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DETERMINING SENTIMENTS:

- 'Sentiment analysis' is the process of classifying whether a block of text is positive, negative, or, neutral.
- Sentiment analysis is the contextual mining of words. It indicates the social sentiment of a brand. It also helps the business to determine whether the product, that they are going to launch, will make the demand in the market or not.
- Sentiment analysis tries to analyse people's opinion to help business expand. It concentrates not only positive, negative and neutral, but also on emotions, like happy, sad, angry etc. It uses various 'natural language processing' algorithms like Rule-based, Automatic and Hybrid.
- We can use sentiment analysis to monitor product's reviews like whether the product is satisfying customer requirements etc.
- When there is a large set of unstructured data, and we want to classify that data by tagging it, sentiment analysis monitors it will.

Performing Sentiment Analysis:
Around 80% of the world's data is unstructured. The data needs to be analyzed and be brought to structure manner. If may be in the form of emails, texts, documents, articles and so on.

- Sentiment analysis stores data in an efficient, cost-friendly manner.
- Sentiment analysis solves real-time issues and can help you to solve all the real-time problems.

Types of Sentiment Analysis
Fine-grained sentiment analysis: This category can be designed as very positive, positive, neutral, negative, very negative. The rating is done on the scale 1 to 5. If the rating is five, then it is very positive, 2 then negative and 3 then neutral.

Emotions detection: Under emotion detection comes the sentiment like happy, sad, anger, upset, jolly, pleasant, and so on. It is also known as a lexicon method of sentiment analysis.

Aspect based sentiment analysis: Here, it focuses on a particular or a special aspect. For example, if a person wants to check the feature of tablet then he checks the aspect such as battery, screen, camera quality etc.

Multilingual sentimental analysis: Multilingual, as the name suggests, consists of different languages. Here the classification is done as positive, negative and neutral. This is a challenging and comparatively difficult task.

Working of Sentimental Analysis:
There are three approaches used:

Rule-based approach:

- In this approach, it counts the number of positive and negative words in the given dataset.
- If the number of positive words is greater than the negative words, then the sentiment is positive else otherwise.
- Here the lexicon method, tokenization, parsing come and the rule-based.

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Automatic Approach :

- This approach is based on machine-learning technique.
- Firstly, the datasets are trained and predictive analysis is done. Then extraction of words from the text is done. This text extraction is done using techniques such as Naïve Bayes, Linear Regression, Support Vector, Deep Learning etc.

Hybrid Approach.

- This approach is a combination of both the above approaches That is rule-based and automatic approach.
- The main point here is the surplus is that accuracy is high compared to the other two approaches.

Applications

Sentiment analysis has a wide range of applications, such as :

Social media: If the comments on social media side as Instagram, here all the reviews are analyzed and categorized as positive, negative, and neutral.

Customer Service: All the comments in the form of 1 to 5 are done with the help of sentiment analysis approaches.

Marketing sector: In the marketing are where a particular product needs to be reviewed as good or bad.

Reviewer side: All the reviewers note the comments and check and give the overall review of the product.

Challenges of Semantic Analysis:

Major challenges in sentiment analysis approach are:

- If the data is in the form of a 'tone', then it is difficult to note whether the comment is 'optimistic' or 'pessimistic'
- If the data is in the form of 'emoji' then one has to detect whether it is good or bad.
- Sometimes ironic, sarcastic, comparing comments are difficult to understand.
- Comparing a neutral statement is a big task.