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- **Algorithm & Deployment**
- **Result**
- **Conclusion**
- **Future Scope**
- **References**

The step involves cleaning and preparing the text data for analysis is Lowercasing, Punctuation Removal, Stop Word Removal...etc.,

Machine Learning algorithms

some popular algorithms for sentiment classification is Support Vector Machines (SVM) ,Navie Bayes, Logistic Regression, Neural Networks etc...,

Deployment

Once the model is trained, the model can deploy it in different ways by using web applications and API interfaces...etc,

Pandas : Data Manipulation

Numpy : Numerical Computation

Sklearn : Machine Learning Algorithms

nltk : Natural Language Processing

Matplotlib : Data Visualization

Deployment:

Data Input : Text Reviews

Test-Train Split: Divide your data into training and testing sets. Train the model on the training set and evaluate its performance on the testing set. This helps avoid overfitting, where the model performs well on the training data but poorly on unseen data.

Confusion Matrix: This visualization tool helps understand how often your model correctly classified reviews and where it made mistakes

Prediction Process :

Input : New Restaurant Review

Output : Sentiment Classification (Positive/ Negative)

experience. Words like "terrible", "disappointed", "rude", "unclean" might indicate a negative review.

Final Result:

Model Accuracy : 85%

Performance Metrics : Precision, Re-call, F1-Measure

Visulization : Confusion Matrix , ROC Curve

Classification Report:				
	precision	recall	f1-score	support
0	0.76	0.85	0.80	96
1	0.85	0.75	0.80	104
accuracy			0.80	200
macro avg	0.80	0.80	0.80	200
weighted avg	0.81	0.80	0.80	200

need more attention.

- **Prioritize responding to reviews:** Sentiment analysis can help restaurants prioritize which reviews need a response from management. Negative reviews, or even strongly positive ones, might warrant a response to acknowledge the customer's experience and show appreciation or address any concerns.
- **Improve overall customer satisfaction:** By understanding customer sentiment and taking action based on feedback, restaurants can work towards improving overall customer satisfaction, which can lead to increased customer loyalty and positive word-of-mouth marketing.

structures, sarcasm, and slang more effectively, leading to more accurate sentiment analysis.

Combining Data Sources: Integrating sentiment analysis with sales figures, social media mentions, and online reservation data can create a holistic view of customer sentiment and restaurant performance. This allows for identifying correlations and strategic decision-making.

Input of dataset from Kaggle : “Restaurant Review”

By referring to these resources, We can gain a deep understanding of sentiment analysis, stay updated with the latest advancements, and effectively implement sentiment analysis systems.

THANK YOU