SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCST 1043
Sem: 2024-2045 Session: Semester 1

SECTION A: Project Information.

Program Name:	**Masters of Science (Data Science)**
Subject Name:	**Project 1 (MCST 1043)**
Student Name:	Omar Mohammed Ali Albaagari
Metric Number:	MCS241021
Student Email & Phone:	ali-2000@graduate.utm.my | +966503978077
Project Title:	A Sentiment Analysis of Amazon Reviews Using Machine Learning Model
Supervisor 1:	
Supervisor 2 / Industry Advisor(if any):	

SECTION B: Project Proposal

Introduction:

Emotions are present in every single situation in which people engage with one another. In a variety of contexts, they have the ability to mold an individual's view of an experience, a subject, an issue, and so on. Through a number of channels, such as comments, reviews, and message boards, we may get feedback and opinions about a wide range of items, both online and offline. These feedback and ideas may be presented in the form of text, video, polls, and other forms. A certain degree of emotion is included in every kind of feedback, such as whether the experience as a whole was positive, bad, or neutral.

The ability of companies like Amazon to successfully meet the expectations of its customers is a significant factor in determining whether or not they will be successful in the long run. An endless number of people express their viewpoints on. There are several services or items that can be obtained via a variety of platforms, such as social networking sites, blogs, or prominent review websites, which can be found by simply doing a search engine query on Google. Before making a purchasing choice, it is now usual practice to look for reviews online. This is something that has been more frequent in recent years. As a result, the dissemination of customer evaluations and comments about online goods or services may have a substantial influence on the opinions that prospective consumers have regarding the firm. Amazon is also able to investigate these reviews in order to ascertain whether or not they are genuine and to identify whether or not they are a part of a competitor's attempt to influence perceptions.

Sentimental analysis is one of the machine learning processing techniques that helps detect feelings. This approach enables business owners to collect information about the perspectives of their customers via various online media, such as social media, questionnaires, and evaluations of e-commerce websites. A better understanding of the factors that contribute to the deterioration of the commodity will be possible as a result of this information. In this review, two facts are evaluated: the line "Apple Iphone 15 battery life is good and speakers' quality is not good" is an example of sentiment analysis. Sentiment analysis represents the behavior of the consumer with regard to the product, as well as the reputation of the company. When it comes to the quality of the speakers, there is a negative opinion, but the battery life is great.

Problem Background:

In this day and age, the number of websites that allow customers to make purchases online is rapidly expanding on a daily basis. One may find a multitude of reviews that have the potential to influence the things that are being purchased. Additionally, is having an effect on the vendor who is purchasing this item. In addition, the analysis of these many evaluations is difficult and takes a significant amount of time. At this point, the sentiment analysis is being carried out in order to have the ability to categories the evaluations into good, neutral, and negative sentiments in order to assist in the decision-making process for both the firm and the buyer.

Problem Statement:

As the number of customer reviews on Amazon continues to rise, there is a growing need for a system that can do precise analysis on the sentiment component. In order to manage enormous data sets, the current approach is not very precise and cannot be scaled up. The purpose of this study is to give a sentiment analysis of the large Amazon real dataset. The counter vectorizer, the term frequency inverse document frequency, and the logistic regressor are the three foundational models that underpin this work.

Aim of the Project:

the purpose of this project is to extract the sentiments that are conveyed in customer evaluations and then perform an analysis of these feelings that have been expressed. A machine learning model that is capable of categorizing client evaluations into two unique sentiment categories—namely, positive and negative categories—will be developed and trained in order to accomplish this goal. In order to create a dashboard that provides a summary of the analysis

Objectives of the Project:

- To extract the feelings that are expressed in customer evaluations and to conduct an analysis of these expressed feelings.
- To develop and train a machine learning model that is capable of classifying customer evaluations into two distinct sentiment categories: positive, neutral, and negative categories.
- To develop a dashboard that summarize the analysis

Scopes of the Project:

- This study will use counter vectorizer, term frequency inverse document frequency, and logistic regressor using scikit-learn library in Pythons.
- This study will focus on Amazon reviews specifically from categories such as smart devices Product.
- This study will use the PowerBI app for visualization the summary of the analysis

Project Requirements:

Software: Python | Power BI | SQL

Hardware:

Technology/Technique/ Methodology/Algorithm:

Type of Project (Focusing on Data Science):

[\ ] Data Preparation and Modeling

[\ ] Data Analysis and Visualization

[\ ] Business Intelligence and Analytics

[\ ] Machine Learning and Prediction

[ ] Data Science Application in Business Domain

Status of Project:

[\ ] New

[ ] Continued

If continued, what is the previous title?

SECTION C: Declaration

I declare that this project is proposed by:

[\ ] Myself

[ ] Supervisor/Industry Advisor ( )

Student Name: Omar Mohammed Ali Albaagari

Signature **Date**

SECTION D: Supervisor Acknowledgement

The Supervisor(s) shall complete this section.

I/We agree to become the supervisor(s) for this student under aforesaid proposed title.

Name of Supervisor 1:

Signature **Date**

Name of Supervisor 2 (if any):

Signature **Date**

SECTION E: Evaluation Panel Approval

The Evaluator(s) shall complete this section.

Result:

[ ] FULL APPROVAL

[ ] CONDITIONAL APPROVAL (Major)*

[ ] CONDITIONAL APPROVAL (Minor)

[ ] FAIL*

***** Student has to submit new proposal form considering the evaluators' comments.

Comments:

Name of Evaluator 1: .....

Signature	**Date**

Name of Evaluator 2:

Signature	**Date**