

Experiment No. 10

Aim: To develop social media text analytics models for improving existing products/services.

Theory:

1. Explain Review mining and negative review mining.

Ans : Review mining is the process of extracting useful information from customer reviews using techniques from text mining and natural language processing (NLP). It helps businesses understand customer opinions, preferences, and overall satisfaction regarding a product or service.

In review mining, large amounts of textual data (reviews, comments, feedback) are analyzed to identify patterns such as positive, negative, or neutral sentiments, common keywords, and frequently discussed features. This enables companies to make data-driven decisions, improve products, and enhance customer experience. It is widely used in e-commerce platforms like Amazon and Flipkart to analyze user feedback.

Negative review mining is a specialized part of review mining that focuses only on extracting and analyzing **negative feedback** given by customers. The main goal is to identify problems, complaints, and weaknesses in a product or service.

This process involves filtering out negative reviews and analyzing them to detect common issues such as **poor quality, defects, pricing concerns, or bad user experience**. By studying these reviews, businesses can quickly identify critical problems, take corrective actions, and improve customer satisfaction. Negative review mining is especially important because it highlights areas that require immediate attention and improvement.

Implementation:

Choose any product of your choice and perform the following tasks:

- a. Analyse negative reviews/comments.
- b. Find out features/ areas for which users have been giving negative reviews for your chosen product.
- c. Develop social media text analytics models for improving existing product/ service.
- d. Conclude your findings and suggest improvements in the product.

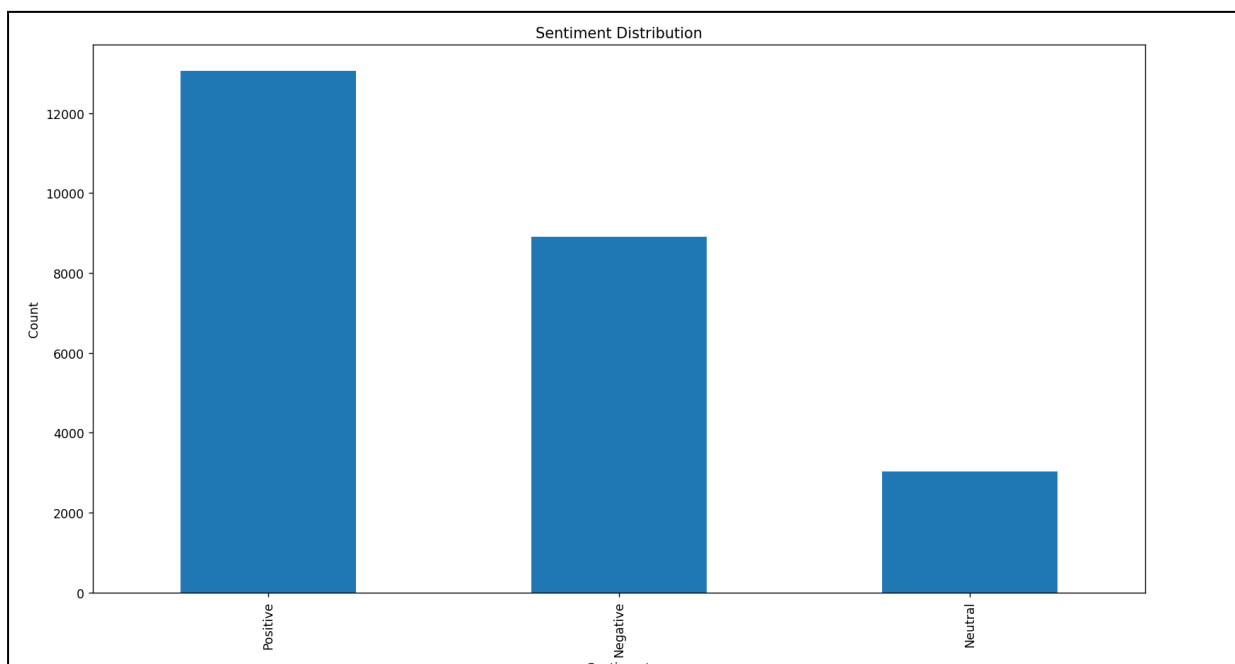
Code:

```
import pandas as pd
from textblob import TextBlob
import matplotlib.pyplot as plt
```

```
df = pd.read_csv("Customer_Sentiment.csv")
```

```
def get_sentiment(text):  
    analysis = TextBlob(str(text))  
    polarity = analysis.sentiment.polarity  
    if polarity > 0:  
        return "Positive"  
    elif polarity == 0:  
        return "Neutral"  
    else:  
        return "Negative"  
  
df['Sentiment'] = df['review_text'].apply(get_sentiment)  
sentiment_counts = df['Sentiment'].value_counts()  
plt.figure()  
sentiment_counts.plot(kind='bar')  
plt.title("Sentiment Distribution")  
plt.xlabel("Sentiment")  
plt.ylabel("Count")  
plt.show()  
negative_reviews = df[df['Sentiment'] == "Negative"]  
top_5_negative = negative_reviews.head(5)  
print("\nTop 5 Negative Reviews:\n")  
print(top_5_negative[['review_text']].info())
```

Screenshots of Execution:



```
PS C:\Users\Solan\OneDrive\Desktop\new> & C:\Users\Solan\OneDrive\Desktop\new/main.py

Top 5 Negative Reviews:

      review_text
0      very disappointed with the quality.
2      very disappointed with the quality.
3  product stopped working after few days.
10     not worth the price.
11     very disappointed with the quality.
PS C:\Users\Solan\OneDrive\Desktop\new>
```

The negative reviews clearly highlight major issues related to poor product quality, lack of durability, and low value for money. Customers are dissatisfied because the product stops working within a short time and does not meet their expectations. This indicates a need to improve manufacturing standards and ensure consistent quality checks before delivery.

To address these concerns, the company should focus on enhancing product quality using better materials and stricter quality control processes. Additionally, improving product testing, offering warranties, and aligning pricing with performance can increase customer trust and satisfaction.

Conclusion :

The experiment successfully demonstrated how review mining can be used to understand customer opinions through sentiment analysis. By analyzing the dataset, we were able to identify the overall sentiment distribution and focus on negative reviews to highlight key issues. The negative feedback revealed common problems like poor quality and lack of durability. This shows that such analysis helps businesses quickly detect weaknesses in their products. Overall, the experiment proves that review mining is a useful tool for improving product quality and customer satisfaction.