Customer Segmentation & Its Impact On Business Strategy Analysis

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Appendix A

CEP Mapping

Ks are addressed through the project and mapping among Ks,COS and POS

Ks	Attribute	How ks are addressed through the project	CO	PO
K2	Mathematics	Details and basic of Knowledge Statistics	**CO-1**	**PO-a**
K3	Engineering Fundamental	Knowledge about Machine Learning, Different types of Learning, Machine Learning Algorithms, Data Analysis Tool, and Python Language, and different types of Framework.	**CO-1** **CO-2**	**PO-a** **PO-b** **PO-c**
K4	Specialist Knowledge	Developing Dataset, Data Cleaning, Data Processing, Data Normalization, Feature Extraction, Design, Train & Test.	**CO-1** **CO-2**	**PO-a** **PO-b** **PO-c** **PO-e**
K6	Engineering Practice	Knowledge of programming language python, knowledge of using library, Machine learning based model, Understanding data, idea of large data set, classes of machine learning problem	**CO-1** **CO-2**	**PO-a** **PO-c** **PO-e**
K8	Research Literature	The research requires a detailed study of the related research field and other sources and documentation	**CO-1** **CO-5**	**PO-a** **PO-d** **PO-h**

Ps are addressed through the project and mapping among Ps, COs, and POs

Ps	Attribute	How Ps are addressed through the project	CO	PO
P1	Depth of Knowledge Requirement	Basic & advance statistics knowledge(**K2**) Project requires study of research on Data Science, Data Analysis & Machine Learning Algorithms (**K8**) Data collection from Online shop, super shop, e-commerce site (Facebook page) (**K3, K4**) knowledge of using Library, Machine learning Based Model, Understanding Data, Idea of Large Data Set, Classes of Machine Learning Problem (**K6**)	**CO-1** **CO-2** **CO-8**	**PO-a** **PO-b** **PO-c** **PO-d** **PO-j** **PO-l**
P2	Range of Conflicting Requirements	Developing a practical machine learning model with proper regularization with low variance while limited given data will be used. If the learning process is unsupervised or reinforcement rather than supervised learning, then accurate segmentation will be commuted	**CO-2** **CO-4**	**PO-a** **PO-c** **PO-g**
P3	Depth of Analysis Required	A huge algorithm can be adopted but choice of the selected algorithm requires in-detail and depth analysis	**CO-1** **CO-2**	**PO-a** **PO-b** **PO-d** **PO-l**
P4	Familiarity of Issues	CSE graduates are not typically familiar with customer management, business analytics and business policy.	**CO-5**	**PO-f**
P5	Extent of Applicable Codes	We maintained user privacy carefully as well as took other ethical approaches and usedopen-licensed tools to develop the system.	**CO-5** **CO-6**	**PO-f** **PO-h** **PO-i**
P6	Diverse Groups	People of all ages and classes are involved specially the more loyal people	**CO-6**	**PO-i**
P7	Interdependence	Research involves a number of sub-system like Data Collection, Training Dataset, Machine Learning Algorithms, Data Analysis,Data Processing.	**CO-3** **CO-6** **CO-8**	**PO-c** **PO-i** **PO-j** **PO-k**

Addressing Complex Activities (As) through the project

As	Attribute	How As are addressed through the project
A1	Range of Resources	The project requires the use of diverse resources including different types of **materials**, **Information's**: dataset (test & training), **Dataset**(Link:) **people**: (Members: Tanveer Ahamed Rabby,Md.Efti Khirul Alam,Sharmin Akter)
A2	Level of interaction	The level of interaction between the group members has been varied when it comes to making the dataset in our model. By using data analysis & Machine learning algorithms to segment customers from a large dataset for a particular company.
A4	Consequences for society and the environment	By segmenting customers, it can be easy to understand the divergence between loyal customers and so-called customers. If we can segment the customer which contains some features, it can be easier for a businessman or a company to realize the loyal and targeted customer which will be a more efficient way for business.
A5	Familiarity	The project deals with data analysis and machine learning algorithms for segmenting customer and market basket analysis for learners.

Course Outcomes (CO) with PO mapping for this project

CO No.	CO Statements	Corresponding POs
CO1	We identified, formulated, and analyzed the real-world problem of Supershop/E-commerce by segmenting their customer analyzing dataset.	**a** **b** **d** **l**
CO2	We proposed a solution using data science and machine learning algorithms to segment the customer for any kind of enterprise as well as find the most selling item of a company.	**a** **c** **e**
CO3	Expected completion time of 6 months,initially for analysis no budget required.	**k**
CO4	Marketers can be extra efficient in phrases of time, cash, and other sources through segmenting their facts. Marketplace segmentation permits organizations to have a higher understanding in their clients. They gather a greater draw close to the requirements and desires of customers, allowing them to personalize campaigns to the consumer groups most likely to buy objects.	**g**
CO5	Understood the concept of professional ethics, confidentiality, industrial standards, risk-benefit analysis and explained the impact of engineering solutions in social safety,data safety, and welfare from the Code of Ethics (https://www.acm.org/code-of-ethics)	**f** **h**
CO6	Function effectively in a multidisciplinary team	**i**
CO8	The present design,analysis,analysis output, documentation through oral presentations	**c** **j**

Washington Accord Program Outcomes (PO) for engineering programs

No.	PO	Differentiating Characteristic
a	Engineering Knowledge	Breadth and depth of education and type of knowledge, both theoretical and practical
b	Problem Analysis	Complexity of analysis
c	Design/ development of solutions	Breadth and uniqueness of engineering problems such as the extent to which problems are original and to which solutions have previously been identified or codified
d	Investigation	Breadth and depth of investigation and experimentation
e	Modern Tool Usage	Level of understanding of the appropriateness of the tool
f	The Engineer and Society	Level of knowledge and responsibility
g	Environment and Sustainability	Type of solutions.
h	Ethics	Understanding and level of practice
i	Individual and Team work	Role in and diversity of team
j	Communication	Level of communication according to type of activities performed
k	Project Management and Finance	Level of management required for differing types of activity
l	Lifelong learning	Preparation for and depth of Continuing learning.