**DAB 303 MARKETING ANALYTICS: PROJECT PROPOSAL**

**Sentiment Analysis on Amazon Alexa Reviews**

**Name:** Amir Dahya

**S\_ID:** 0791252

**Section:** 006

**INTRODUCTION:**

Amazon Alexa is a cloud-based voice service that enables users to communicate with technology. It is capable of voice control, music playback, alarm setting, home automation, and to weather and different information.

Product Reviews can provide valuable ideas about a product such as its property, quality, and recommendations, which also helps the customers to understand the product. Reviews will not only be advantageous for customers, but it also helps the manufacturer regarding their own items to understand customers and their needs. Analyzing user opinions of Alexa will be a worthwhile Marketing Analytics project because there are presently more than 40 million users of the smart speaker worldwide.

The Main Objective here is to forecast the feature impact of the product on user, whether positive or negative, of customer reviews almost 3000, for the Amazon Alexa Product. The raw data was taken from the Kaggle dataset for Amazon Alexa Reviews. There are 5 columns and 3150 rows in the dataset. Five Columns, which shows rating given for the product by the customer ranges from 1 to 5, stored as a positive ordinal integer variable, date contain the date of review, variation contains various amazon Alexa products, verified\_reviews contain the reviews given by customers for the product, And feedback which number of feedbacks of various amazon Alexa products.

**MOTIVATION:**

In recent times smart home technologies have become increasingly popular, these devices anticipate user input, respond, and can automate control of home amenities.

In CNET Reviews regarding Amazon Alexa, they stated that “Amazon's smart speaker was arguably the breakout product of 2015. Two years later, Alexa is still going strong.” That shows how successful the product is. Also, According to a survey and statistical study from Kunst (2019), over 50% of respondents use Amazon Alexa devices daily. Now, when it comes to Analyzing the product it tells the best features about it, how’s the product and much more. A typical method to analyze any reviews is manually, which is really time consuming and inefficient. Natural Language Processing, Python, And NLTK to do sentimental analysis and feature extraction.

**PROBLEM STATEMENT**

Customer satisfaction and experience are, as we all know, Amazon's two main goals. Therefore, in the project objective I have written: "Can we accurately forecast the negative comments and gather data from customer evaluations to enhance the quality of product design and user experience?" In order to fully address the subject, I will try to give all the answers in the project.

**WHAT IS SENTIMENTAL ANALYSIS?**

**Sentiment analysis**, the most widely used text categorization method, assesses whether the underlying sentiment of an incoming message is favorable, negative, or neutral.

Different Businesses must understand people's emotions as customers may now express their opinions and sentiments more freely than ever before. Reading every single line and determining the emotion that defines the user experience is difficult. The goal of sentiment analysis is to detect and categorize people's emotions toward a particular topic, product, or person.

**RESOURCES:**

In my Project I am using the Kaggle "**Amazon Alexa Reviews**" Dataset which is freely accessible, and considerable as per content of the dataset.

**The following techniques will be used to complete this project:**

* EDA (Python)
* Data Visualization (Python - Matplotlib & Seaborn)
* Build, Train, and Test ML Models and Evaluation (Python)

**REFERENCES:**

* Amazon Alexa Reviews dataset at Kaggle: [(https://www.kaggle.com/datasets/sid321axn/amazon-alexa-reviews)]((https:/www.kaggle.com/datasets/sid321axn/amazon-alexa-reviews))
* Definition of Sentiment Analysis and Information (<https://towardsdatascience.com/sentiment-analysis-concept-analysis-and-applications-6c94d6f58c17>)
* NLTK Library for Feature extraction and sentimental analysis (<https://www.nltk.org/howto/sentiment.html>)
* EDA and NLP to Pre-process (<https://realpython.com/sentiment-analysis-python/>)