Sentiment Analysis Tool
SAT

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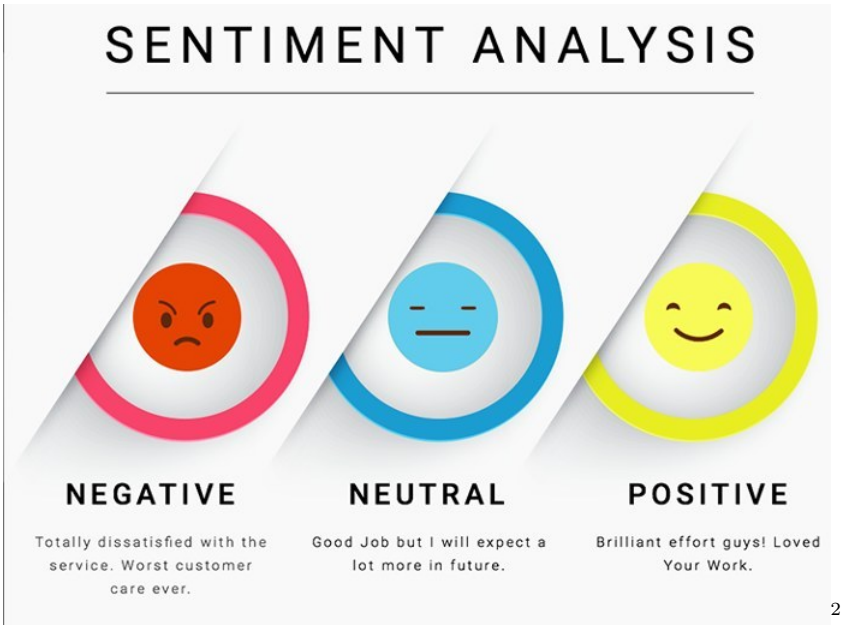
Contents

1 Introduction: What is sentiment analysis?

Sentiment analysis (also known as opinion mining) is a type of data mining that measures the inclination of people's opinions through natural language processing (NLP), computational linguistics and text analysis.

Sentiment analysis programs are used to extract and analyze subjective information from the Web - mostly social media and similar sources. The analyzed data quantifies the general public's sentiments or reactions toward certain products, people or ideas and reveal the contextual polarity of the information.[1]



[2]

[1] https://www.techopedia.com/definition/29695/sentiment-analysis
[2] https://www.kdnuggets.com/2018/03/5-things-sentiment-analysis-classification.html

2 Description

Sentiment Analysis Tool (SAT) is a program used for sentiment analysis. SAT measures statistically sentiment of the content of an input file

Features:

- The analysis of overall sentiment of the text
- Providing the number of positive and negative words in the text, including stopwords
- Providing the number of positive and negative words in the text without stopwords
- Ratio of the positive/negative sentences to the whole text
- The frequency of appearance of positive and negative words
- The statistical analysis of occurrence of the sentiment words
- Sentiment analysis on the basis of sentences containing a keyword
- Viewing the data both as text and graphs

2.1 Replacing the sample texts

SAT uses just 2 sample texts. These texts can be changed. To do so:

1. Get the .txt version of a file you want to analyze.
2. Put file.txt to the same catalog as SAT.
3. Replace "text 1.txt" with your file's name "file.txt".

```
tekst = int(input("\nSelect the text number (1 or 2): \n1. The Death Penalty: A
if tekst == 1:
    test_1 = open('text_1.txt','r')
    test_1_cont = test_1.read()
    test_1.close()
    nazwa_tekstu = "The Death Penalty: An Opinion Essay"
```

3 Setup

For Windows and Mac Users:

Before you begin make sure to have installed PyCharm or another Python code reading program on your device.

For Linux Users:

Open the terminal and input Python 3.

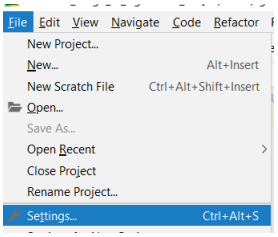
To enter the program:

1. Go to the GitHub page: `https://github.com/AgggR/hello_world`.
2. Find the SAT.zip file.
3. Click on the green button to download the file.
4. Unpack files in a place of your choice, preferably to a catalog.
5. Open the Python file.
6. Run the file.

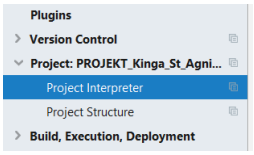
To run SAT you need to import the following packages:

- re (regular expressions)
- matplotlib.pyplot (for charts).

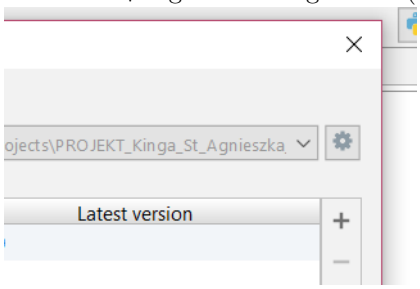
To import these packages go to **Settings**.



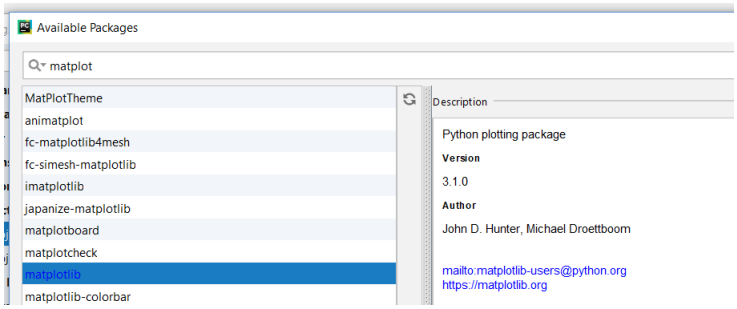
Select **Project Interpreter**.



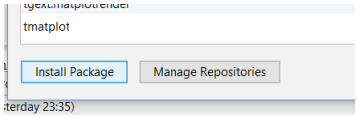
Click the + sign on the right side (edge) of the window.



There will appear another window with a search engine at the top. Write either the whole name or the most of it to find what you're looking for quicker.



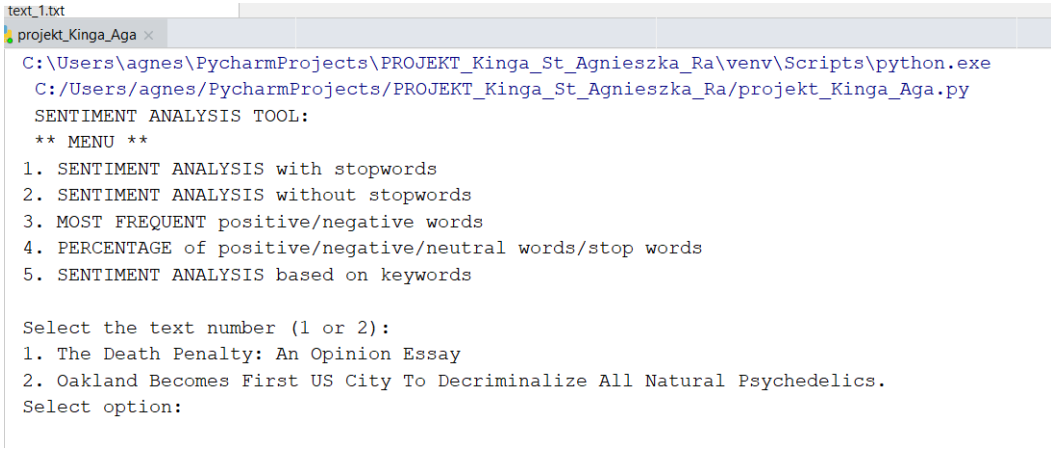
Then find in the left bottom corner **Install Package** button and click it.



Wait for the installation to finish. Close the windows **Available Packages** and **Settings**.

4 User Guide

4.1 Interface



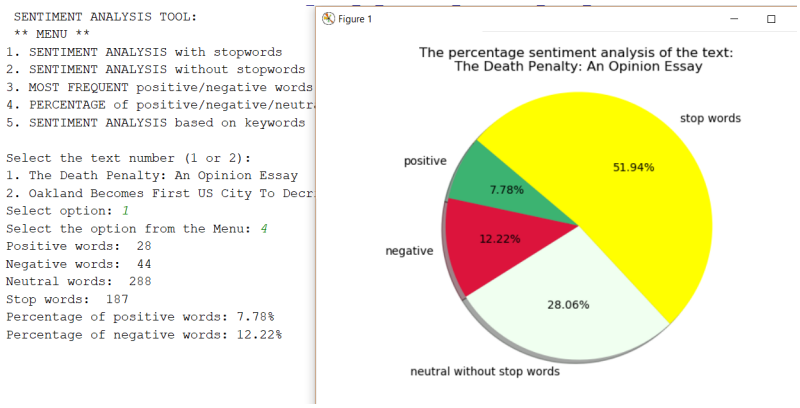
1. First, input 1 or 2 numeral to select a file to be analyzed. Press ENTER key.
2. Select the option from the MENU. Use numerals from 1 to 5. Press ENTER key.
3. To select other options, run SAT again. Then, input 1 or 2. Finally, select option from the MENU and insert its number into program. Press ENTER key.

4.2 Decisions:

- If MENU 1. is selected, sentiment analysis (stop words included) will print the sentiment and show the pie chart.

```
Select the text number (1 or 2):
1. The Death Penalty: An Opinion Essay
2. Oakland Becomes First US City To Decriminalize All Natural Psychedelics.
Select option: 2
Select the option from the Menu: 1
Positive words:  29
Negative words:  9
The text is overall positive.
```

- If MENU 2. is selected, sentiment analysis (stop words excluded) will print the sentiment and show the pie chart.
- If MENU 3. is selected, most frequent words are chosen.
- If MENU 4. is selected SAT will show PERCENTAGE of positive/negative/neutral words/stop words and a pie chart



- If MENU 5. is selected, SAT will print a list of key words. Then SAT will ask for input of one key word. As a result, SAT will print and count the sentences that contain the key word. Then, SAT will print the number of positive and negative words from those sentences ans the sentiment verdict. Finally, SAT will show a pie chart containing the percentage of negative and positive words from the chosen sentences.

4.3 Altering Files

If you find the existing files not extensive enough or outdated you can edit them by

a. adding elements to the lists of positive/negative/stop words

b. removing elements from the lists of positive/negative/stop words.

4.3.1 Adding Elements to the Lists

To add a word to the existing list open the file you want to change. Then, insert one word in one line. If you want to add several words, do so in separate lines. Save the changes. Close the file.

4.3.2 Removing Elements from the Lists

To remove a word from the existing list open the file you want to change. Then, select one word from a line. If you want to delete several words, do so by selecting and deleting separate lines. Save the changes. Close the file.