Social Network Analysis Mini Project

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Aim: Sentiment Analysis in python
Solution: SENTIMENT ANALYSIS

Sentiment analysis (also known as opinion mining or emotion AI) is the use of natural language processing, text analysis, computational linguistics, and biometrics to systematically identify, extract, quantify, and study affective states and subjective information.

Sentiment analysis is a technique that detects the underlying sentiment in a piece of text.It is the process of classifying text as either *positive, negative,* or *neutral.* Machine learning techniques are used to evaluate a piece of text and determine the sentiment behind it.

- **PYTHON:**

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Its language constructs and object oriented approach aim to help programmers write clear, logical code for small- and large-scale projects.

- **NLTK:**

The Natural Language Toolkit, or more commonly NLTK, is a suite of libraries and programs for symbolic and statistical natural language processing (NLP) for English written in the Python programming language. It was developed by Steven Bird and Edward Loper in the Department of Computer and Information Science at the University of Pennsylvania.

- **TEXT CORPUS:**

Text corpora (singular: text corpus) are large and structured sets of texts, which have been systematically collected. Text corpora are used by corpus linguists and within other branches of linguistics for statistical analysis, hypothesis testing, finding patterns of language

use, investigating language change and variation, and teaching language proficiency.

- **VADER:**

VADER Sentiment Analysis. VADER (Valence Aware Dictionary and Entiment Reasoner) is a lexicon and rule-based sentiment analysis tool that is specifically attuned to sentiments expressed in social media, and works well on texts from other domains.

- **COLORAMA:**

Simple cross-platform coloured terminal text in Python.

- Importing nltk to get resources to get the resources you'll need, use nltk.download()

```
In [1]: import nltk
        nltk.download()

        showing info https://raw.githubusercontent.com/nltk/nltk_data/gh-pages/index.xml

Out[1]: True
```

- Importing some required libraries

```
In [2]: import nltk
        from nltk.corpus import stopwords, twitter_samples
        from nltk.sentiment import SentimentIntensityAnalyzer
        from statistics import mean
        from random import shuffle
        from colorama import Fore
```

- Load and test the VADER sentiment analyzer

```
In [3]: sia = SentimentIntensityAnalyzer()
        sia.polarity_scores("Wow, NLTK is really powerful.")

Out[3]: {'neg': 0.0, 'neu': 0.303, 'pos': 0.697, 'compound': 0.7841}
```

- Perform sentiment analysis on any 10 tweets

Why is sentiment analysis useful?

Sentiment analysis is essential for businesses to gauge customer response.

Picture this: Your company has just released a new product that is being advertised on a number of different channels.

In order to gauge customer's response to this product, sentiment analysis can be performed.

Customers usually talk about products on social media and customer feedback forums. This data can be collected and analyzed to gauge overall customer response.

Taking this a step further, trends in the data can also be examined. For example, customers of a certain age group and demographic may respond more favourably to a certain product than others.

Based on the information collected, companies can then position the product differently or change their target audience.