Farmers E-Commerce Web Application

S.Pavithran[1], G.Saran[2], M.Vignesh[3], S.Vimal[4] „Mr.S.Sekar(Ph.d)[5]
[1, 2, 3] Dept of Information Technology
[4]Assistant professor, Dept of Information Technology
[1, 2, 3, 4] Valliammai Engineering College,Kattankulathur.

Abstract- *Collaborative Filtering (CF) is one of the most successful recommendation approaches to cope with information overload in the real world. The main advantage of CF is to recommend the best product in a group. This project is proposed to develop an e-agriculture platform for the farmers to sell their products directly to the end users. In this case, the end users can get the products freshly and the farmers can also earn more. The product users may suggest and they may give the reviews for that product. This review helps the other users to buy the product hopefully. Clustering techniques such as crop clustering can be used to provide rating to the farmer products. The Bounce rate can be drawn by clustering all the sales details and count values of the farmer. It will represent the details in the graph form. Crop clustering helps the user to find the best farmer in the group. Depth first search is a sorting algorithm used to arrange the products according to the visit count of the users. The additional Healthcare menu helps the user to get special variety of products for diseased persons. More advanced applications of e agriculture in farming exist in the use of sophisticated ICTs such as satellite systems and Global Positioning Systems (GPS) to improve the quantity and quality of production.*

I. INTRODUCTION

E-Agriculture" is an emerging field in the intersection of agricultural informatics, agricultural development and entrepreneurship, referring to agricultural services`, technology dissemination, and information delivered or enhanced through the Internet and related technologies. More specifically, it involves the conceptualization, design, development, evaluation and application of new (innovative) ways to use existing or emerging information and communication technologies (ICTs).E-Agriculture goes beyond technology, to promote the integration of technology with multimedia, knowledge and culture, with the aim of improving communication and learning processes between various actors in agriculture locally, regionally and worldwide. Facilitation, support of standards and norms, technical support, capacity building, education, and extension are all key components to e-Agriculture. There are several types of activity related to e-agriculture applications that are widely recognized around the world today.

The delivery of agricultural information and knowledge services (i.e. market prices, extension services, etc) using the Internet and related technologies falls under the definition of e-Agriculture. More advanced applications of e agriculture in farming exist in the use of sophisticated ICTs such as satellite systems, Global Positioning Systems (GPS), advanced computers and electronic systems to improve the quantity and quality of production.

In India agriculture is a major occupation for most part of population. Most rural population depends upon agriculture as their important occupation. Techno legal ICT and cyber law specialist of India and the managing member of "Association for people of India" (AFPOI), the agriculture development characteristics are analyzed keeping in mind the advent of E-agriculture in India. E-Agriculture Community is made up of individual stakeholders such as information and communication specialists, researchers, farmers, students, policy makers, business people, development practitioners, and others. More specifically, e-Agriculture involves the conceptualization, design, development, evaluation and application of innovative ways to use information and communication technologies (ICT) in the rural domain, with a primary focus on agriculture. E-agriculture is the Internet platform of this global initiative aimed at promoting sustainable agricultural development and food security by improving the use of information, communication, and associated technologies in the sector.

In short e-Agriculture will connect all concerned persons starting from farmers to researchers together. Farmers can get the desired information at any instant of time from any part of world and they can also get the help from experts viewing their problem immediately by without moving anywhere. E-agriculture is a rising field for enhancing existing agriculture and food security through enhanced processes for knowledge access and switch using information and communication technologies. The World Summit on the Information Society (WSIS) Plan of Action comprises e-Agriculture as a region of function of information and communication technologies (ICTs).

II. RELATED WORKS

In[1],Recommending appropriate product items to the target user is becoming the key to ensure continuous success of Ecommerce. Today, many E-commerce systems adopt various recommendation techniques, e.g., Collaborative Filtering (abbreviated as CF)-based technique, to realize product item recommendation. Overall, the present CF recommendation can perform very well, if the target user owns similar friends (user-based CF), or the product items purchased and preferred by target user own one or more similar product items (item-based CF). While due to the sparsity of big rating data in E-commerce, similar friends and similar product items may be both absent from the user-product purchase network, which lead to a big challenge to recommend appropriate product items to the target user. . Considering the challenge, we put forward a Structural Balance Theory-based Recommendation (i.e., SBT-Rec) approach. In the concrete, user-based recommendation: we look for target user's "enemy" (i.e., the users having opposite preference with target user)

In[2], Data mining is the practice of examining and deriving purposeful information from the data. Data mining finds its application in various fields like finance, retail, medicine, agriculture etc. Data mining in agriculture is used for analyzing the various biotic and abiotic factors. Agriculture in India plays a predominant role in economy and employment. The common problem existing among the Indian farmers are they don't choose the right crop based on their soil requirements. Due to this they face a serious setback in productivity. This problem of the farmers has been addressed through precision agriculture. Precision agriculture is a modern farming technique that uses research data of soil characteristics, soil types, crop yield data collection and suggests the farmers the right crop based on their sitespecific parameters. This reduces the wrong choice on a crop and increase in productivity. In this paper, this problem is solved by proposing a recommendation system through an ensemble model with majority voting technique using Random tree, CHAID, K-Nearest Neighbour and Naive Bayes as learners to recommend a crop for the site specific parameters with high accuracy and efficiency.

In[3],Smart farming system is an autonomous & sophisticated mechanism, which will aid in the growth of agriculture yield by applying hi-tech agriculture techniques without human intervention. The paper represents an overview of a recent smart farming software solutions. The proposed system works on the data mining techniques & data obtained from satellite information, Internet, from soil testing report fed in the existing databases. It elegantly makes use of the clustering algorithms for taking decisions based on the awareness of weather changes, by keeping track of crop growing stages, with proper water utilization, along with the decision of fertilizer to be used according to crop stage, as well as the pesticide to be used to protect crops from diseases and insect attack. This system is capable of increasing the productivity of fields by managing farm operations smartly.

In [4], India being an agricultural country is still using traditional ways of recommendations for agriculture. Currently recommendations for farmers are based on mere one to one interaction between farmers and experts and different experts have different recommendations. Recommendation can be provided to farmers using past agricultural activities with help of data mining concepts and the market trend can be merged with it to provide optimized results from recommender. The paper proposes the use of data mining to provide recommendations to farmers for crops, crop rotation and identification of appropriate fertilizer. The System can be used by farmers on web as well on android based mobile devices.

In [5], Combination of a Cluster-Based and Content-Based Collaborative Filtering Approach for Recommender System" with the development in technology in the field of e-commerce, the problem with information overload has been at its peak. Oftentimes the user is overwhelmed by the huge amount of options he/she is provided with while searching for an item. This is when recommender system comes in handy, which is an information filtering technique aimed at presenting the user with the most possible options based on certain reference characteristics. However, the problem with many recommender systems is that they are associated with a high cost of learning customer preferences. The current agricultural web application uses recommendation system along with the collaborative filtering concept which introduces the Agricultural Informative System (AIS) that uses pseudo feedback, which provides a method for automatic local analysis about the user preferences with the help of clustering in collaborative filtering. The AIS uses pseudo feedback to capture the preferences which are stored in the users profile for future personalized recommendations to address the problem.

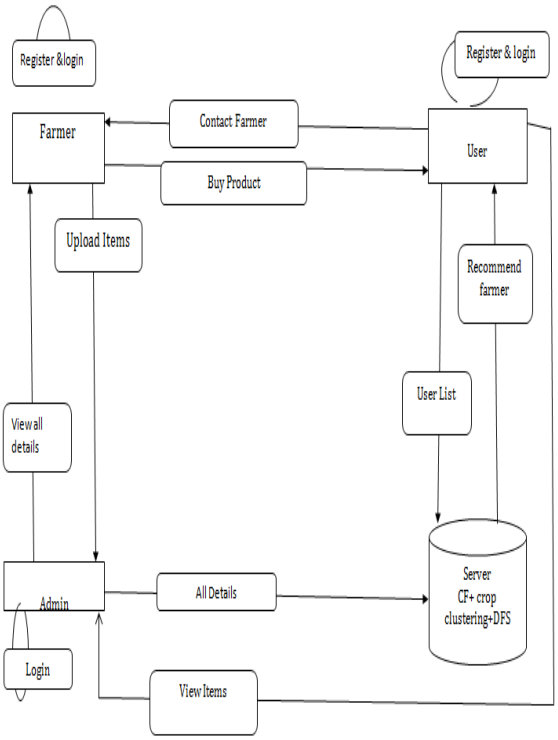


Figure (1) Architecture diagram

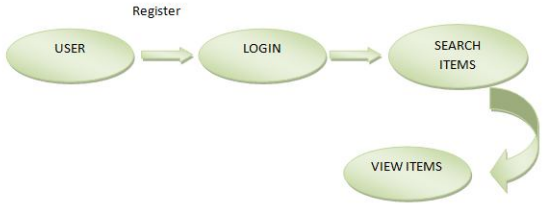
III. PROPOSED SYSTEM

In this project we propose to develop an e-agriculture platform for the farmers to sell their products directly to the end users. In this case, the end users can get the products freshly and the farmers can also earn more.Thus creating a healthy ecosystem for the agriculture field. In this system, we integrate Collaborative filtering to recommend the farmer products based on the user preferences or user taste. Crop clustering can be used to make rating prediction for farmers. The health care menu can be used to recommend the special varieties of products for diseased person. It helps to develop a healthy environment. . More advanced applications of e agriculture in farming exist in the use of sophisticated ICTs such as satellite systems and Global Positioning Systems (GPS) helps customer to find the location of a particular farmer Depth first search is a sorting algorithm used to arrange the products according to the visit count of the users. The additional Healthcare menu helps the user to get special variety of products for diseased persons.

IV. MODULES DESCRIPTION

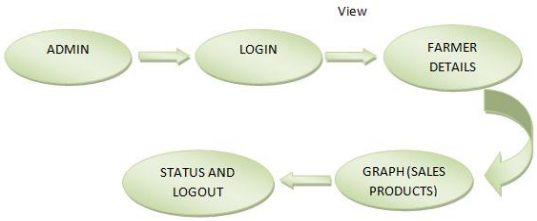
IV.1) User Module

In figure 5 The user can login into the account and search the items and they buy products on the application.



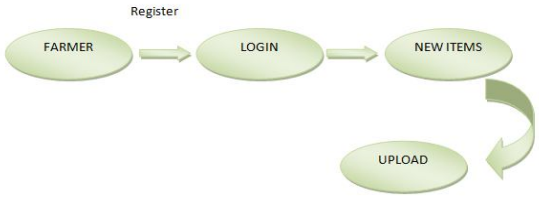
IV.2) ADMIN MODULE

In figure 5.2, The admin can view the details of the farmer and user. The admin can update the medicine in the health care menu. The sales details and user details can be manage by the admin.



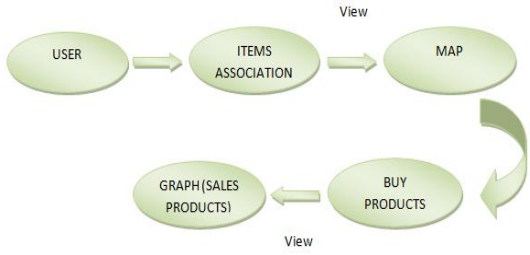
IV.3) FARMER MODULE

In figure 5.3, The Farmer can login into the account and they upload the details of the product. The farmers should manage the item list and sales details



IV.4) RECOMMENDATION MODULE

In figure 5.4, Collaborative Filtering (CF) is one of the most successful recommendation approaches to cope with information overload in the real world. CF is to recommend the best product in a group. Crop clustering can be used to provide rating to the farmer products. The Bounce rate can be drawn by clustering all the sales details and count values of the farmer. Crop clustering helps the user to find the best farmer in the group.



IV.5) COLLABORATIVE FILTERING :

Recommending appropriate product items to the target user is becoming the key to ensure continuous success of Ecommerce. various recommendation techniques can be adopt by e-commerce system. To build a personalized recommendations on the web collaborative filtering (CF) is a commonly used technique. The type of collaborative filtering which we use is model based.

Model Based: Data mining are used to create models, according to training data the system learns algorithms to look for habits. To come up with predictions of actual data these models are used. Collaborative filtering algorithms is use to filter data from user reviews and ton make personalized recommendations for users with similar preferences.Collaborative filtering is a method of automatic predictions (filtering)about the interests of the user by collecting preferences or taste information from many users.

IV.6) DEPTH FIRST SEARCH:

Depth first search is a sorting algorithm used to arrange the products according to the visit count of the users. For traversing or searching products or graph data structures depth –first search algorithm is used. One starts at the root (selecting some arbitrary node as the root in the case of a graph) and explores as far as possible along each branch before backtracking. Depth first search in relation to specific domains such as searching for solutions in artificial intelligence. The graph to be traversed is often either too large to visit in its entirety or infinite. In this cases search is performed to a depth due to limited resources. Such as memory or disk space one typically does not use data structures to keep track the set of all previous visited vertices.

When DF search is performed to a limited depth the time is still linear in terms to number of expanded vertices. Edges although this number is not the same as the capacity of the entire graph because some vertices may be searched more than once and others not at all but the space complexity of this variant of DFS is only proportional to the depth limit. As a result is much smaller than the space needed for searching to the same depth using BFS. DF search also lends itself much better to heuristic methods for choosing a likely-looking branch.

V. CONCLUSION

This project is concentrated on E-Commerce web application for the farmers to sell their product directly to the end user so the farmers can earn more The Farmers can gain knowledge about the internet and entrepreneurship.

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