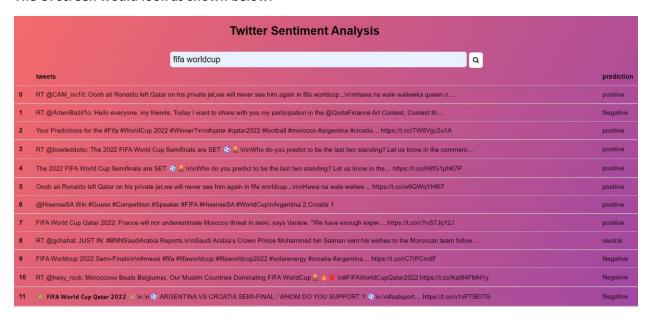
# **Twitterapp**

#### The UI screen would look as shown below.



- 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:**

