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# CLIMATE CHANGE

Twitter Sentiment Analysis



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# MEET THE TEAM

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## INTRODUCTION

- Problem Statement
- Data Description
- Data Science Process

## MODELING

- Imbalanced Data
- Model Training

## CONCLUSION

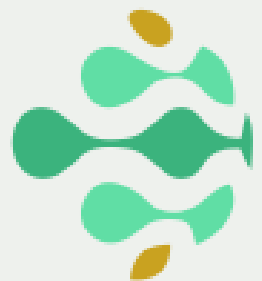
## EXPLORATORY DATA ANALYSIS

- Data Pre Processing
- Data Frequency Distribution

## DEPLOYMENT

- StremLit App

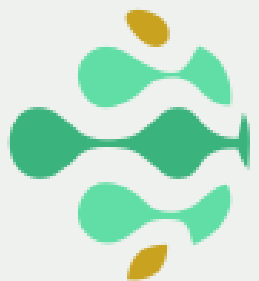
# INTRODUCTION



# PROBLEM STATEMENT

To know;

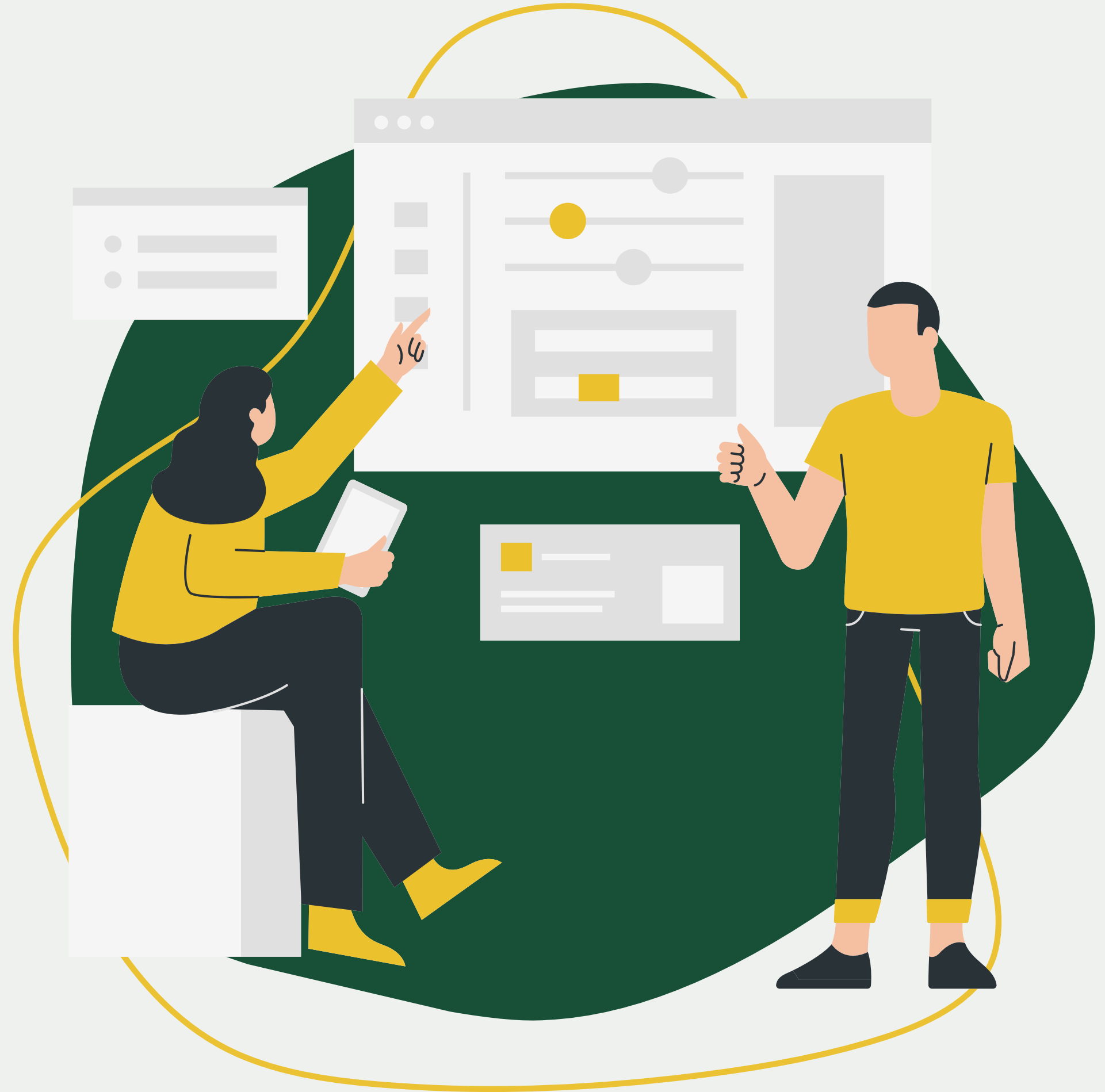
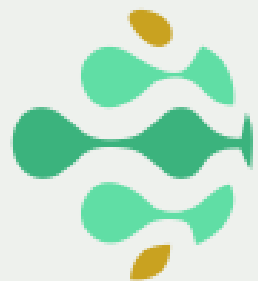
- how people perceive climate change.
- whether or not they believe it is a real threat.



# DATA DESCRIPTION

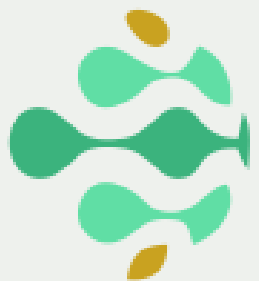
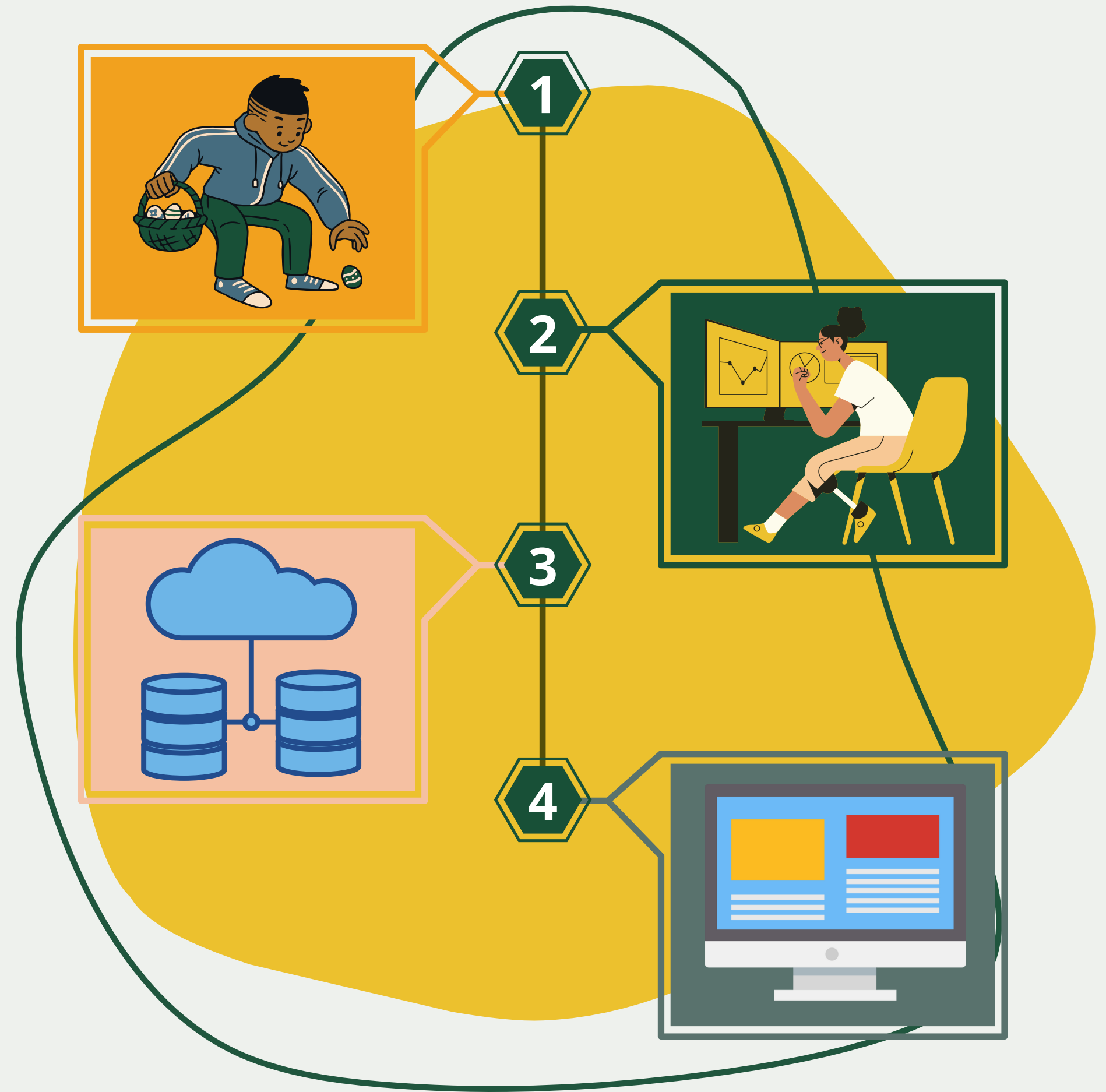
43943 tweets collected.

ID	CLASS
2	News
1	Pro
0	Neutral
-1	Anti

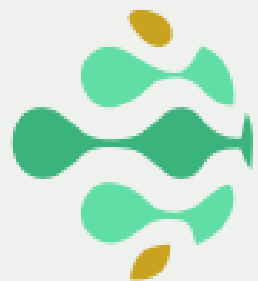


# DATA SCIENCE PROCESS

1. Data Collection
2. Exploratory Data Analysis
3. Modeling
4. Deployment



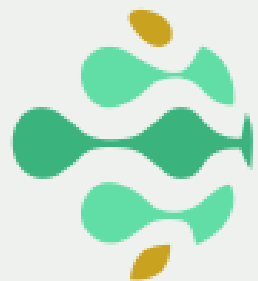
# EXPLORATORY DATA ANALYSIS





# DATA PRE PROCESSING

1. Mask Twitter handles
2. Replace URLs with word url.
3. Remove punctuations,  
numbers & special  
characters



# DATA PRE PROCESSING

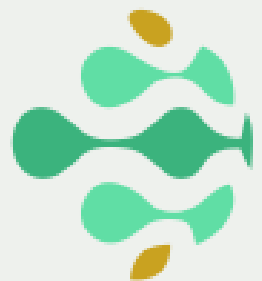
4. Remove stopwords.

5. Tokenize

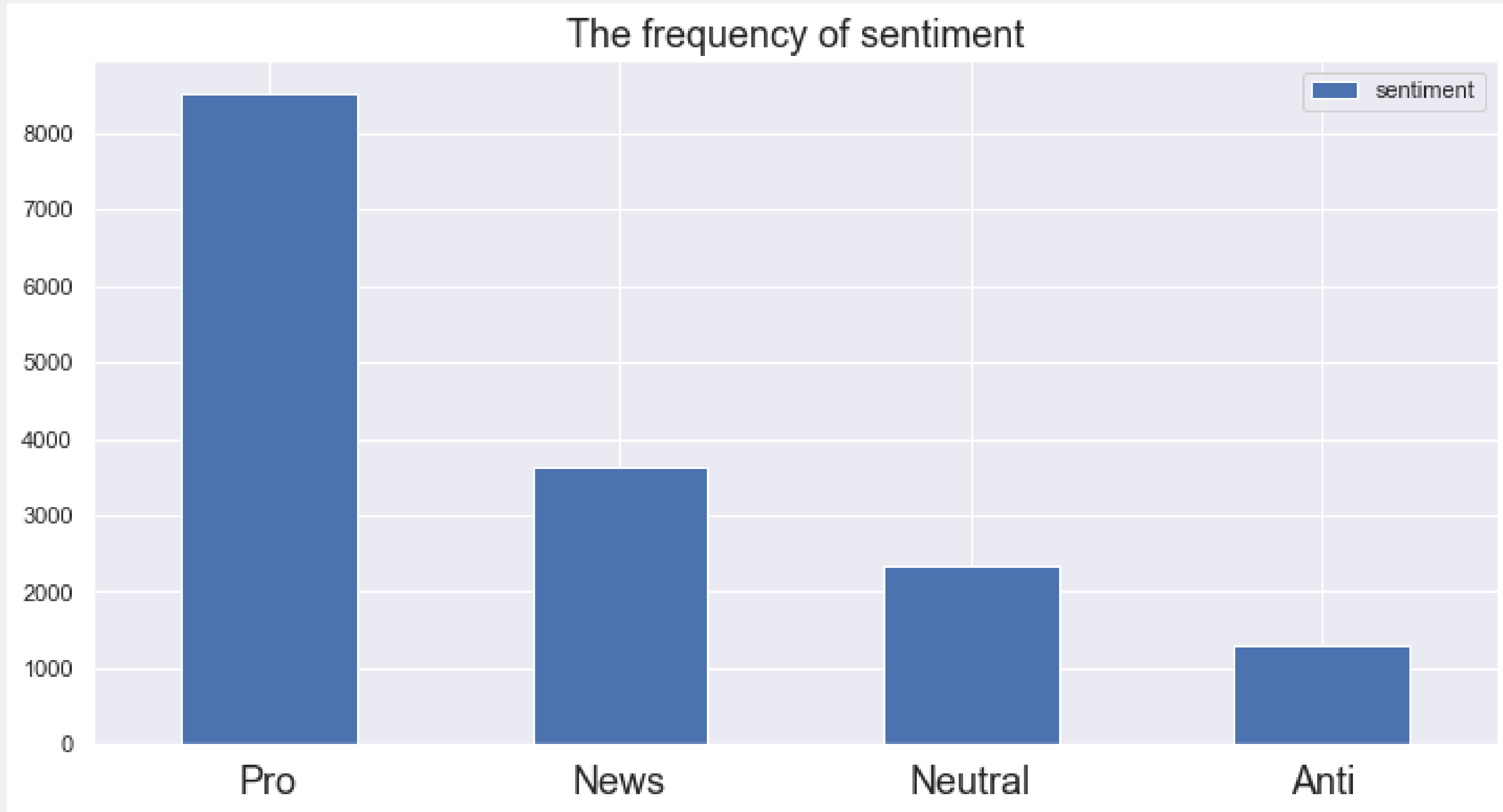
6. Lemmatization.

7. Convert all text to

lowercase



# DATA DISTRIBUTION

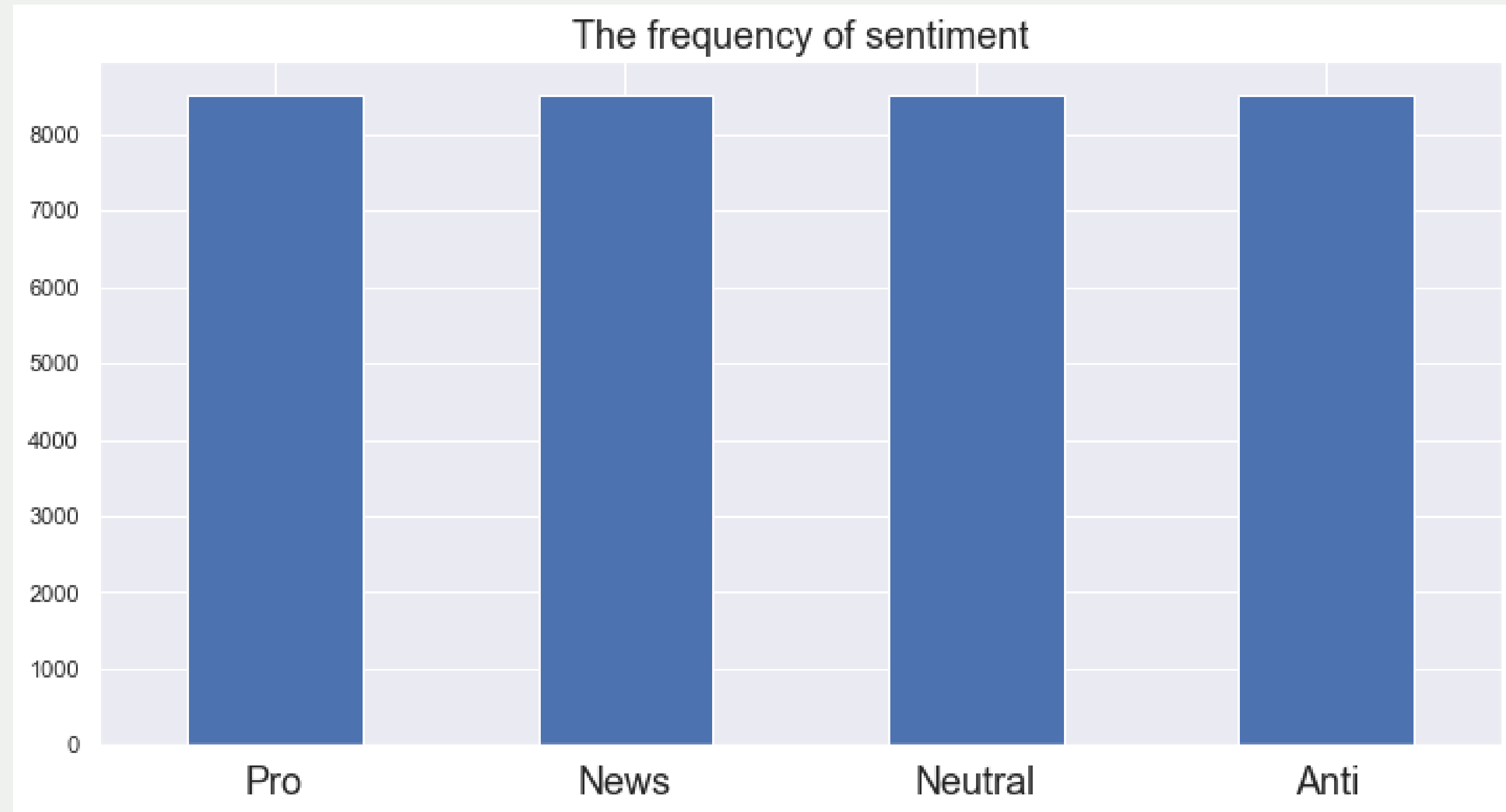


# IMBALANCED DATA



## Upsampling

Increase frequency of samples



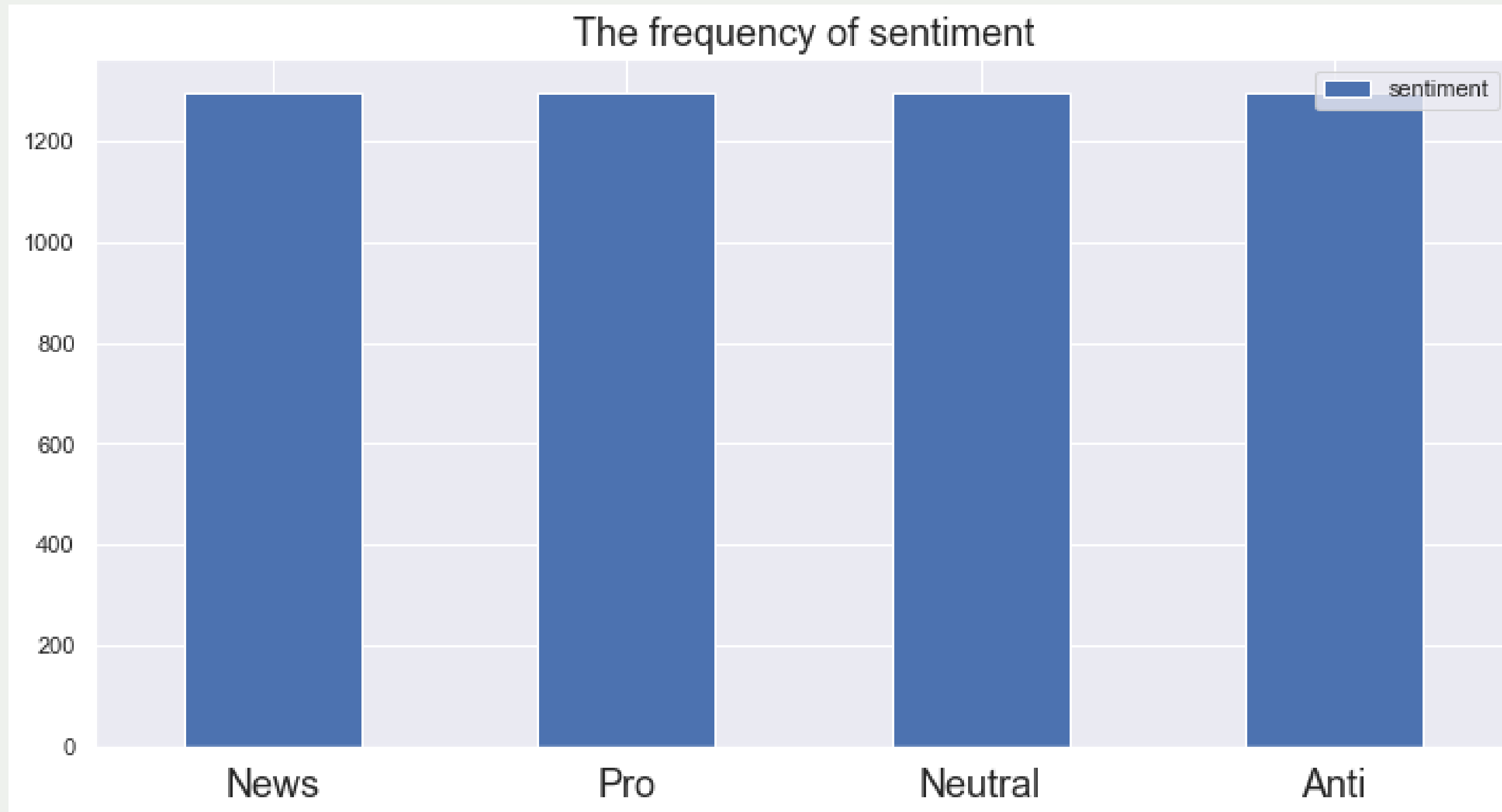


# IMBALANCED DATA



## Downsampling

Decrease frequency of samples

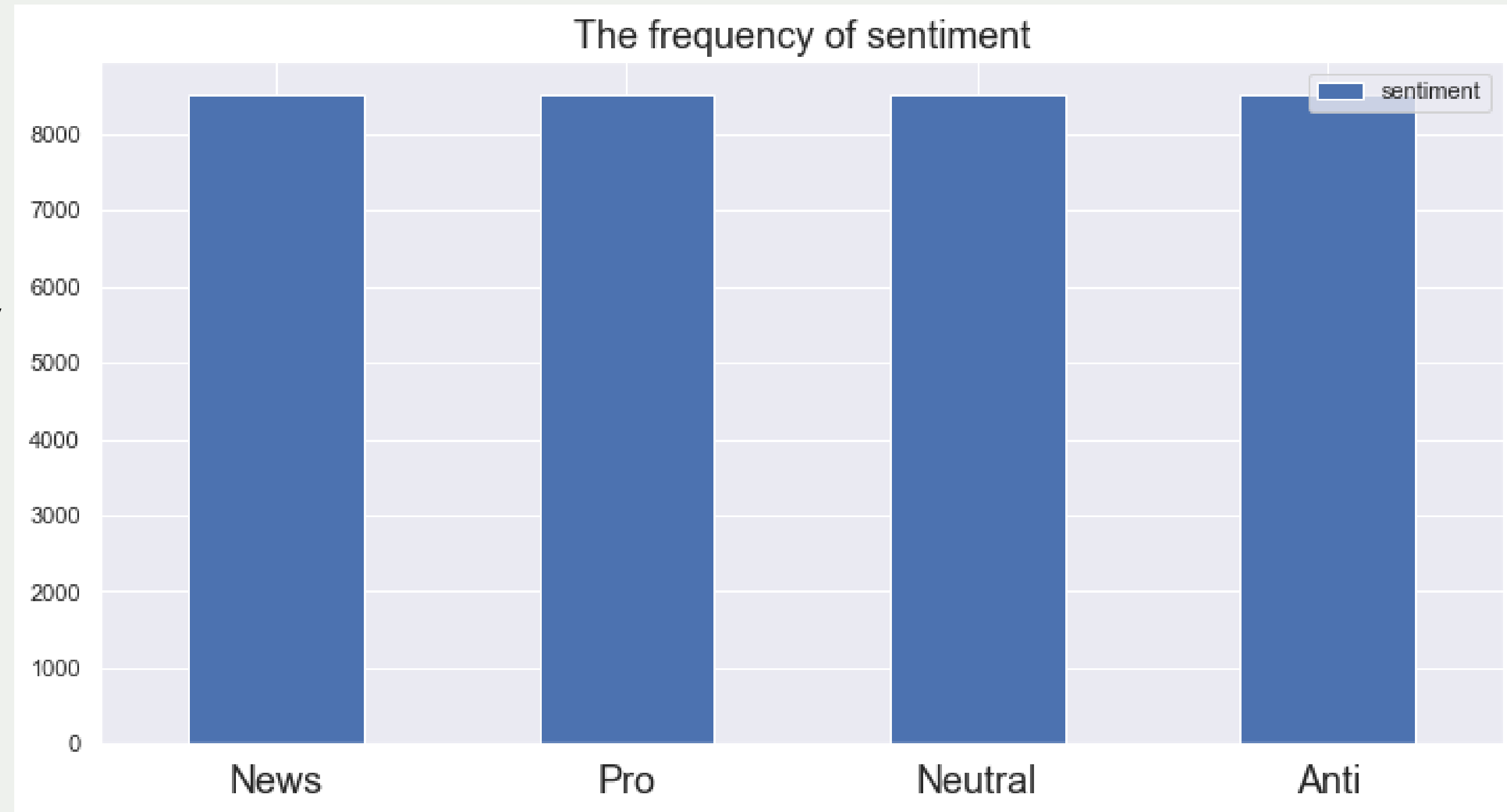


# IMBALANCED DATA

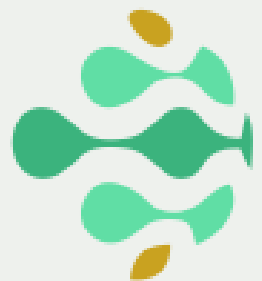


## SMOTE

Synthetic samples  
generated for minority  
class

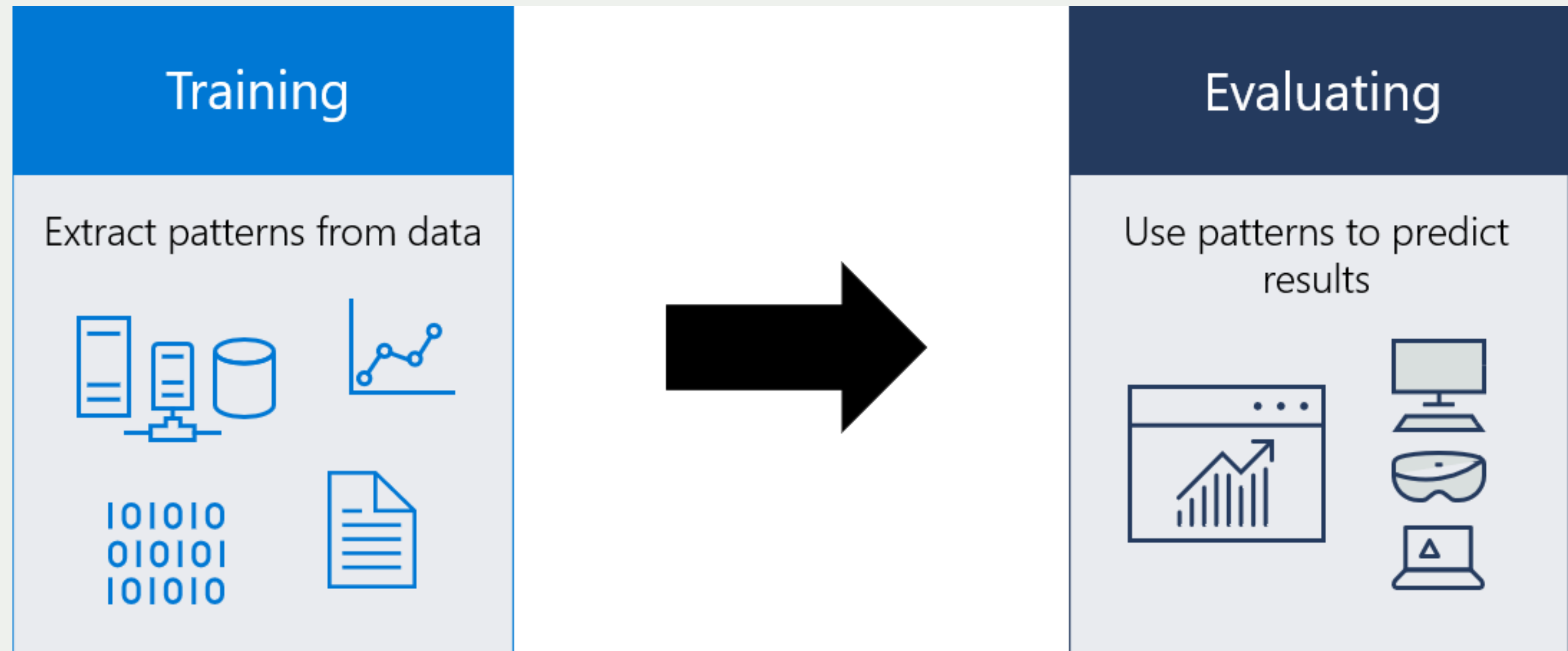


# MODELING



# WHAT IS **MODELING**

Combing through data to find patterns then make predictions.

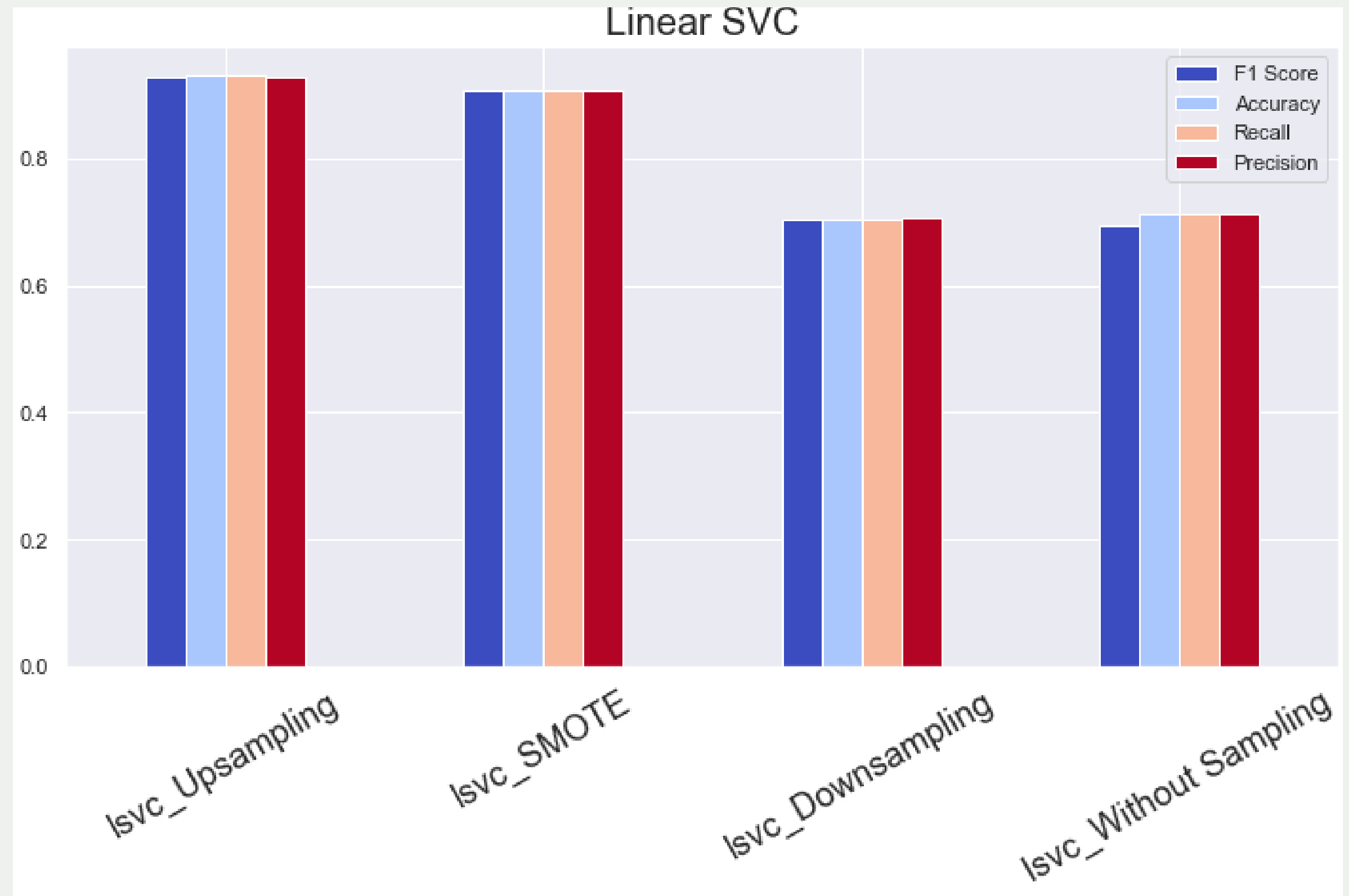






# MODEL TRAINING

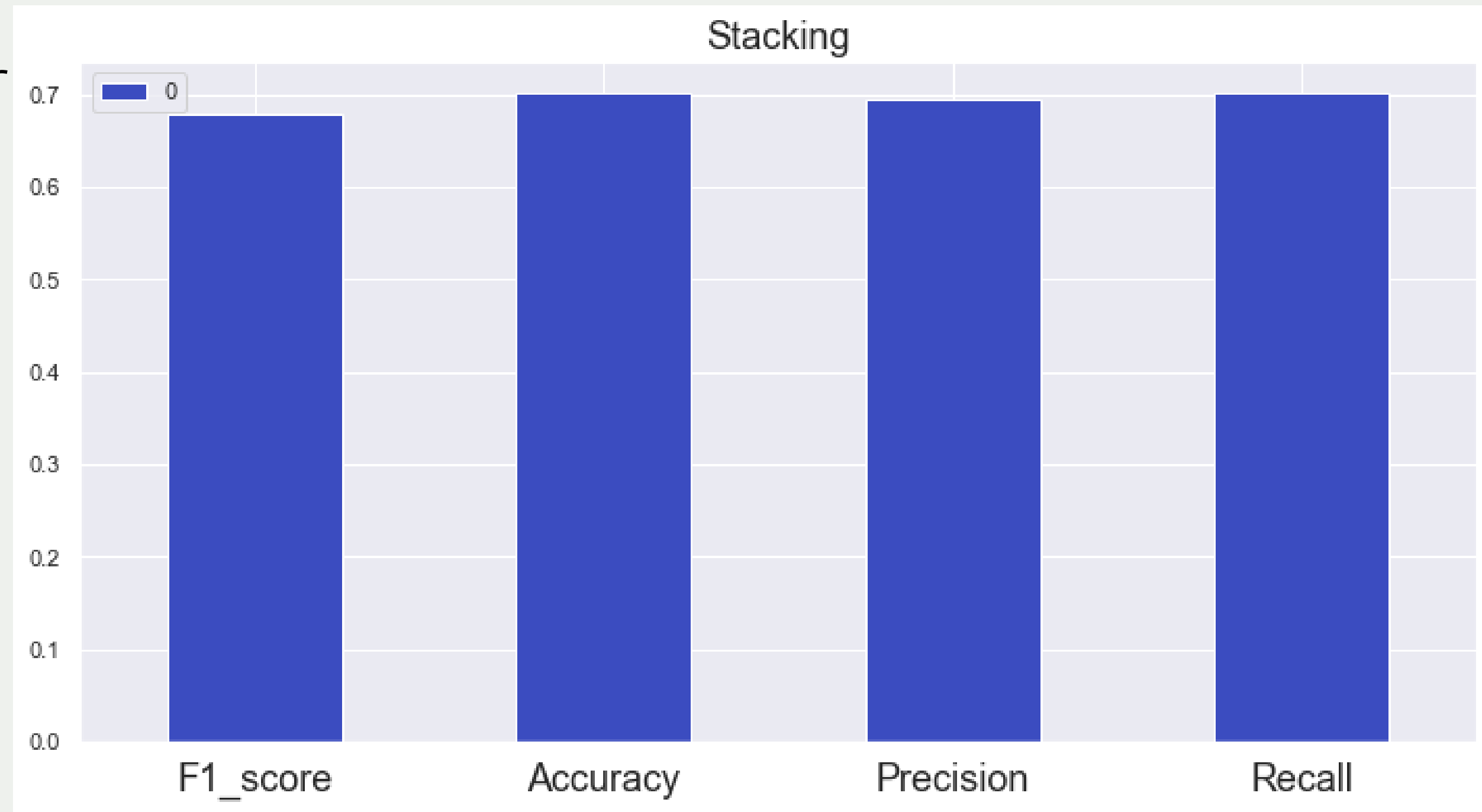
- Logistic Regression
- Support Vector Machine
- Naive Bayes
- Gradient Boosting



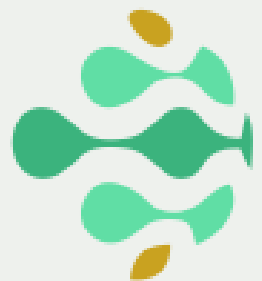


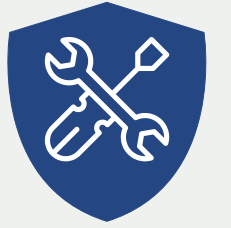
# MODEL IMPROVEMENT

- Hyperparameter Tuning
- Bagging
- Voting
- Stacking



# DEPLOYMENT



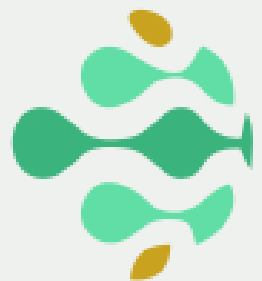


**LIVE**

**DEMONSTRATION**

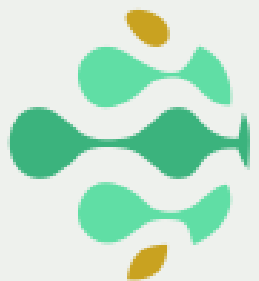


# CONCLUSION



# FINAL THOUGHTS

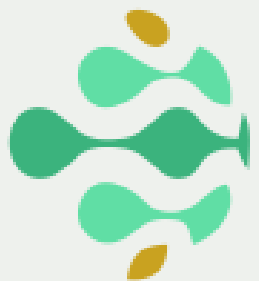
- High accuracy in prediction rate
- Saves time & Resources
- Flexible: Single or batch processing
- Highly customizable



# FINAL THOUGHTS

Our app can help your company:

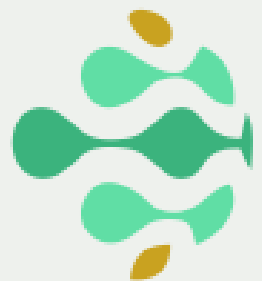
- improve your customer experience
- better understand your audience
- spot social media crises in the making



# FINAL THOUGHTS

Our app can help your company:

- measure performance of your PR campaign
- track your competitor's progress
- protect brand's reputation







**THANK YOU FOR LISTENING**

**We look forward to your comments and  
questions...**