

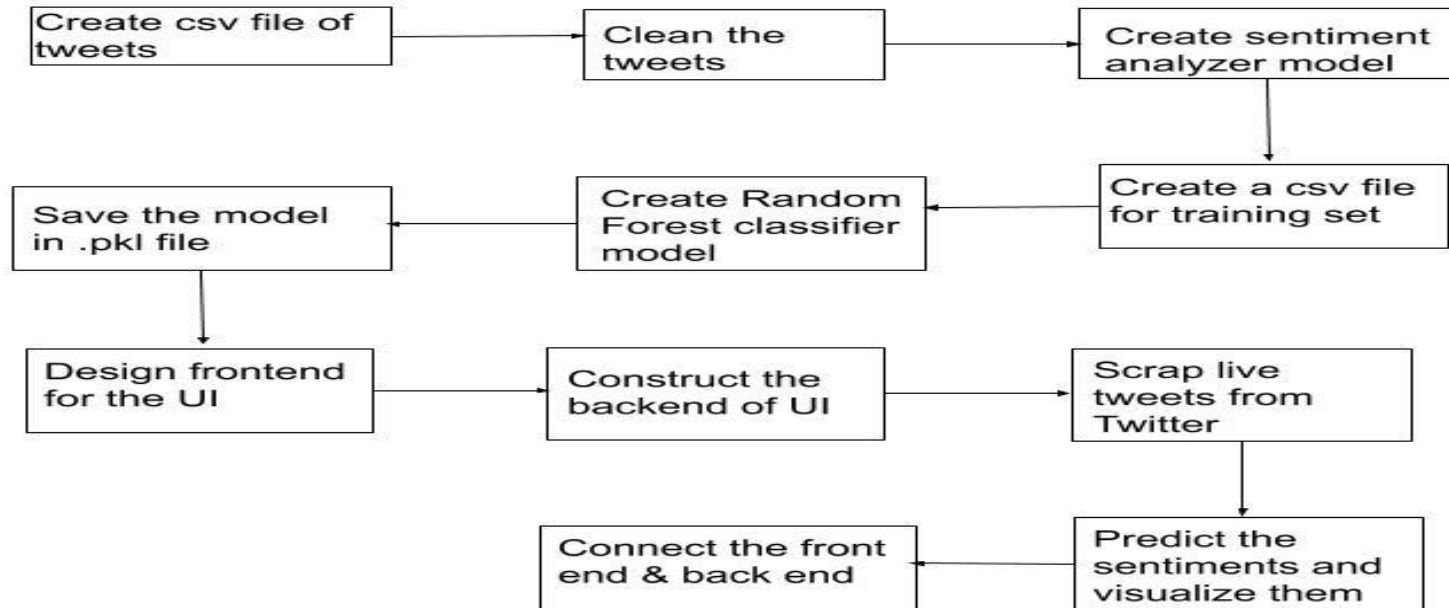


# SENTIMENT ANALYSIS OF COVID-19 TWEETS AND VISUALIZATION DASHBOARD



PROJECT BY TEAM ACES

# PROJECT FLOW DIAGRAM



# DATA EXTRACTION AND PREPROCESSING

- Extracted using Twitter API & Tweepy library, stored in a csv file using the csv writer and then converted into a dataframe
- Clipped tweets are removed and then remaining tweets made free from punctuation, URLs, stop words and then lemmatized using the **re**, **string** and **nltk** libraries

# CREATION OF SENTIMENT ANALYSIS MODEL AND TRAINING SET FOR CLASSIFIER

- The cleaned and lemmatized tweets considered for making the Sentiment Analysis model using the **nlTK Sentiment Intensity Analyzer**
- Based on the compound scores of the tweets, classified into positive, negative & neutral tweets.
- This complete data frame along with the analyzed sentiment converted into a csv file which acts as a training set for the classifier built in next step

# CREATION OF CLASSIFICATION MODEL AND .pkl FILE

- The cleaned tweets along with their sentiments loaded in a data frame
- The data then vectorized using the **sklearn TfidfVectorizer**
- A Random Forest classifier built using the **sklearn.ensemble.RandomForestClassifier**
- The model then trained on the vectorized data to predict the sentiments of tweets without using the sentiment analyzer model
- This model is saved in a .pkl file using the **pickle** library

# CREATING FRONT END PART OF THE UI

- Basic **HTML** is used to create the home page and result page of the User Interface
- **CSS** is then used to make the UI look more attractive
- Home page - Description, Search box to search tweets of any topic
- Result page - Pie chart of sentiments (Google Charts), few scrapped tweets with their sentiments

# CREATING BACK END PART OF THE UI

- Flask library of python is used to construct the back end of the User Interface
- Uses the classifier model saved as a .pkl file to predict the sentiments of the live tweets scrapped
- The scrapping of live tweets made possible by using Twitter API calls in the flask file as well
- Privilege to scrap tweets related to any topic & any number of topics

# CONNECTING THE BACK END AND FRONT END

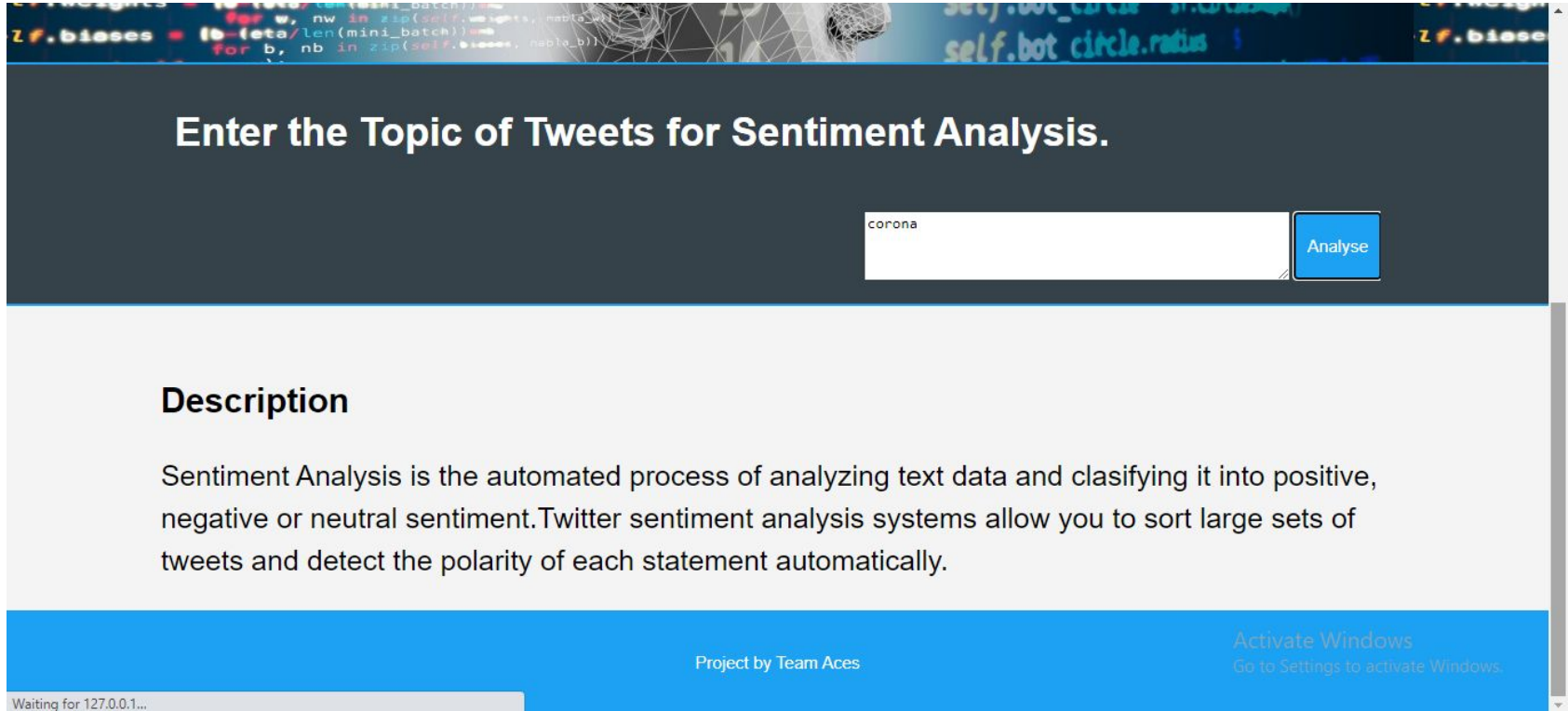
- The back end & front end part of the User Interface are integrated together using the `.route()` function



# HOME PAGE OF THE UI



# HOME PAGE (CONTD.)



The screenshot shows a web application interface. At the top, there is a decorative header with a dark background, overlaid with colorful, semi-transparent Python code snippets. Below the header, a dark grey rectangular box contains the text "Enter the Topic of Tweets for Sentiment Analysis." in white. Underneath this text is a white input field containing the word "corona". To the right of the input field is a blue button with the word "Analyse" in white. Below the dark grey box, the page has a light grey background. A section titled "Description" in bold black font is followed by a paragraph explaining sentiment analysis. At the bottom of the page, there is a blue footer bar. On the left side of the footer bar, it says "Project by Team Aces". On the right side, it says "Activate Windows" followed by "Go to Settings to activate Windows." in a smaller font. In the bottom left corner of the browser window, a status bar shows "Waiting for 127.0.0.1..."

```
self.weights = torch.nn.Parameter(torch.randn(1, 1, 1))\nfor w, nw in zip(self.weights, nable_w):\n    w.data = nw.data\nfor b, nb in zip(self.biases, nable_b):\n    b.data = nb.data\nself.bot_circle.radius = 1
```

## Enter the Topic of Tweets for Sentiment Analysis.

Analyse

### Description

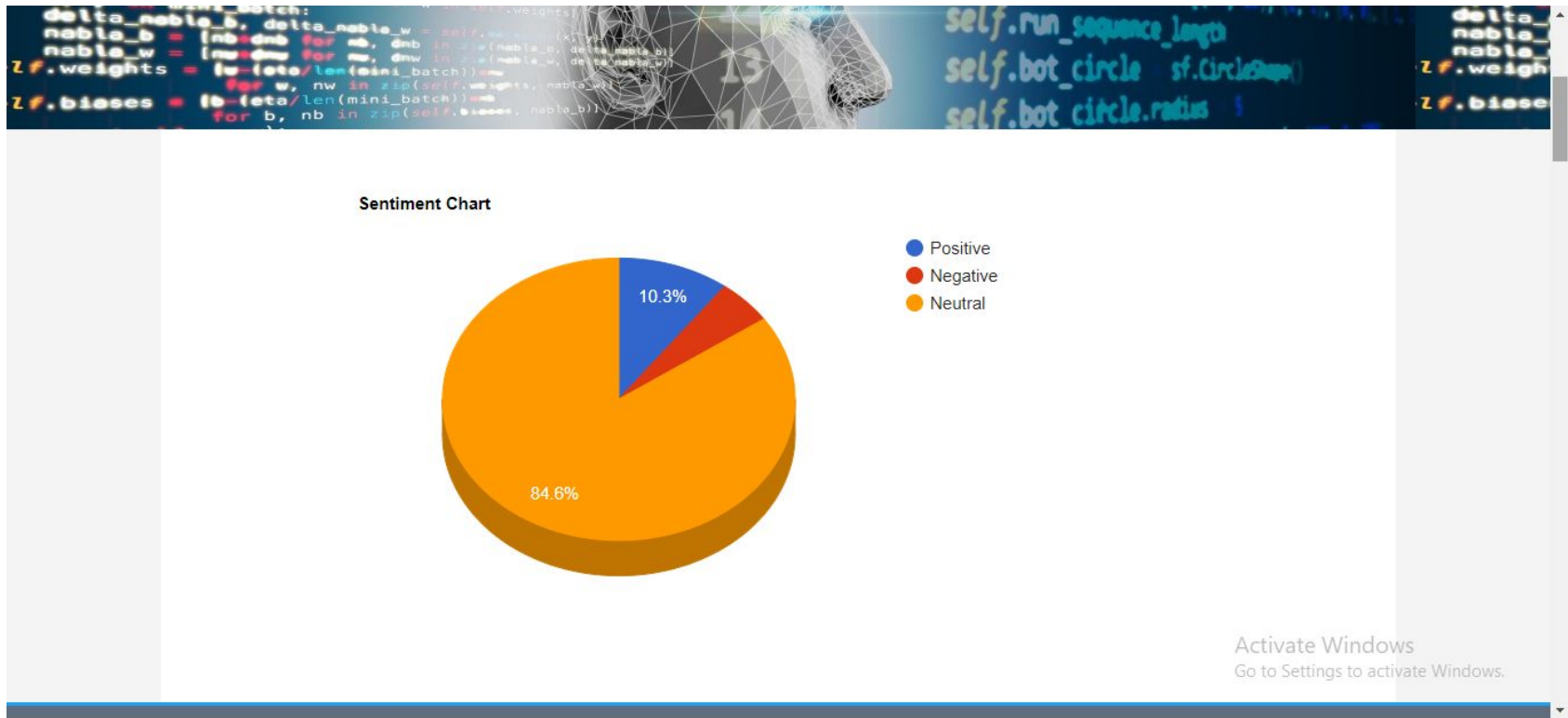
Sentiment Analysis is the automated process of analyzing text data and clasifying it into positive, negative or neutral sentiment.Twitter sentiment analysis systems allow you to sort large sets of tweets and detect the polarity of each statement automatically.

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Activate Windows  
Go to Settings to activate Windows.

Waiting for 127.0.0.1...

# RESULT PAGE OF THE UI



# RESULT PAGE (CONTD.)

## Sentiment of Tweets of the given topic

RT @isaiahj\_\_3: Niggas broke and blaming corona nah y'all been ain't have money 🤔💀 = **Neutral**

RT @love666sick: this caused corona i think = **Neutral**

RT @SasTheAss: wrap it up Corona = **Negative**

RT @arianna\_birch: If you had to sacrifice one jamaican to stop corona who would it be and why yuh seh footah hype? 😊 = **Neutral**

Where is the Media Now? Zodiac Kill map Nails it on corona virus months ago and proves attack was deliberate. We told the president months ago how accurate our map is and not one person listened NOW it is FACT 100% accurate! <https://t.co/zv8x1qaMCE> = **Negative**

RT @s3edv: with or without corona am staying away from y'all = **Neutral**

Activate Windows  
Go to Settings to activate Windows.

# FINAL DELIVERABLES

- Sentiment Analysis model (nltk Sentiment Intensity Analyzer)
- Sentiment Prediction model (sklearn Random Forest Classifier)
- UI to search tweets related to any topic & any number of topics & predict their sentiments with a pie chart as visualization



# THANK YOU

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