Sentiment Analysis

What is Sentiment Analysis

- Sentiments are feelings, opinions, emotions, likes/dislikes, good/bad.
- Sentiment Analysis is a study of human behaviour in which we extract user opinion and emotion from plain text.
- Sentiment analysis is the automated process of determining whether a text expresses a positive, negative, or neutral opinion about a product or topic.
- Sentiment Analysis is also known as Opinion mining.
- It identifies the opinion or attitude that a person has towards a topic or an object.

User’s Opinion:

X: It’s a great movie(Positive statement)

Y: Nah!!! I did not like it at all(Negative statement)

Z: This is a sentence about nothing.

Polarity:

- Positive
- Negative
- Neutral

How Does Sentiment Analysis Work?

Sentiment analysis uses Natural Language Processing (NLP) methods and algorithms, including:

- **Rules-Based Systems:** using a set of manually crafted rules.
- **Automatic systems**: rely on machine learning techniques to learn from data.
- **Hybrid systems**: combine both rule-based and automatic approaches

Rules-Based Sentiment Analysis Systems:

- To identify polarity, this method defines a set of rules using Natural Language Processing (NLP) techniques (like tokenization, stemming, and parsing) alongside manually crafted rules.
- First, define two lists of opposing words (e.g. negative words such as bad, worst, ugly, etc and positive words such as good, best, beautiful, etc). Once a rule-based system has been fed these predefined lists, it will count the number of positive and negative words that appear in a text, returning a positive sentiment if there are more positive than negative words, and vice versa.

- However, this method doesn’t take into account word sequences within texts, such as, ‘ ain’t that great’. While ‘ain’t that great’ expresses negativity, rule-based systems will detect the word ‘great’ and add it to the list of positives.
- Now, being a rule-based system, you can implement new rules to take into account new vocabulary and expressions, but systems can become quite complex and hard to maintain with so many rules. As a result, these systems require large investments to fine tune and maintain.

+1 x +1 = +1 very good = 😊

-1 x -1 = +1 not bad = 😊

-1 x +1 = -1 not good = 😟

Logic

```
if(p_count > 0 and n_count ==0):
    print("Positive : "+ sentence)
elif(n_count%2 > 0):
    print("Negative :" + sentence)
elif(n_count%2 ==0 and n_count > 0):
    print("Positive :" + sentence)
else:
    print("Neutral :" + sentence)
```

We will have a positive sentiment

If we have an odd no. of -ve's ,we have -ve sentiment

Even no. of -ve which will yield a +ve sentiment

Neutral

What Is Sentiment Analysis Used For?

- Political Analysis
- Customer Service Analysis
- Customer Feedback Analysis

Thank you!