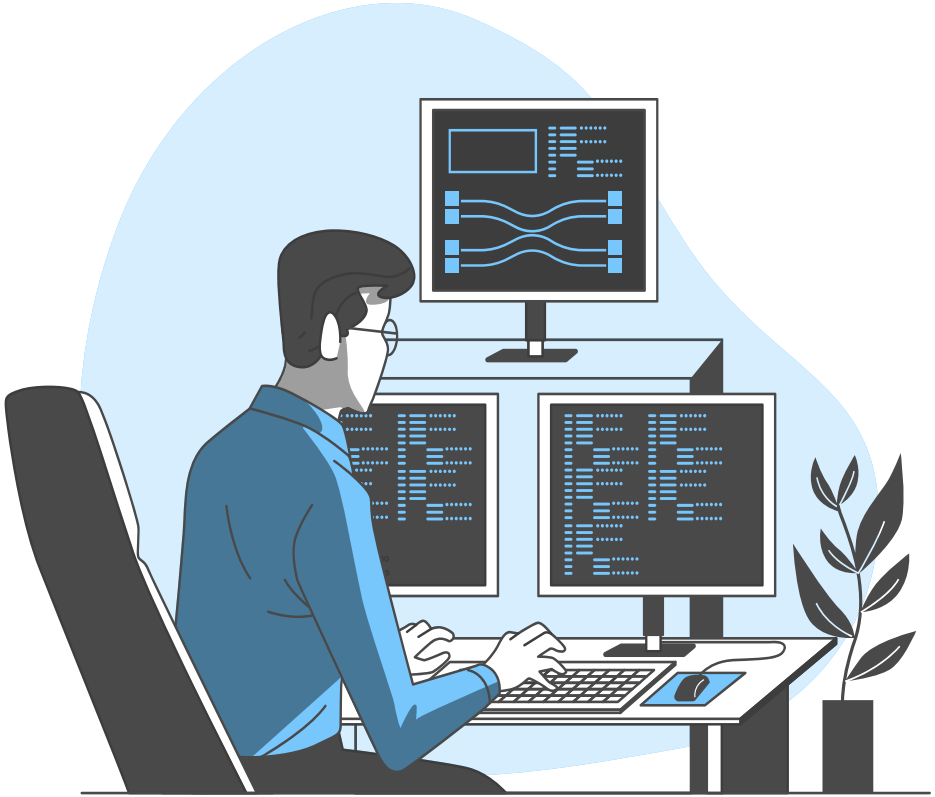

Tweet Talk

Twitter's Take on Apple vs. Google Products: Sentiment Analysis

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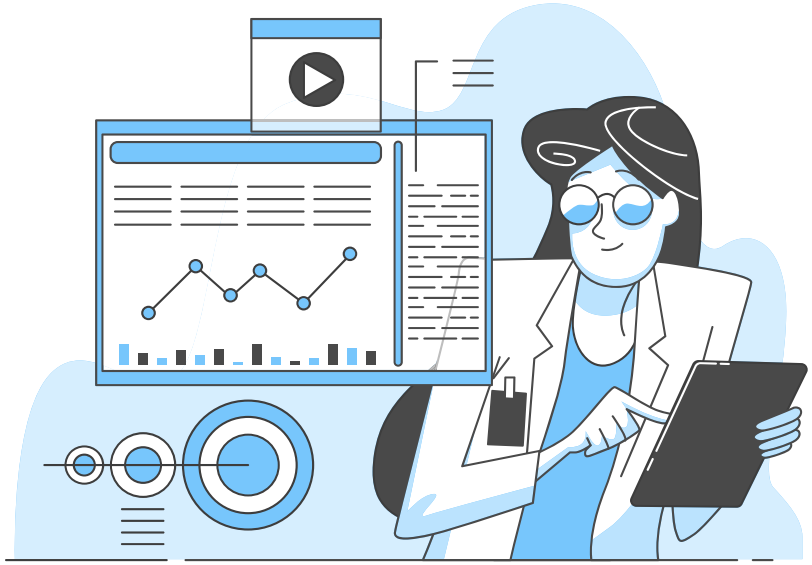


01
Business Understanding

Business Overview

- In today's technology-driven era, businesses understand the importance of comprehending customer perceptions and adapting to market changes. Social media platforms like Twitter provide a valuable tool for tracking and analyzing user sentiments regarding different products.

- By utilizing sentiment analysis, businesses gain insights to refine strategies and meet evolving customer expectations.

- This understanding allows them to make informed decisions and drive customer satisfaction in a competitive market.

Challenges

Brand Reputation

Apple & Google would be interested in maintaining and/or improving their Brand Reputation.

Product Development

Not understanding the customer preferences when it comes to the development of new products.

Competitive Analysis

Monitor the sentiments that are related to their competitors.

Proposed Solutions

Brand Reputation

- ➔ Quality Customer Service
- ➔ Proactive Online Monitoring

Product Development

- ➔ Prioritize customer feedback in the Research & Development process

Competitive Analysis

- ➔ Monitor competitor sentiments and identify market gaps to differentiate your offerings.

02

Project Overview

Problem Statement

- Social media sentiments are important for businesses to understand customer perceptions.
- This sentiment analysis project focuses on analyzing Twitter data.
- The goal is to extract insights about the sentiments related to Apple and Google products mentioned in tweets.

Problem Objectives

The **main** objective of this project is to create a model that when given a tweet or series of tweets and a product would determine how the user felt about that product.

1. Text Classifier – to accurately distinguish between positive, neutral, and negative sentiments, as well as point out why they are classified as such.

2. Competitive Analysis – Compare the sentiment towards Apple and Google products to identify any significant differences in public perception.

3. Give insights as to where the company can increase customer satisfaction.

Success Metrics

The model performance of this project will be analyzed using the following performance metrics:

- ❏ Accuracy
- ❏ Precision and Recall
- ❏ F1 Score

For the multi-class classification, the recall macro average was used to compare the models.

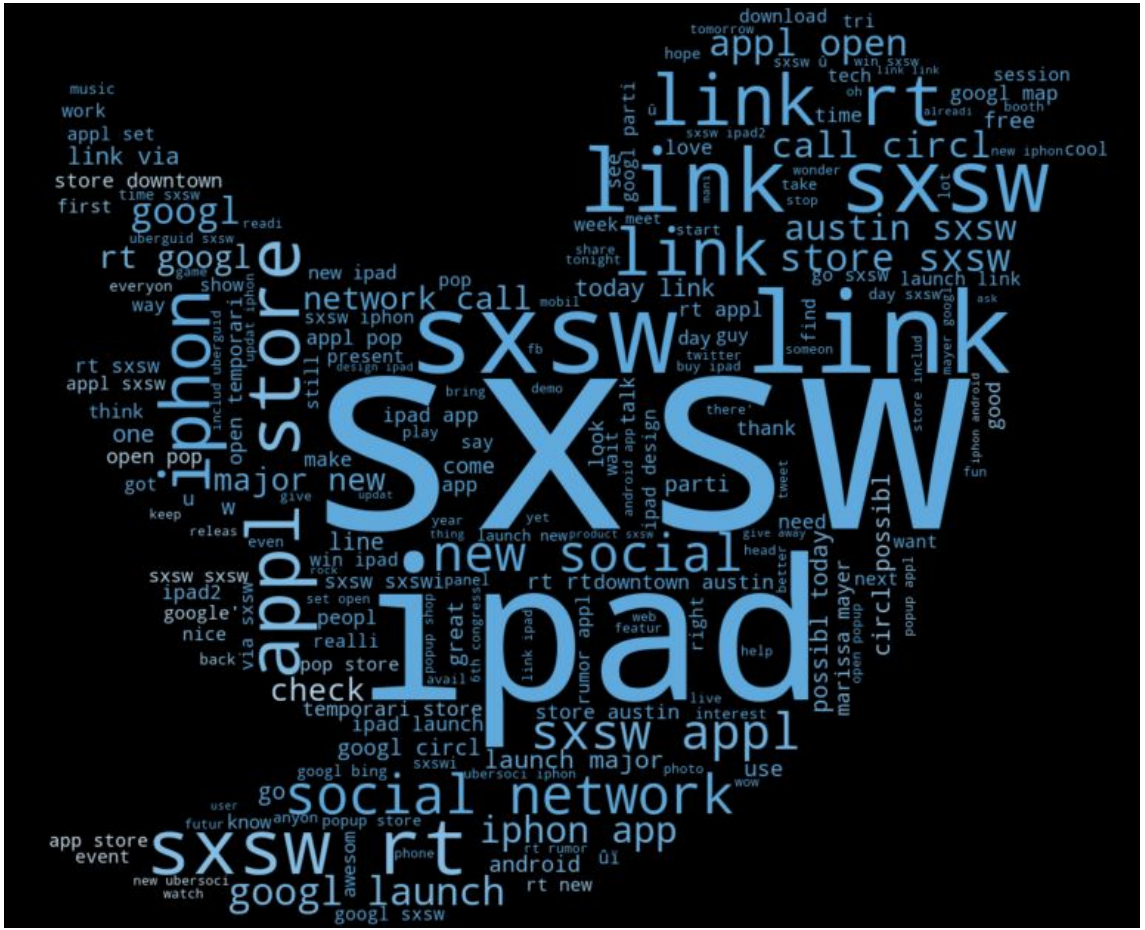
03

Data Understanding

Data Understanding

- The data was collected from DataWorld provided by CrowdFlower which has tweets about Apple and Google from the South by Southwest (SXSW) conference.
  There were 9093 rows and 3 Columns in the data.

	tweet_text	emotion_in_tweet_is_directed_at	is_there_an_emotion_directed_at_a_brand_or_product
0	.@wesley83 I have a 3G iPhone. After 3 hrs tweeting at #RISE_Austin, it was dead! I need to upgrade. Plugin stations at #SXSW.	iPhone	Negative emotion
1	@jessedee Know about @fludapp ? Awesome iPad/iPhone app that you'll likely appreciate for its design. Also, they're giving free Ts at #SXSW	iPad or iPhone App	Positive emotion
2	@swonderlin Can not wait for #iPad 2 also. They should sale them down at #SXSW.	iPad	Positive emotion
3	@sxsw I hope this year's festival isn't as crashy as this year's iPhone app. #sxsw	iPad or iPhone App	Negative emotion
4	@sxtxstate great stuff on Fri #SXSW: Marissa Mayer (Google), Tim O'Reilly (tech books/conferences) & Matt Mullenweg (Wordpress)	Google	Positive emotion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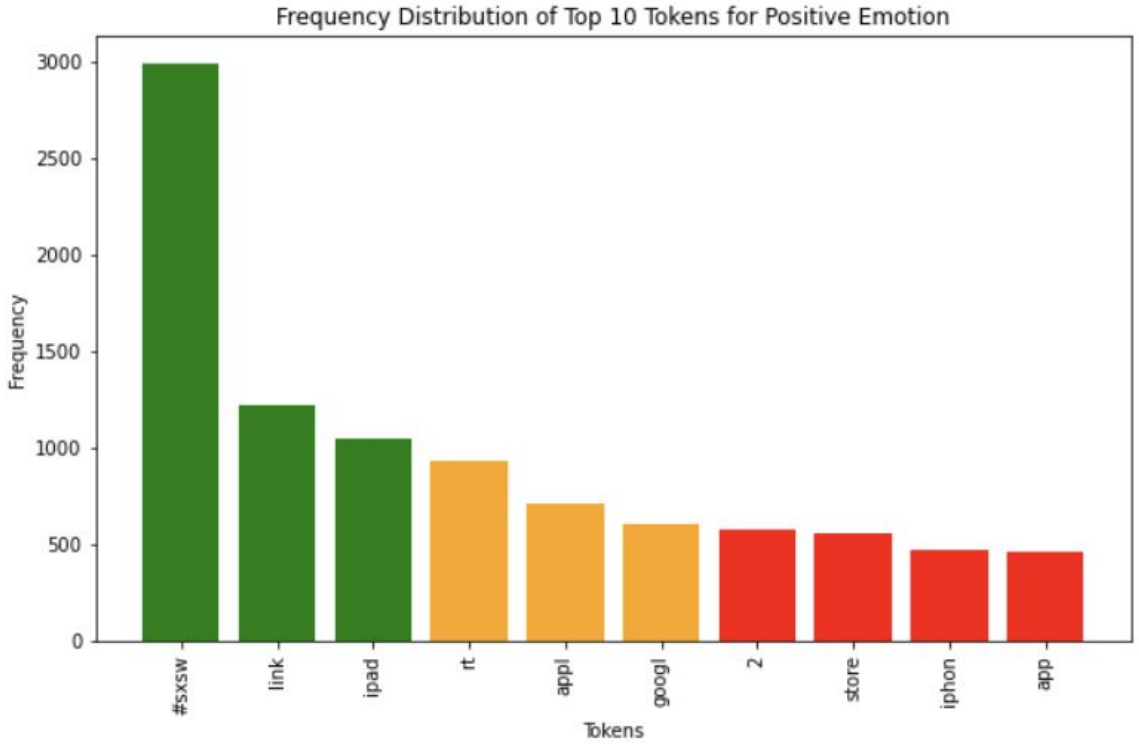
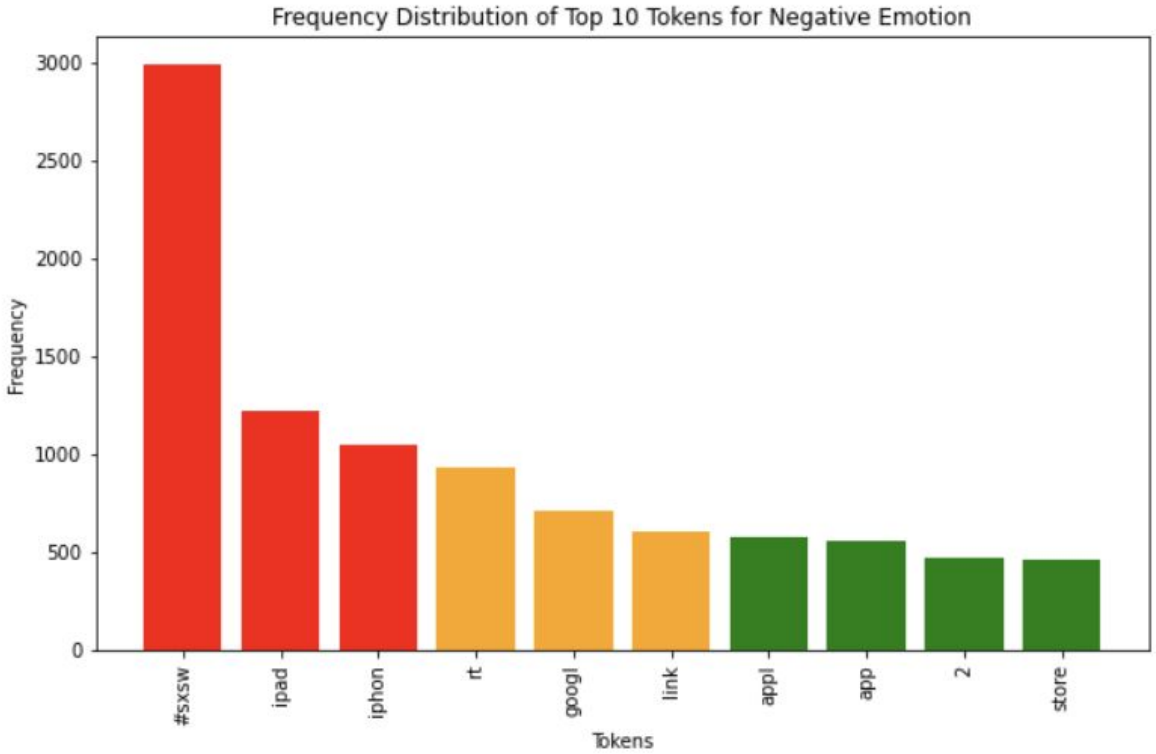
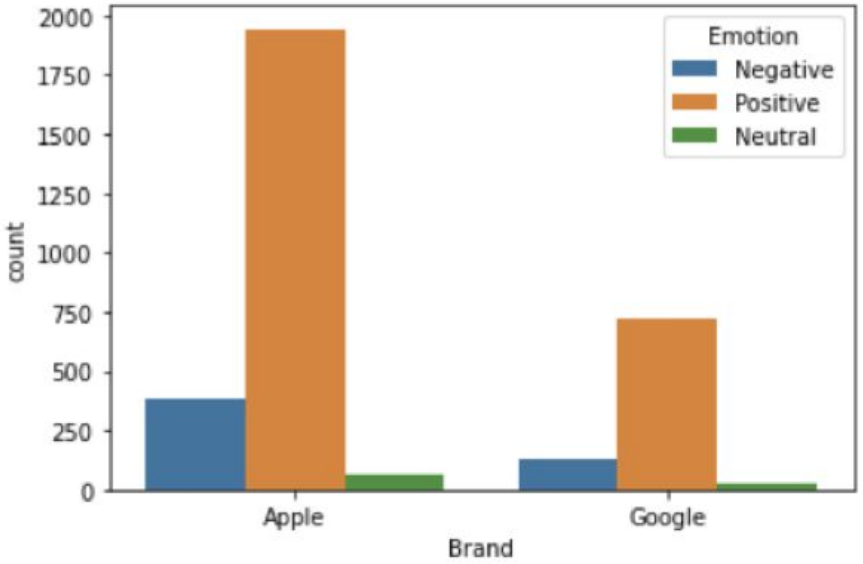


- Distribution of the top 10 words (tokens) used for positive emotion



- Distribution of the top 10 words (tokens) used for negative emotion

Data Understanding



- Since the data set compares sentiments by brand for products from Google and Apple comparison of sentiments by brand yielded the following results shown above.

04

Model Evaluation

Model Evaluation

- The best performing model in the multiclass classification was the **Tuned Oversampled Logistic Regression** model
- Accuracy score : 67%
  - Testing : 53%
  - Training : 54%

- The XGBoost model had a test dataset prediction score of 65% and 85% However, its accuracy score decreased from 0.51 before and after GridSearchCV tuning.

05

Recommendations & Conclusion

Word on the street

Apple

❌ The battery life on the iPhone received negative feedback

❌ The increase in size of the new iPad 2 was disapproved

✅ iPhone trumped Android in the tweet thread on user preferences.

Google

Android Operating System was a pain point for majority

Poor customer service was observed

Google Chrome was the preferred web browser for the majority.

Recommendations

01

Improve Customer Service

This would help improve brand reputation.

02

Monitoring Social Media

Develop a social media strategy so that sentiments can be monitored & can remain informed

03

Product Improvement

Based on the sentiments made, improve the quality of products/services, e.g iPhone battery life.

04

Competitor Analysis

Extend the analysis to competitors in the industry, so as to understand customer perceptions and opportunities for differentiation

Thanks!

Do you have any questions?

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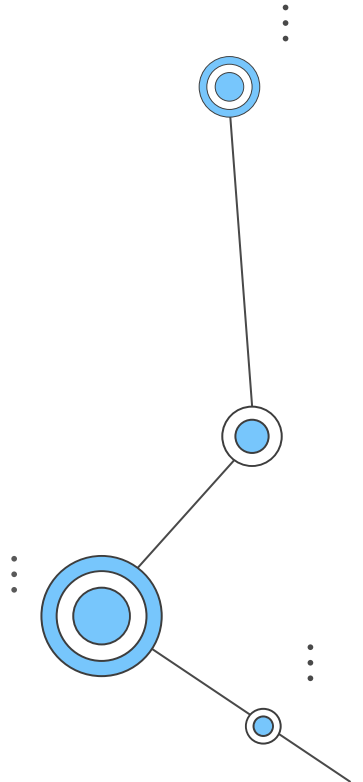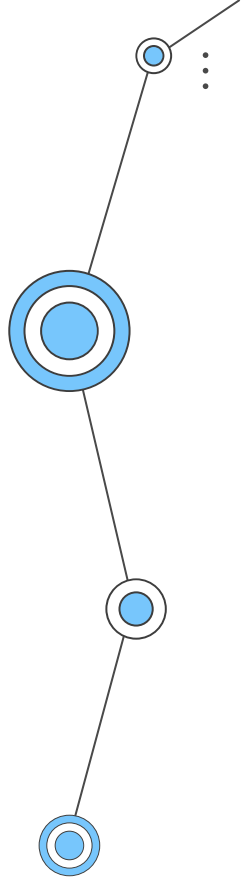
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