Use Python and the [Natural Language Processing Toolkit](http://www.nltk.org/) (NLTK) to generate sentiment scores for a text.

NLTK is a leading platform for building Python programs to work with human language data.

**Sentiment analysis** (also known as **opinion mining** or **emotion AI**) refers to the use of [natural language processing](https://en.wikipedia.org/wiki/Natural_language_processing), [text analysis](https://en.wikipedia.org/wiki/Text_analytics), [computational linguistics](https://en.wikipedia.org/wiki/Computational_linguistics), and [biometrics](https://en.wikipedia.org/wiki/Biometrics) to systematically identify, extract, quantify, and study affective states and subjective information. Sentiment analysis is widely applied to [voice of the customer](https://en.wikipedia.org/wiki/Voice_of_the_customer) materials such as reviews and survey responses, online and social media, and healthcare materials for applications that range from [marketing](https://en.wikipedia.org/wiki/Marketing) to [customer service](https://en.wikipedia.org/wiki/Customer_relationship_management) to clinical medicine.

What is Exploratory Data Analysis?

[Exploratory data analyses](https://en.wikipedia.org/wiki/Exploratory_data_analysis) are strategies that summarize or otherwise reveal features of interest within a dataset which are not likely visible through traditional [close reading](https://en.wikipedia.org/wiki/Close_reading). With the insights of exploratory data analysis at hand, researchers can make more informed decisions when selecting a method or approach for tackling their research question, and it may help to identify new research questions altogether.

*“Unless the detective finds the clues, judge or jury has nothing to consider. Unless exploratory data analysis uncovers indications, usually quantitative ones, there is likely to be nothing for confirmation data analysis to consider.” (Tukey 1977:3)*

[Natural Language Processing](https://en.wikipedia.org/wiki/Natural_language_processing) (NLP) covers a broad range of techniques that apply computational analytical methods to textual content, which provide means of categorizing and quantifying text. These NLP approaches, which include sentiment analysis, can help researchers explore their textual data. In the words of Tukey, it can help the researcher to find “clues” about their texts and “indications” that something might be worth investigating further.

Sentiment analysis seeks to quantify the emotional intensity of words and phrases within a text. Some sentiment analysis tools can also factor in the emotional weight of other features of language such as punctuation or [emojis](https://en.wikipedia.org/wiki/Emoji).

In our case, we will be using two NLTK tools in particular:

* The ‘[VADER Sentiment Analysis](http://www.nltk.org/_modules/nltk/sentiment/vader.html)’ tool (generates positive, negative, and neutral sentiment scores for a given input)
* The ‘word\_tokenize’ tokenizer tool (splits a large text into a sequence of smaller units, like sentences or words)
* [*VADER*](http://www.nltk.org/_modules/nltk/sentiment/vader.html) (Valence Aware Dictionary and sEntiment Reasoner) is a sentiment intensity tool added to NLTK in 2014. Unlike other techniques that require training on related text before use, *VADER* is ready to go for analysis without any special setup. *VADER* is unique in that it makes fine-tuned distinctions between varying degrees of positivity and negativity. For example, *VADER* scores “comfort” moderately positively and “euphoria” extremely positively. It also attempts to capture and score textual features common in informal online text such as capitalizations, exclamation points, and emoticons, as shown in the table below:

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**Warning**: Stock market prices are highly unpredictable and volatile. This means that there are no consistent patterns in the data that allow you to model stock prices over time near-perfectly.

let's look at candlestick charts also

known as a Japanese candlestick chart

this type of chart is used as a trading

tool to visualize and analyze the price

movements over time for securities

derivatives currency stocks bonds

commodities etc although the symbols

used in candlestick charts resemble a

box plot they function differently and

therefore are not to be confused with

one another candlestick charts display

multiple bits of price information such

as the open price close price highest

price and lowest price through the use

of candlestick like symbols which each

represents the compressed trading

activity for a single time period for

example a minute hour day month etc each

candlestick symbol is plotted along a

time scale on the x-axis to show trading

activity over time the main rectangle in

the symbol is known as the real body

which is used to display the range

between the open and closed price of

that time period while the lines

extending from the bottom on the top of

the real body is known as the lower and

upper shadows or wick each shadow

represents the highest or lowest priced

traded during a time period represented

when the market is bullish which means

the closing price is higher than it

opened then the body is colored

typically white or green but when the

market is bearish meaning the closing

price is lower than it opened then the

body is usually colored either black or

red candlestick charts are great for

detecting and predicting market trends

over time and are useful for

interpreting the day to day sin

it's off the market through each

candlestick symbol coloring and shape

for example the longer the body is the

more intensity selling or buying

pressure is while a very short body

would indicate that there is a very

little price movement in that time

period and this represents con solid

ation Candlestick charts help reveal the

market psychology the fear and greed

experienced by sellers and buyers

through various indicators such as shape

and color but also by the many

identifiable patterns that can be found

in candlestick charts in total there are

42 recognized patterns that are divided

into simple and complex patterns these

patterns found in candlestick charts are

useful for displaying price

relationships and can be used for

predicting the possible future movements

of the market you can find a list and

description of each pattern in the

description below please bear in mind

that candlestick charts don't express

the events taking place between the open

and closed price only the relationship

between the two prices so you can't tell

how volatile trading was within that

single time period two other financial

charts that are similar to Candlestick

charts are the Kagi chart any open high

low close chart to find out more

information on this chart such as tools

you can use to generate it follow the