

# NLP – NO LOVE FOR PRODUCTS

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## ABSTRACT

It is a tool used to analyse thousands of product reviews on e-commerce sites like Amazon, Flipkart, etc., and classify the reviews into two categories, namely POSITIVE and NEGATIVE. This tool aims to reduce the customers' time in viewing and reading each and every review about the product. It uses NLP, or known as Natural Language Processing, and Sentiment Analysis, as the underlying technology. This tool will help in speeding up the decision making process for the customer, also making it an enjoyable and quick shopping experience.

**Keyword:** - Natural Language Processing, Sentiment Analysis, Machine Learning.

## 1. INTRODUCTON

Due to the rapid growth of electronic commerce, online reviews have replaced the traditional “word-of-mouth” and have been playing a vital role in influencing the consumer's buying patterns and sales of a product. Reviews act as a trust-building platform for the consumers where by judging the previous buyers' experience they are able to make informed decisions. From the manufacturer's point of view, helpful online reviews are crucial to mine customer requirements for improving a product or designing a new product. By capturing relevant online reviews, manufacturers can adhere to the customer requirements in the target market. Manufacturers also get an insight to the competitive market and ongoing trends influencing their marketing decisions as well. Retail websites like Amazon.com offer different options to the reviewers for writing their reviews. For instance, the user can provide rating in the form of numerical stars (usually ranging from 1 to 5 stars) or open-ended customer authored comments about the product.

The presence of online reviews on a website is believed to increase the user credibility, attract consumer visits, augmented hit ratio and time spent on the site. The discovery platforms like Zomato and Trivago are booming just on the basis of user reviews provided on restaurants and hotels. Reliable customer reviews build a trust factor among the novice users and help to enlarge the customer base. Both positive and negative reviews help the consumers and the manufacturers. Manufacturers can take negative feedback constructively and can know about the areas that they need to work upon to improve their product or service.

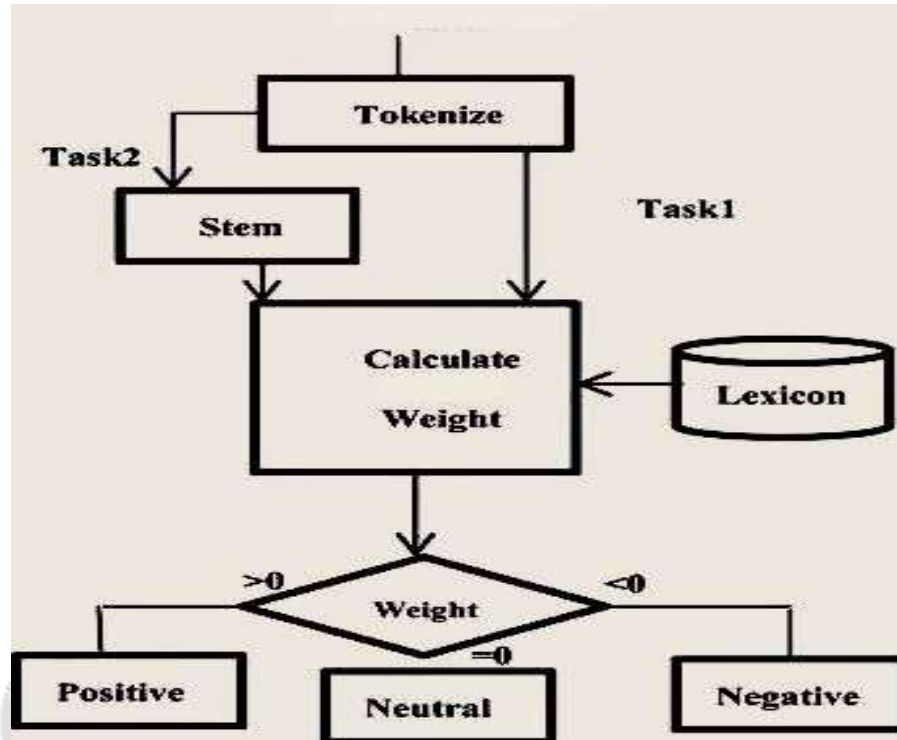


Fig -1: System Architecture

## 2. EXISTING AND PROPOSED SYSTEM

### 2.1 Existing System and its disadvantages

Top tier websites like Amazon, simply analyse the number of stars the products have received, and categorise them as excellent, good, average, bad, etc. There's a slim chance the star given isn't completely authentic. Sometimes, people tend to give fake ratings as a form of internet humour.

### 2.2 Proposed System

The tool analyses the sentiment of each and every review without any bias. Most of the time, the reviews are authentic, and the machine learning model will be able to predict the sentiment with nearly precise accuracy. Many e-commerce sites can benefit from this tool, and understand consumers' shopping patterns better.

## 3. SENTIMENT ANALYSIS

Sentiment Analysis refers to 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 widely applied to voice of the customer materials such as reviews and survey responses, online and social media, and healthcare materials for applications that range from marketing to customer service to clinical medicine.

Generally speaking, sentiment analysis aims to determine the attitude of a speaker, writer, or other subject with respect to some topic or the overall contextual polarity or emotional reaction to a document, interaction, or

event. The attitude may be a judgment or evaluation (see appraisal theory), affective state (that is to say, the emotional state of the author or speaker), or the intended emotional communication (that is to say, the emotional effect intended by the author or interlocutor).

#### **4. NATURAL LANGUAGE PROCESSING**

Natural-language processing (NLP) is an area of computer science and artificial intelligence concerned with the interactions between computers and human (natural) languages, in particular how to program computers to fruitfully process large amounts of natural language data.

Most of the research being done on natural language processing revolves around search, especially enterprise search. This involves allowing users to query data sets in the form of a question that they might pose to another person. The machine interprets the important elements of the human language sentence, such as those that might correspond to specific features in a data set, and returns an answer. Challenges in natural-language processing frequently involve speech recognition, natural-language understanding, and natural-language generation.

#### **4. CONCLUSIONS**

Thus, we can conclude that by the use of NLP and Sentiment Analysis, the problem of human errors, and false analysis is solved, thanks to the proposed system. The existing system was, although efficient, and did the job, wasn't very accurate. The star-based rating system has a flaw in which it cannot determine the genuine nature of a customer product review. This can be seen in the form of internet humour, where false ratings, or reviews, are submitted by 'trolls', without any proper reason. This entire problem is overcome thanks to the proposed system's concept of NLP and Sentiment Analysis.

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