**Twitter Sentiment Analysis**

This project is a Python script that performs sentiment analysis on tweets related to a given topic or keyword. It uses the Twitter API and natural language processing techniques to analyze the sentiment of each tweet.

**Installation**

To run this project, you will need to have Python 3 installed on your machine. Additionally, you will need to install the following Python libraries:

- twitter

- tweepy

- chart\_studio

- plotly

- geopandas

- textblob

- searchtweets

- matplotlib

- re for regular expression operations

- stopwords from nltk.corpus to remove stop words

- sklearn for machine learning operations

- pandas for data manipulation

- CountVectorizer from sklearn.feature\_extraction.text to convert text into numerical feature vectors

- DecisionTreeClassifier from sklearn.tree for building the decision tree model

- accuracy\_score, precision\_score, recall\_score, and f1\_score from sklearn.metrics to evaluate the model's performance

- train\_test\_split from sklearn.model\_selection to split data into training and testing sets

```

pip install twitter tweepy chart\_studio plotly geopandas textblob searchtweets matplotlib

```

You will also need to download the following NLTK packages:

- wordnet

- punkt

- stopwords

- omw-1.4

You can download these packages by running the following commands in a Python shell:

```

import nltk

nltk.download("wordnet")

nltk.download('punkt')

nltk.download('stopwords')

nltk.download('omw-1.4')

``

**Usage**

1. Obtain API keys from Twitter by creating a Twitter developer account and creating a new app.

2. Replace the placeholders in the Python script with your own API keys.

3. Copy the dataset `layoffs\_dataset.csv` into the same directory from which you are running the code.

4. Execute the DecisionModel\_To\_Predict\_Tweets\_Based\_On\_Twitter\_Data.ipynb on Jupyter notebook or on Google Collaboratory.

**Dependencies**

The code generates visualizations using the following packages:

- numpy

- pandas

- matplotlib

- seaborn

- geopy

- plotly

**To install the required packages, run the following command:**

```

pip install numpy pandas matplotlib seaborn geopy plotly

```

**Files**

This project includes the following files:

`DecisionModel\_To\_Predict\_Tweets\_Based\_On\_Twitter\_Data.ipynb`: a Python notebook that performs sentiment analysis on tweets

`layoffs\_dataset.csv`: a sample dataset used in the script

`Recession\_Effect\_Based\_On\_Layoff\_fyi.ipynb`: code for generating visualizations using the above packages