# SENTIMENT ANALYSIS FOR MARKETING

**1. Introduction:**

- Briefly introduce the sentiment analysis project and its context.
- Explain the importance of understanding customer sentiment in marketing.
- Highlight the goal of analyzing marketing-related text data.

**2. Objectives:**

- Define specific project objectives, such as sentiment classification.
- Clarify the desired outcomes, like improving marketing strategies.
- Emphasize the project's potential impact on businesses.

**3. Data:**

- Identify the source of the marketing data, e.g., social media or reviews.
- Describe the dataset's size, including the number of data points.
- Highlight any unique characteristics of the dataset.

**4. Preprocessing:**

- Discuss data cleaning steps, such as handling missing values.
- Explain text preprocessing techniques like lowercasing and tokenization.
- Address the importance of preparing data for analysis.

**5. Features:**

- Elaborate on the chosen feature extraction method, such as TF-IDF.
- Describe how text data is transformed into numerical features.
- Highlight the relevance of feature extraction in text analysis.

**6. Model:**

- Specify the machine learning algorithm used, e.g., RandomForest Classifier.

- Mention the training process on preprocessed data.

- If applicable, describe any hyperparameter tuning.

**7. Evaluation:**

- Explain the key performance metrics, such as accuracy and precision.

- Detail the dataset split into training and testing sets.

- Describe how the model's performance is assessed.

**8. Results:**

- Summarize the performance of the sentiment analysis model.

- Share insights gained from the model evaluation.

- Address any challenges encountered during the project.

**9. Conclusion:**

- Recap the project's objectives and achievements.

- Discuss practical implications for businesses.

- Suggest possible future improvements or extensions of the project.

**10.Reference:**

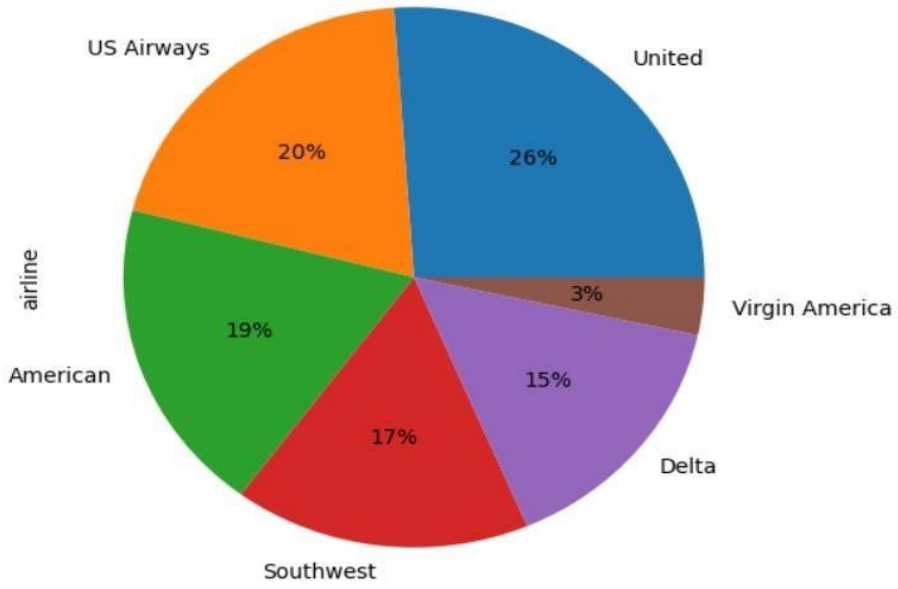
**Code:**

```
import numpy as np  import
pandas as pd  import re import
nltk  import matplotlib.pyplot
as plt
%matplotlib inline
airline_tweets = pd.read_csv(r'D:\Tweets.csv') airline_tweets.head()
airline_tweets.airline.value_counts().plot(kind='pie', autopct='%1.0f%%')
airline_tweets.airline_sentiment.value_counts().plot(kind='pie', autopct='%1.0f%%',
colors=["brown", "gold", "blue"]) airline_sentiment =
airline_tweets.groupby(['airline',
'airline_sentiment']).airline_sentiment.count().unstack()
airline_sentiment.plot(kind='bar')
import seaborn as sns
```

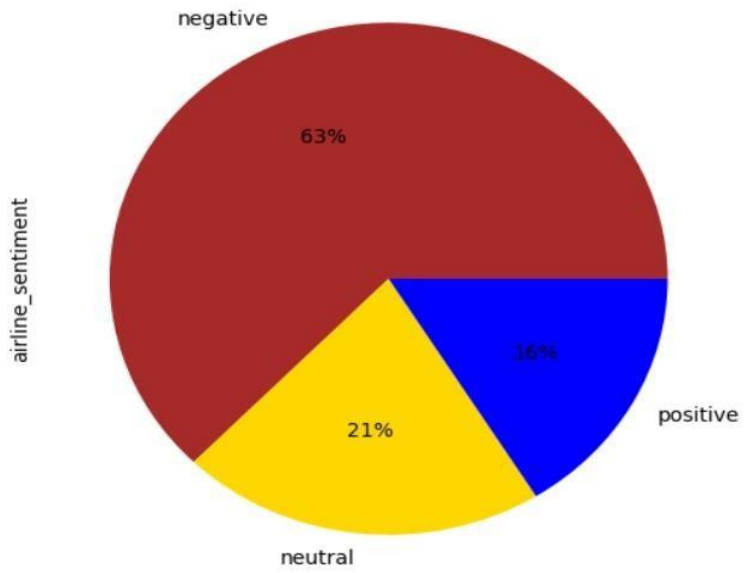
```
sns.barplot(x='airline_sentiment', y='airline_sentiment_confidence' , data=airline_tweets)
```

Output:

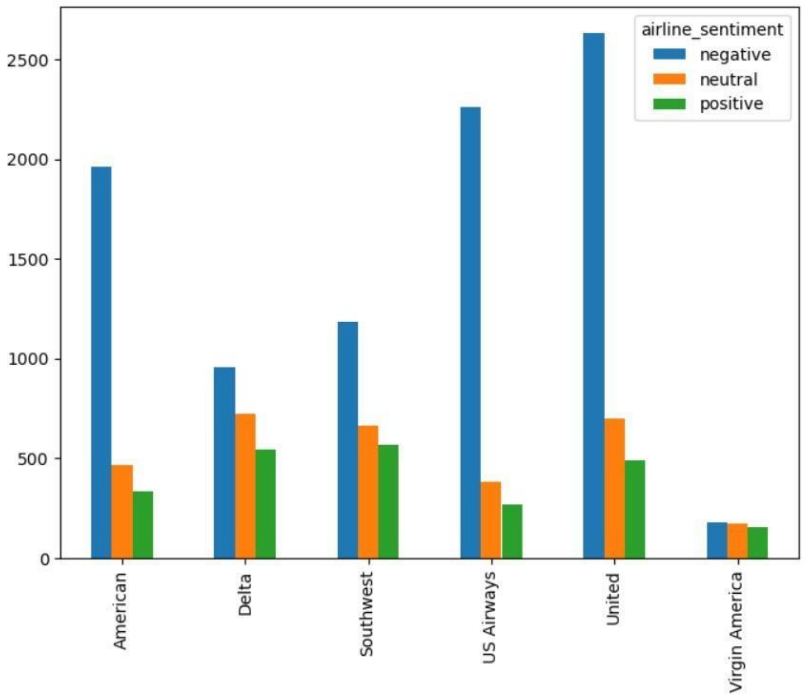
```
Out[9]: <Axes: ylabel='airline'>
```



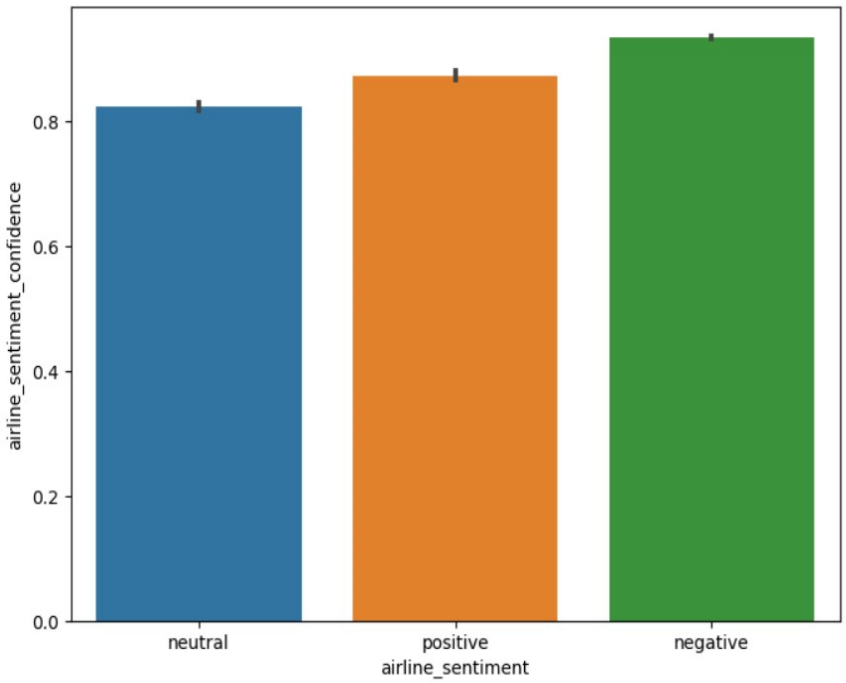

```
Out[11]: <Axes: ylabel='airline_sentiment'>
```



Out[14]: <Axes: xlabel='airline'>




Out[15]: <Axes: xlabel='airline_sentiment', ylabel='airline_sentiment_confidence'>




From the output, you can see that the confidence level for negative tweets is higher compared to positive and neutral tweets.