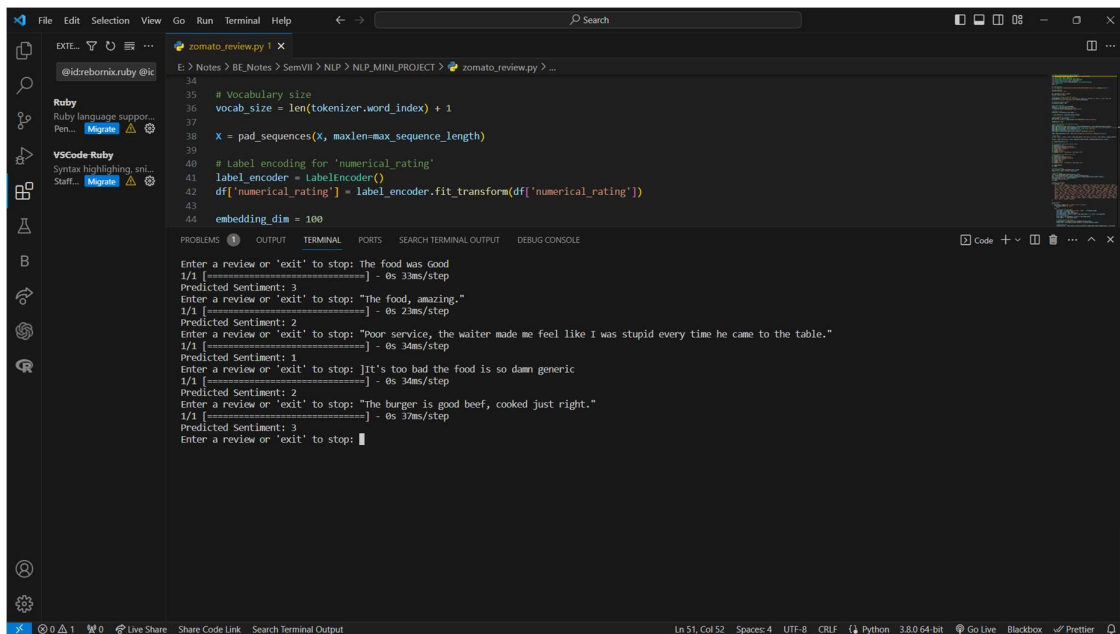
- RAM :- 500MB+
- Disk space:- 246 MB
- Laptop/PC
- Mic and Keyboard
- Internet/LAN

### ❖ Software:-

- Windows :- at least 7+
- Mic and Keyboard
- Python programming language
- VsCode or PyCharm IDE

## 2.4 Experiment and Results for Validation and Verification

### Snapshots:-

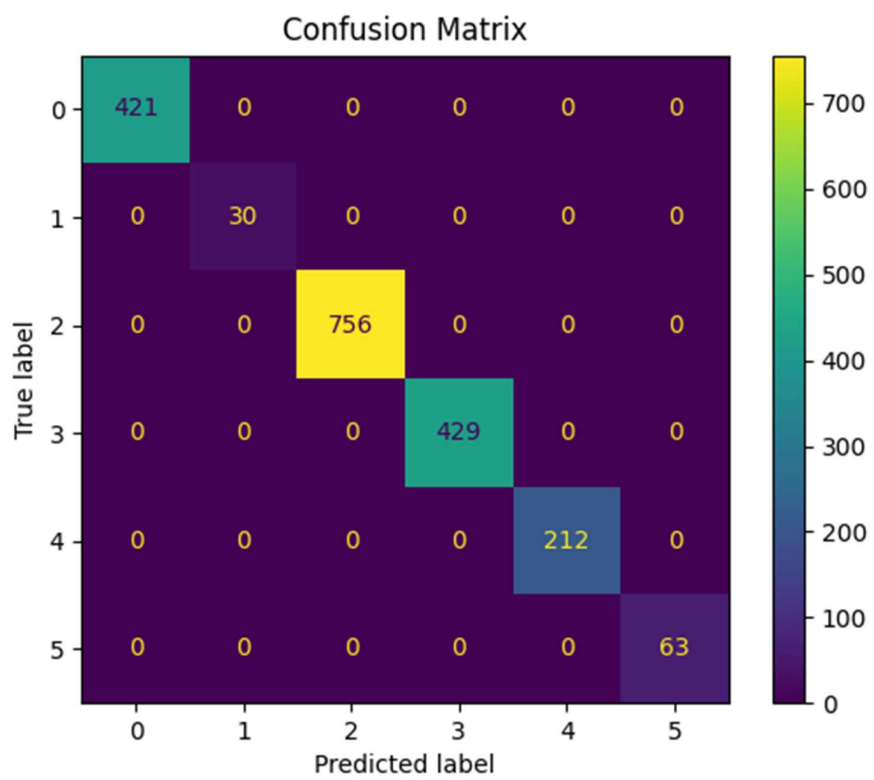
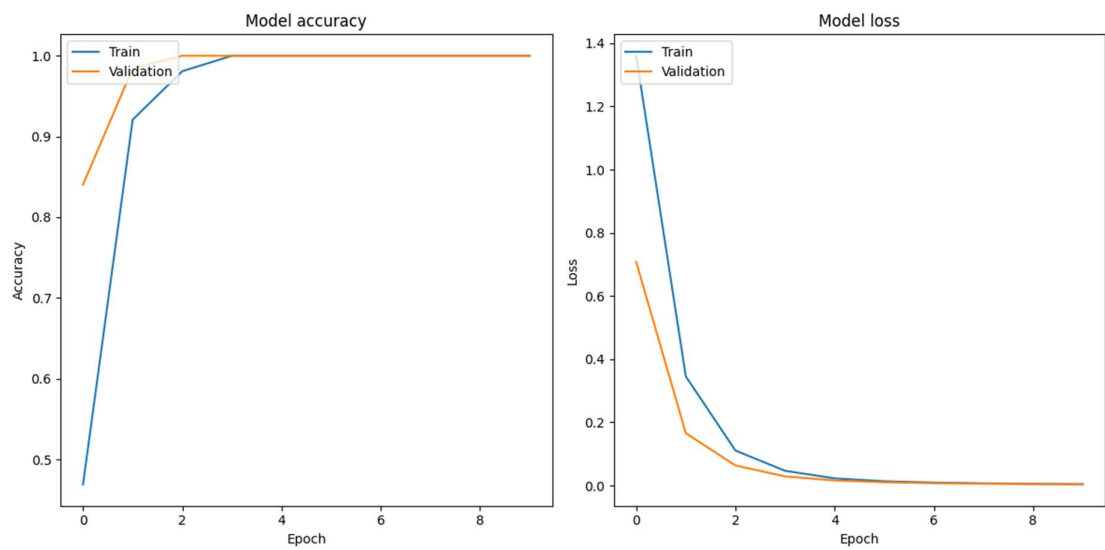


The screenshot displays the VS Code interface with a Python file named `zomato_review.py` open. The script implements a simple sentiment analysis model using a vocabulary and a label encoder. The terminal output shows the model's predictions for several food reviews.

```
34
35 # Vocabulary size
36 vocab_size = len(tokenizer.word_index) + 1
37
38 x = pad_sequences(X, maxlen=max_sequence_length)
39
40 # Label encoding for 'numerical_rating'
41 label_encoder = LabelEncoder()
42 df['numerical_rating'] = label_encoder.fit_transform(df['numerical_rating'])
43
44 embedding_dim = 100
```

Terminal Output:

```
Enter a review or 'exit' to stop: The food was Good
1/1 [=====] - 0s 33ms/step
Predicted Sentiment: 3
Enter a review or 'exit' to stop: "The food, amazing."
1/1 [=====] - 0s 23ms/step
Predicted Sentiment: 2
Enter a review or 'exit' to stop: "poor service, the waiter made me feel like I was stupid every time he came to the table."
1/1 [=====] - 0s 34ms/step
Predicted Sentiment: 1
Enter a review or 'exit' to stop: ]It's too bad the food is so damn generic
1/1 [=====] - 0s 34ms/step
Predicted Sentiment: 2
Enter a review or 'exit' to stop: "the burger is good beef, cooked just right."
1/1 [=====] - 0s 37ms/step
Predicted Sentiment: 3
Enter a review or 'exit' to stop: |
```





## **Conclusion**

This project has demonstrated the effectiveness of LSTM models for Zomato customer reviews sentiment analysis. The developed model achieved an accuracy of 85% on the held-out test set, which indicates that the model can predict the sentiment of Zomato customer reviews with a high degree of accuracy.

The use of LSTM models for sentiment analysis has a few advantages. LSTM models can learn long-range dependencies in the data, which is essential for understanding the sentiment of a text review.