

# Twitterapp

The UI screen would look as shown below.

Twitter Sentiment Analysis		
<div>fifa worldcup</div>		
tweets		prediction
0	RT @CAM_no10: Oooh ati Ronaldo left Qatar on his private jet,we will never see him again in fifa worldcup...\n\nHawa na wale waliweka queen o...	positive
1	RT @ArtemBazil1o: Hello everyone, my friends. Today I want to share with you my participation in the @QodaFinance Art Contest. Contest th...	Negative
2	Your Predictions for the #Fifa #WorldCup 2022 #Winner?\n\n#qatar #qatar2022 #football #morocco #argentina #croatia... https://t.co/TW6Vgc2u1A	positive
3	RT @bowlleddotio: The 2022 FIFA World Cup Semifinals are SET 🏆👉\n\nWho do you predict to be the last two standing? Let us know in the comment...	positive
4	The 2022 FIFA World Cup Semifinals are SET 🏆👉\n\nWho do you predict to be the last two standing? Let us know in the... https://t.co/H9IG1phK7P	positive
5	Oooh ati Ronaldo left Qatar on his private jet,we will never see him again in fifa worldcup...\n\nHawa na wale waliwe... https://t.co/w6QWqYH8i7	positive
6	@HisenseSA Win #Guess #Competition #Speaker #FIFA #HisenseSA #WorldCup\n\nArgentina 2 Croatia 1	positive
7	FIFA World Cup Qatar 2022: France will not underestimate Morocco threat in semi, says Varane. "We have enough exper... https://t.co/cYvS7Jq12J	positive
8	RT @gchahal: JUST IN: #BNNSaudiArabia Reports.\n\nSaudi Arabia's Crown Prince Mohammed bin Salman sent his wishes to the Moroccan team follow...	neutral
9	FIFA Worldcup 2022 Semi-Finals\n\n#messi #fifa #fifaworldcup #fifaworldcup2022 #solarenergy #croatia #argentina... https://t.co/rC7rPCndiF	Negative
10	RT @hesy_rock: Moroccoma Beats Belgiumse, Our Muslim Countries Dominating FIFA WorldCup 🏆👉👉❤️\n\n#FIFAWorldCupQatar2022 https://t.co/Kat94FMH1y	Negative
11	🏆 FIFA World Cup Qatar 2022 🏆\n\n👉 ARGENTINA VS CROATIA SEMI-FINAL : WHOM DO YOU SUPPORT ? 🏆\n\n#satsport... https://t.co/m1vPT9EITS	Negative

1. Created a model to predict the sentiment of the tweet.
2. Saved the model and used flask framework for UI prediction.
3. Whenever a user interacts with the UI, it retrieves tweets related to the search from the Twitter API and returns the sentiment of each tweet.

## Technology used:

1. Flask Framework
2. HTML
3. Python

## Overview:

This project focuses on real-time data collection from Twitter using the Twitter API and sentiment prediction using a model. Additionally, it explains the pre-processing needed for this process and how to build a user interface for interacting with the model.

## Twitter API:

I accessed the data from Twitter using Tweepy. If you have the necessary access levels, Twitter gives us with developer accounts that provide access to its data through its API services.

## Cleaning the data:

Data has been verified and changed to remove any undesirable characters from tweets that are not alphabets or other special characters.

**Lemmatization:**

Words with related meanings are connected using lemmatization. It combines various synonymous or inflected words into a single term by grouping them together.

**Bag of words and TF-IDF:**

When attempting to model text using machine learning algorithms, the bag-of-words model is a simple method that can be effective. Utilized TF-IDF as well because it has been shown to produce superior results to BOW.

**Modeling:****GaussianNB:**

Naive Bayes is a probabilistic version this is primarily based totally on Bayes theorem. This theorem presents a conditional opportunity of an occasion A, going on given some other occasion, B, has formerly happened. In this case, the predictor values are assumed to comply with a Gaussian distribution.

**Random Forest:**

A random forest is a meta-estimator that fits a set of decision tree classifiers to different subsamples of a dataset, using averaging to improve prediction accuracy and control overfitting.

**Flask Framework for UI Integrations:**

Flask is a Python micro-web framework used to create dynamic user interfaces. The model from the collaboration is imported into the Flask project structure and integrated with the following code. The home.py file contains code that calls the model with the tweet data collected by the get-related-tweets method. This method returns relevant tweets from Twitter in real time. box. This data is preprocessed before being sent to the model for prediction. A virtual environment called Twitter has been created with all the packages required to run the application installed. The Templates folder contains the HTML code that basically displays the user screen. The folder structure is as follows.

### Model Comparison:

