

Capstone Project Submission

Instructions:

- i) Please fill in all the required information.
- ii) Avoid grammatical errors.

Team Member's Name, Email and Contribution:	
<p>1. Manas Nayan Mukherjee Email address : manasofficial@gmail.com Contribution: Preparation of power point slides, technical documentation, video presentation and final checklist submission evaluation.</p> <p>2. Kunal Ramesh Rao Kodarlikar Email address : kkodarlikar@gmail.com Contribution: Project topic selection, preparation of the content selection, preparation of project coding in colab and evaluation.</p>	
Please paste the GitHub Repo link.	
<p>Github Link (Manas): – https://github.com/ManasNM/Online_retail_customer_segmentation Github link (Kunal): https://github.com/KUNALKODARLIKAR/Online_Retail_Customer_Segmentation</p>	
<p>Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200–400 words)</p>	

Summary: Customer segmentation is considered as an essential tactical analysis tools and are often used by companies and organizations to optimize products, services, sales and marketing strategies. Companies and organizations uses customer segmentation analysis reports to optimize the corporate decisions that is derived from deep customer analysis. Further, when it is used as part of good business practices, a company can improve its competitiveness as well as reduce the chances which are important in a deep understanding of existing customer segmentation.

Components: The main components which are related with the online customer retail customer segmentation are Invoice number, stock code (item code) , description of the product, quantity, unit price (product price per unit), customer id (a unique 5 digit integral number) and country name.

Problem statement: We have explored the dataset of online retail customer segment where in we need to identify the customer segments on a transactional data set which contains transactions occurred between December 2010 to 2011, what type of sale made by the company and the quantity of the product purchased by the customers.

Approaches: We have used RFM method used to analyze customer value. It is a marketing framework that is used to understand and analyze customer behavior based on three factors Recency, Frequency, and Monetary. Further, K means clustering (including Hierarchical Clustering and DBSCAN) is used to distinct non-overlapping subgroups and to get a better understanding of them which in turn could be used to increase the revenue of the company. The silhouette score is used to measure the model quality and the elbow method was useful in finding the the value of an optimal number of clusters for given customer data.

Conculsion : Customer segmentation is an activity to divide customers or item into groups that have the same characteristics. Also, the data which is required for customer segmentation is a internal part. Methods of customer segmentation can be classified into simple technique, RFM technique, target technique and unsupervised technique. The process of customer segmentation can be simplified into defining business objective, collecting data, data preparation, analyzing variable, data processing, and performance evaluation.

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