Sentiment Analysis of Product Reviews

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Project Title: Sentiment Analysis of Product Reviews

1. Introduction

Sentiment analysis is a Natural Language Processing (NLP) technique used to determine whether a piece of text is positive, negative, or neutral. This project focuses on analyzing the sentiment of customer product reviews using Python. The goal is to classify reviews based on sentiment to help businesses better understand customer feedback.

2. Tools and Technologies Used

- Python

- Jupyter Notebook

- Pandas

- TextBlob

- Matplotlib

- WordCloud

3. Dataset

The dataset used in this project is a CSV file named 'reviews.csv'. It contains a single column of customer product reviews. These reviews are analyzed to classify their sentiment as positive or negative.

4. Methodology

1. Load the dataset using Pandas.

2. Preprocess the reviews.

3. Use TextBlob to analyze the sentiment polarity.

4. Classify the sentiment as Positive or Negative.

5. Visualize the results using bar charts and a word cloud.

5. Results

The sentiment analysis model successfully classified the reviews into positive and negative categories. Visualizations such as bar charts and word clouds helped in understanding the most common sentiments and frequently used words in the reviews.

6. Conclusion

This project demonstrates a basic implementation of sentiment analysis using Python. It provides useful insights into customer opinions and can be further enhanced by using more advanced NLP models and larger datasets.