Online Shopping Application for Local Vendors.

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ABSTRACT

In the era of online shopping with the online shopping giants like Flipkart, Amazon dominating the shopping world, people are ignoring the local vendors who also provide us with the same quality goods. And so, in an attempt to provide global platform to the local vendors and to acquaint the people with the shops available in their locality, we are designing an online shopping application for local vendors in Pune.

Keywords: Data Mining, Clustering, Indexing, Global Positioning System (GPS), Latitude, Longitude, Application Programming Interface (API).

"I. INTRODUCTION"

To develop a web service which will have product information and its related data in detail from local markets in Pune. Depending upon customers, his GPS location will be detected. Discounts will also be offered to the customer through the app which the customer can avail using promo codes.

This application will use various techniques such as:

Geofencing
Geofencing is based upon "Trilateration Algorithm with Performance Analysis" and "Haversine Formulation and Visualization algorithm." It is used for location detection of customers as well as it will display shops in 5-10 kms range of customer.

Recommendation of Products
The web service or android application will recommend the products to the user according to the previous search history of the user.

Data Mining techniques will also include indexing of data.

II. SURVEY DETAILS

LOCATION BASED PAPERS

1. “The Advanced TOA Trilateration Algorithms with Performance Analysis”, IEEE-2016 by Sajina Pradhan, Seokjoo Shin, Goo-Rak Kwon, Jae-young Pyun, and Suk-seung Hwang states about the time of arrival (TOA) trilateration, which is one of the representative localization algorithms, estimates the location of the mobile station (MS) based on the received signals from at least three base stations (BS).

2. “Student Residential Distance Calculation using Haversine Formulation and Visualization through GoogleMap for Admission Analysis”, IEEE-2016 by Vinayak Hegde, Aswathi T S, Sidharth R. gives details about Haversine distance formulation algorithm. Google maps API is used to find out the latitude and longitude of each shop and customer.

DATA MINING BASED PAPERS

3. “An Efficient Approach for Clustering Uncertain Data Mining Based On Hash Indexing and Voronoi Clustering”, IEEE 2013 by Samir Ajani, Mangesh Wanjari gives details about the various clusters of data is formed from the uncertain and unstructured data. There are various techniques for clustering of data such as Rule based classification, DTL, Naive Bayes Classification, etc. Generally K-means algorithm is used for clustering of data but that increases computational time and so we use K-means with Voronoi Clustering.

GENERAL PAPERS

4. "Psychology Reactance to Online Recommendations: the Influence of Time Pressure ", IEEE 2012 by Wang Yanping and Cheng Yan shows that psychological theories have proved that pressure on time for a task accomplishment has an effect on people's attitude to giving advises. Many e-commerce application have brought this theory in practical and
have implemented this in their design of marketing and promotions.

5. “An Laboratory Experiment for Comparing Effectiveness of Three Types of Online Recommendations”, IEEE 2008 by SHI Lin, WANG Kanliang. states that increasing use of e-commerce has accelerated the development of this business. And so reduce information overload and help the customer to make easy and better decisions of purchasing a product these e-commerce websites have introduced online recommendation systems.

6. “The Impact of Information Factors on Online Recommendation Adoption”, by Xiaobing Gan, Yanhua Zhang, Yanan Yu, Yanmin Jiao paper states that Elaboration Likelihood Model (ELM) is used to demonstrate the important adoption factors on the recommendation system.

7. “Optimal Recommendation to Users that React: Online Learning for a Class of POMDPs”, IEEE 2016 by Rahul Meshram, Aditya Gopalan and D. Manjunath. States that AOR (Automated online recommendation) systems for different types of system content aim to adapt to user’s preferences.

8. “User Preference Learning for Online Social Recommendation”, IEEE by Zhou Zhao, Deng Cai, Xiaofei He and Yueting Zhuang states that social networking sites like Twitter and Facebook are popular platforms through which users give their opinions for various products and these are found to have an impact on the sale of the product positively or negatively. Also in various shopping applications, recommendations are provided for purchasing various products.

III. PROPOSED SYSTEM"

The previous Recommendation system or online shopping portals and is not feasible to show the location based product which has a higher recommendation or the higher review. Those systems are not able to send the information of the product which is nearby available.

PRODUCT FUNCTION

[1] Admin Module : Admin of the application will register only once. Admin can register/add a shop, edit and delete shop.

[2] Shop Module : Shop user can login using user id and password which is registered by admin. Shop user can add product, edit and delete a product.

[3] Customer Module : Customer registers and then logs in, and first time sees all products. Search based on products category can be done. For example, mobile, laptop, etc. and also product range (for ex-mobile range 10000 to 20000), search on brand name or product name (ex- dell, hp, etc).

[4] System Details : Customer search history will be stored in a database. So, When user logs in again then based on their last search and product likes, products are recommended to them.

[5] Android Part : User register and then Log in. The user is shown category and user selects category, then the product is shown with shop Location, then user marks product for buying. Location Reminder is given when a user enters the particular area, then automatically gets notifications on user’s phone.

SYSTEM ARCHITECTURE DESIGN

INPUT AND OUTPUT BASED ARCHITECTURE DESIGN

DATABASE OF DIFFERENT PRODUCTS → DATA MINING → CLUSTERS OF DIFFERENT VARIETY OF DATA

PREVIOUS LOG-IN SEARCH HISTORY → NAIVE BAYES → RECOMMENDED PRODUCTS ON NEXT SEARCH

Internet connection & location in Android → Trilateration → Location of User in terms of latitude & longitude

Geofencing range & location of User → Haversine → Distance between User & the Shop
OUTCOME OF THE PROJECT
The outcome of our final year project is that it will boost the market of local vendors. As Location of the customer will be detected successfully and then according to geofencing range provides, it will also result in early delivery of the products as compared to existing online shopping systems. Customer will get the appropriate review of the particular product. Our system will provide various recommendations to the customer about the products and their respective offers based on his/her previous search history.

IV. TEST RESULTS

1. LOG-IN PAGE
Customers, Shop users and Admin can log-in into their respective accounts using this first log-in page. This log-in service will take the users to their respective dashboards. the dashboard presents the information according to the type of user i.e. Customers, Shop users or Admin.

This page also provides registration services for a new Customer.

2. ADMIN PAGE
This Admin dashboard page is only for the registered admins of the application. Admin can add / delete / edit the shops. Admin need to put the correct location and address of the shop so that its longitude and latitude values are detected automatically and useful while customer location detection and geofencing range.

In this high value, we check the performance of the model by taking similar comparisons. Such a comparison gives us an accuracy of around 70% for both models which is considered as pretty high.

3. SHOP PAGE
This page provides adding of products from the shop user log-in. The products added are visible to the shop user respectively. Shop user can edit / delete the product details.

4. CUSTOMER PAGE
Customer can view all the products added by all the different shop users. Customer can also like and unlike the products. These likes may be used by another users for viewing the products according to other customers reviews.
5. PRODUCT SEARCH Various products can be searched according to product search or product categories. User can specify price starting and ending range too.

6. PRODUCT DESCRIPTION If a user wants to view the product details, the customer can click on the product and view the specified details of the products.

7. ADD PRODUCTS FROM SHOP LOGIN This page provides adding of products from the shop user log-in.
8. LOCATION DETECTION
When user turns on the location services from android phone, he/she will get the shops sorted according to the geofencing range in the specifies range.

V. CONCLUSION AND POSSIBLE FUTURE WORK
Recommender System are new generation internet tool that help user in navigating through information on the internet and receive information related to their preferences. To overcome the product overload of Internet shoppers, we introduce a recommendation procedure which is more efficient. Using this application we get the product information and also give the notification to the customer through GSM. This system will be used in local market for electronic product recommendation for users.

"VI. REFERENCES"


[9] https://www.google.co.in/#q=trilateration