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IMPROVING THE CUSTOMER RELATIONSHIP MANAGEMENT (CRM) USING DATA MINING

ANUHYA DASOJU[1], CHANDANAMADHURA[2], KIRANMAI ARNEPALLI[3]
E. HARICHANDANA REDDY[4], CHILAKAMUDI HARSHINI[5]
SUPERVISOR DR.M. MURUGESAN
Professor[1,2,3,4,5]

ABSTRACT:

Customer Relations Management (CRM) deals with the methods and tools which helps in managing the customer relationship in the business. Customer Relationship Management is used to describe patterns and relations. It provides the path to organize the data and to produce the results by using data mining techniques. Data Mining is the technique used to analyze the large set of data. Data mining tool is used to monitor the sales activity and the transaction process for the purpose of improving the sales activity. The sales data of the customer is processed with the java implementation effectively and aims at improving the performance of the customer relationship management which entirely depends on the sales of the data.That improvement of the sales activity enhances the performance of the Customer Relation Management using data mining techniques.

INTRODUCTION

The main goal of the project is to evaluate and analyze the transaction process of the customer sales activity to improve the customer relationship management. The existing system will be analyzed based on the customer's segmentation and the attribute analysis of the customer's retention. The methodology used in the new system will be given with its data mining techniques. The proposed new system is given with its advantage. The evaluation is given for the newly developed system with its functionality and the performance.

ANURAG ENGINEERING COLLEGE
AUTONOMOUS
(Affiliated to JNTU-Hyderabad, Aprroved by AICTE-New Delhi)
ANANTHAGIRI (V) (M), SURYAPETA (D), TELANGANA-508206

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The objectives are

To integrate the data mining tools for improving the Customer Relationship Management (CRM) System.

To identify the business problems persisting at Sainsbury.

To point the advantages of point-of-sales for recording the transaction in the Sainsbury stores

To point the advantages of store-branded credit cards for recording the transaction in the Sainsbury stores.

To provide recommendation for solving the identified problems through the proposed data mining system.

Earlier, the systems have concentrated only on behavioral and demographic clustering. For the purpose of improving the Customer Relationship Management in better way, the sales activity of customer data is generated to improve the customer relationship management. On the other side, the evaluation is done with the help of k-means clustering and the Naïve Bayes Classification.

The aim of the project is to improve the Customer Relationship Management by processing customer sales data and its transaction process, to analyze the data and provides new information, to implement text mining algorithms based on clustering and classification of sales data.

Data mining is a subfield of computer science department. It is one of the computing process of introducing a new patterns in large data sets which involves tools and techniques at the intersection of machine learning and statistics etc., it actually depends on effective data collection. The Customer Relations Management is very important in the business environment in order to improve the business as well as Customer Relationship Management level in a good way. The overall text mining process is done effectively with the software called java implementation which is explained below. The Customer Relationship Management always uses new kinds of technology to gather the information need for the purpose of providing both the services and the support. The Customer Relations Managementis compared with the marketing which is traditional. The traditional kinds of marketing has many kinds of series with periodic transaction. The strategy of the Customer Relations Management generates a value that is mutual nature.

The main structure of the entire organization and the efforts taken around the segments in customer and then it delivers the products to the customer consummation. The objective of the organization or the company with goals identifies the customer consummation and dissatisfaction. This process is used to improve satisfaction of the customer and helps in reducing the customer dissatisfaction in the model of the business. The Customer Relation Management acts as an interface between two fields such as Marketing and Information Technology. The Customer Relationship Management mainly focuses on IT-services and marketing sales.

MOTIVATION

Customer relationship management (CRM) is a technology for managing all your company's relationships and interactions with customers and potential customers. The goal is simple: Improve business relationships. A CRM system helps companies stay connected to customers, streamline processes, and improve profitability. Companies that do a better job of managing customer relations are more likely to see higher customer retention rates. In fact, studies show that 61% of customers stop buying from a company if they have a poor customer experience.

PROBLEM STATEMENT

The systems have concentrated only on behavioral and demographic clustering. Sales activity of customer data is generated to improve the customer relationship management. On the other side, the evaluation is done with the help of JRip and the Naïve Bayes Classification

OBJECTIVES

Input Design is the process of converting a user-oriented description of the

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input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow.

LITERATURE SURVEY

TITLE: Automated web usage data mining and recommendation system using K-Nearest Neighbor (KNN) classification method

AUTHORS: Adeniyi, D., Wei, Z. and Yongquan, YDESCRIPTION

Underwater Acoustic Sensor Networks (UW-ASNs) consist of devices with sensing, processing, and communication capabilities that are deployed underwater to perform collaborative monitoring tasks to support a broad range of applications. The enabling communication technology for distances over one hundred meters is wireless acoustic networking because of the high attenuation and scattering affecting radio and optical waves, respectively. In this work, the problem of data gathering is investigated by considering the interactions between the routing functions and the characteristics of the underwater acoustic channel. Two distributed geographical routing algorithms for delay-insensitive and delay-sensitive applications are proposed and shown through simulation experiments to meet the application requirements.

TITLE: Comparison between Various Approaches for Customer Relationship Management in Data Mining

AUTHORS: Aggarwal, S. and Madan, E DESCRIPTION

An enterprise social network (ESN) involves diversified user groups from producers, suppliers, logistics, to end consumers, and users have different scales, broad interests, and various objectives, such as advertising, branding, customer relationship management etc. In addition, such a highly diversified network is also featured with rich content, including recruiting messages, advertisements, news release, customer complains etc. Due to such complex nature, an immediate need is to properly organize a chaotic enterprise social network as functional groups, where each group corresponds to a set of peers with business interactions and common objectives, and further understand the business role of each group, such as their common interests and key features differing from other groups. In this paper, we argue that due to unique characteristics of enterprise social networks, simple clustering for ESN nodes or using existing topic discovery methods cannot effectively discover functional groupsand understand their roles.

TITLE: Content-free collaborative learning modeling using data mining AUTHORS: Anaya, A. and Boticario, J DESCRIPTION

PhenoLines is a visual analysis tool for the interpretation of disease subtypes, derived from the application of topic models to clinical data. Topic models enable one to mine cross-sectional patient comorbidity data (e.g., electronic health records) and construct disease subtypes-each with its own temporally evolving prevalence and co-occurrence of phenotypes-without requiring aligned longitudinal phenotype data for all patients.

EXISTING SYSTEM

The existing system provides various data mining approaches for improvement of customer relation management. Some of the approaches are the customer segmentation and the attribution analysis for customer retention. The existing system had analysis based on

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Internet provider system, Hotel Management System and Customer support service. Existing system concentrated mainly on Customer Retention and Segmentation. The Customer Retention is the process of maintaining the old customers who are already purchasing things regularly, who comes regularly to the super markets.

The Customer segmentation is the process to find the different business strategies which are very creative and innovative. It also helps in marketing environment. Some continuous or regular updates are given to the customers to their email or phone regarding new products or new discounts. It is easy to understand the nature of the customer who purchase things or who comes to eat in hotels regularly. It involves the processes like data preprocessing, data identification, data clustering and Data classification. As per the discussions made about the existing system above, so far the systems have concentrated only on behavioral clustering and demographic clustering. And in classification, JRip classification, Naïve Bayes Classification is done so far.

PROPOSED SYSTEM

The proposed system mainly concentrates on customer support and customer attraction. The system must ensures the features of transaction processing and flexibility of the customer. It mainly aims at focusing to improve the Customer Relationship Management. The customer's retention and the customer's segmentation mainly aims at ensuring and maintaining the data and its transaction process. To improve the performance of the Customer Relationship Management, java implementation is used. This java implementation helps in processing the customer's sales data. The tool is embedded with clustering algorithm such as k-means, k- nearest neighbor, Regression and Decision tree making.

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Screen Shot 1:- Output Screen 1

Screen Shot 2:- Output Screen 2

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Screen shot 3:- Process of Inserting Data Set

Screen Shot 4:- Updating Data Set

Screen Shot 5:- Data Collection Screen

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Screen Shot 6:- Data Pre Process Screen

Screen Shot 7:- Showing De Noise Data Screen

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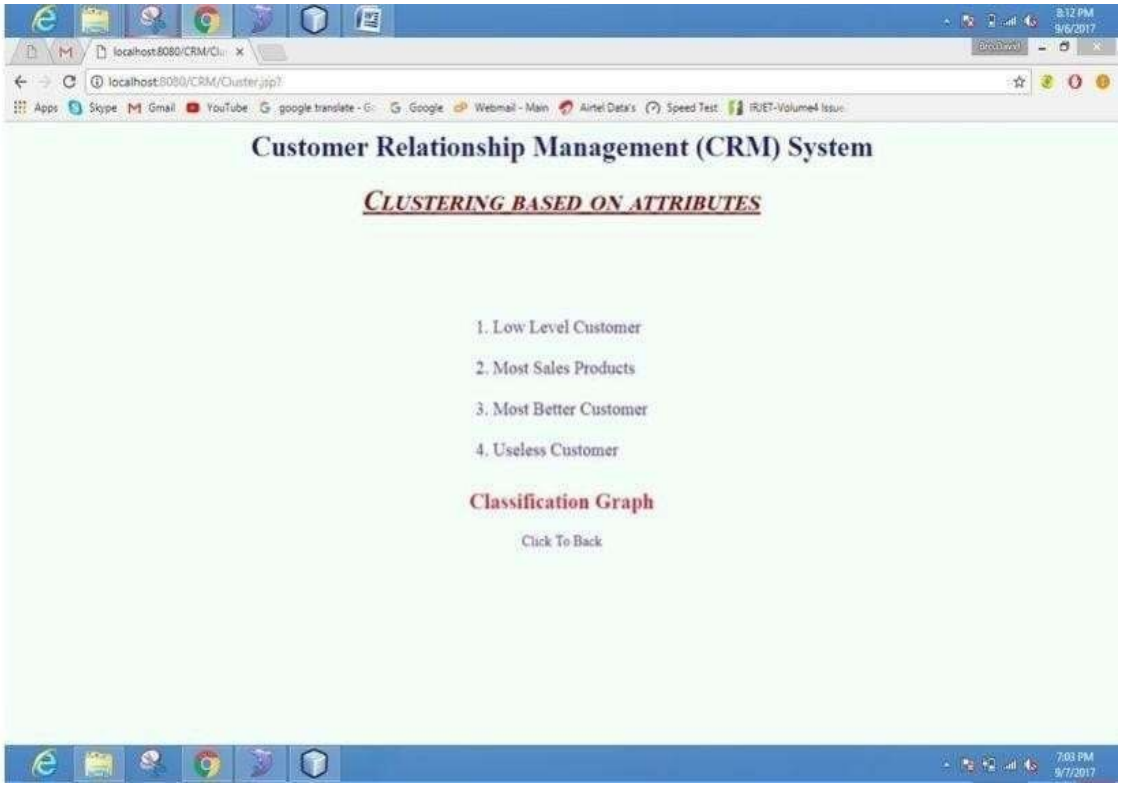
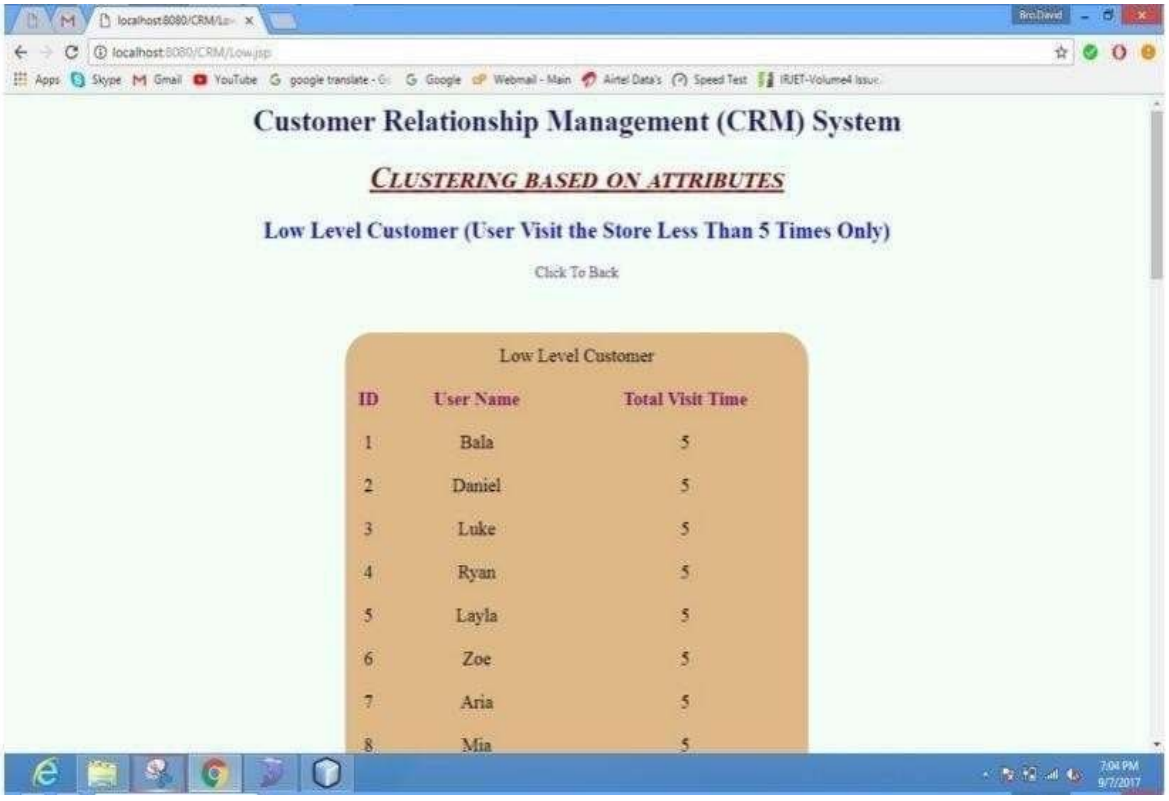


Screen Shot 8:- Clustering Based on Attributes



Screen Shot 9:- Low Level Customer

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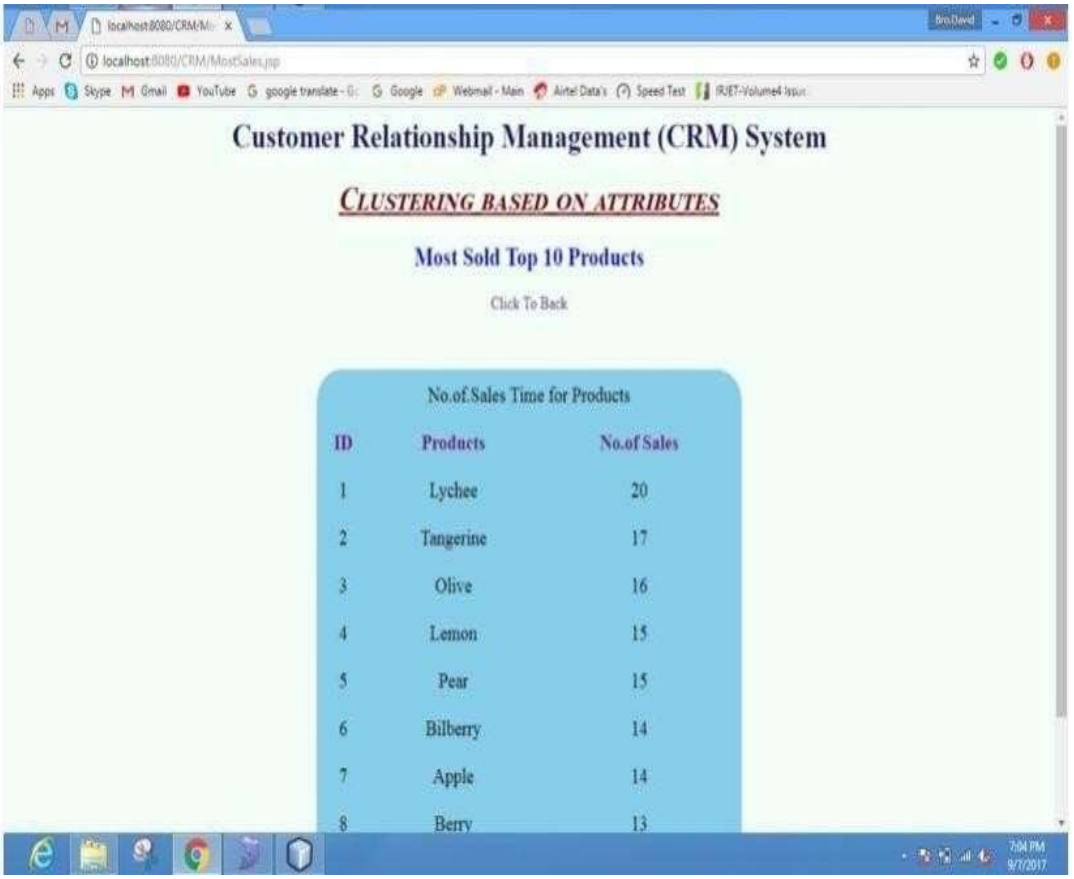

Screen Shot 10:- Most Sold Top 10 Products

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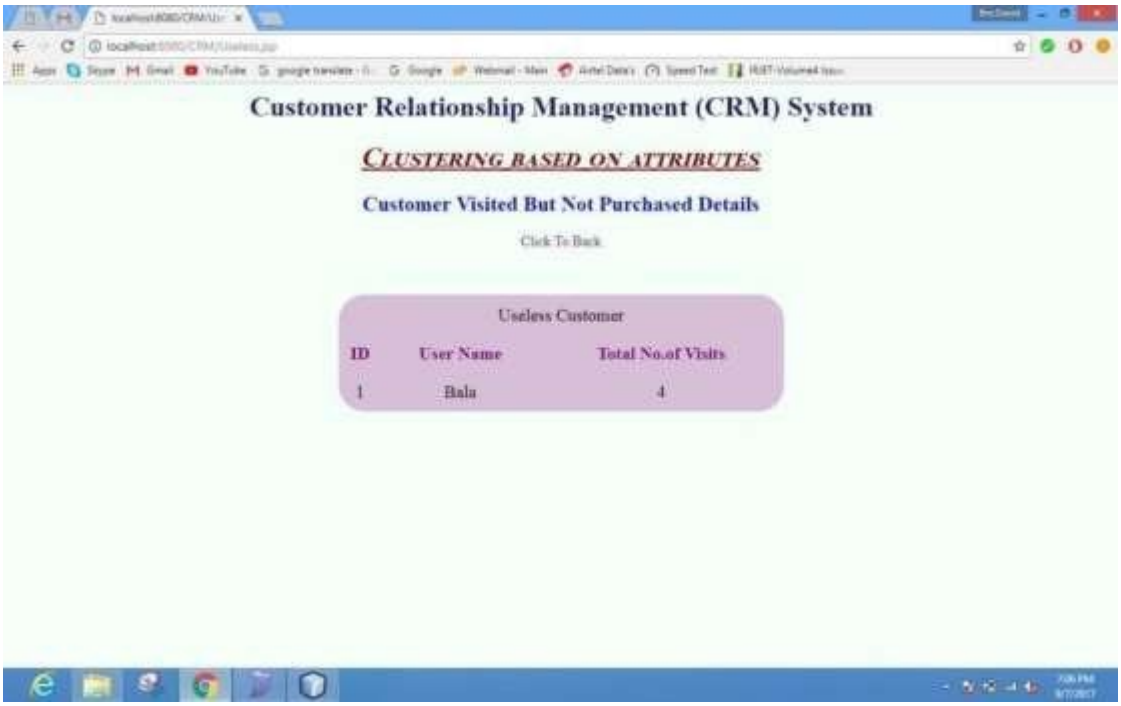
Screen Shot 11:- Less Visited Customers List



Screen Shot 12:- Only Visited Customers List

Screen shot 13:- Most Sold Top 10 Products Graph

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CONCLUSION

The modules described in the proposed system will be implemented using a data mining tool called weka. Sainsbury attracts their customers by their mission. Various types of data mining tools are discussed to improve the Customer Relation Management. The business problems that are presently persisting at Sainsbury is identified. The advantages of point-of- sales and store-branded credit cards for recording the transaction in the Sainsbury stores are provided. The recommendation policies are provided for the problems that are identified through the proposed data mining system. Data mining tool called weka is used to improve the Customer Relation Management. Customer Relation Management model consists of various types. CRM model is used to do data mining to retain the customer in this business world. The proposed system analyzes the data using the data mining tool. Clustering and classification algorithms are applied in the data to produce comparative results.The objective of integrating the data mining tools for improving the Customer Relationship Management (CRM) System is given. The main business problems persisting at Sainsbury is identified. The advantages of point-of-sales for recording the transaction in the Sainsbury stores is pointed out. The advantages of store-branded credit cards for recording the transaction in the Sainsbury stores are pointed out. The recommendation for solving the identified problems through the proposed data mining system is provided.

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