

Smart Shopping:Location Based An Android Application

¹Lokhande Priyanka V.

²Abhale Priyanka M.

³Kumkar Monali M.

⁴Mundhe Sandhya B.

^{1,2,3&4}MCOERC,Nashik

Abstract

In this paper, we are trying to explain the importance of Location Based system which will reduce our efforts during various tasks like shopping, finding particular address of some shops, Getting and knowing some good offers on the different products. Various applications will introduce which are designs at based on Location which help to done half work for finding particular location. In this paper, A smart shopping: location-based mobile application for Android devices is proposed. The Geoposition of the user's mobile device is utilized to produce location information in shopping application (SAGO). By using this application customer will searching shop in his local area upto 3/4km then GPS system work to displaying all the shop related to that particular area with map. According to product list user can select the shop and visit that shop using application provided map.

Key-Words: offer, android, latitude, longitude, filtering, location

1. Introduction

Now a days, the technology keeps improving drastically, especially on smart phones or mobile devices. Since the last few year, their hardware and software capabilities have been improved fastly. We are able to think that ,the current mobile phones are as strong as computers and also they are able to compete with computers. Like, as they have multi-processor. That means they as fast as a computer. Therefore, the customers requirement will increase day by day.

On-line shopping is mostly preferred by almost all over the world. But previous shopping application are

time consuming. Also from which site on-line shopping is done it is not feasible to customer as distance wise or it is not near to customers location.

To overcome this problem we are going to developed "Location Based Smart Shopping Application". This application is running on android phones. While using this application customer saves their time because customers enter the product which they want to buy then this application gives the list of shops which are nearer to to customers location and in which that product is available. In this application shop owner has to register their product, multiple offers on all that product. Also shop owner add, delete, update, modify the details of products. This application is more smarter than previous shopping application.

2. Literature Survey

The survey had been carried out to find out best algorithm strategy available .We had referred research journals, existing system and analyze the results of same, also take the experts opinion. Literature review is focused on a research questions, trying to identify, appraise, select any synthesize all high quality research evidence and argument relevant to that question.

The Prof. Seema Vanjire, Unmesh Kanchan , Ganesh Shitole, Pradnyesh Patil proposed Location Based Services on Smart Phone through the Android Application, in Jan 2014 which describe the Android Application which is based on LBS.

Gnay Gltekin ,Oguz Bayat proposed Smart Location Based mobile shopping Android Application, in June 2014 which describe the Jsoup which is a java HTML Parser for collecting data from internet resources . By

using Smart Filtering Algorithm, Greedy Search Algorithm, Agglomerative Clustering Algorithm.

Ahmad Jaradat, Noor Azian Mohamad, Ahmad Asadullah, Seyed Ebrahim propose Issue in Location based marketing :review of Literature in Jan 2015 which describe the Marketers and customers issues like, Security Personalization and matching consumers Preferences Customer acceptances of LBM.

Adarsh Borkar, Madhura Ansingkar, Monali Khobragade , Pooja Nashikkar ,Arti Raut Propose Smart Shopping An Android Based Shopping Application , in March 2015 which describe the no need to stand in the queue for a long time in malls just for scanning the item.

Some of the research paper were studied to get knowledge of latest technology and implementation designs.

3. Proposed System

In this system, the user will search the item which he wants to purchase with the help of database provided by this app. After searching of the item a web service will get called which will create a connection with the database of the shop. The web service is a method of communication between two electronics devices over a network .As the connection is established, the user is now connected with the database and information related to that item is provided to him. In this whole procedure the overall time of searching of individual items is saved and thus reducing the time of the shopping. The requirement of this app is-

- User has installed the app
- Shop has Wi-Fi facility

Internet connection

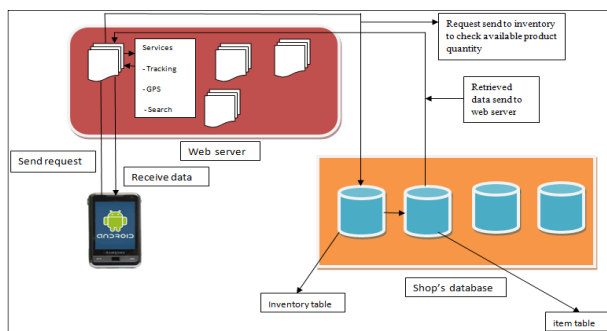


Figure 1. System architecture

A. Android smart phone:

Android is an open source platform founded in October 2003 currently developed by Google. A smart phone is an mobile phone with advanced mobile operating system which feature combine features of a personal computer with other features useful for mobile. Most smart phones can access the internet have a touch screen user interface can run app, music player.

B. Database:

The shop's database is designed using MYSQL. It provides interface with any database can be easily designed. The shop's database consists –

- *Inventory table* - It provides information about the availability of the items, their unique id, product id etc.
- *Item table*- It provides detailed information of each item from its manufacturing date, price, weight, etc.
- *Shop details*- The customer's information will be stored in this table including his address and phone number that will be used at the time of online payment.
- *Store details*- This table will have detail information about the shop's name, its branch and unique id that will be retrieved at the time of scanning of the shop's barcode.
- *Final order table*- This table maintains customer information about his purchases, total cost, session id and all those information that is required to generate a final bill.

C. Web server:

A web server is server which can connect one device to another that is active in the internet and establish communication between them. web server uses common protocol for communication such as HTTP. Web service is required to establish communication between Android device and Shop's database to exchange information.

Steps to perform this operation:

- The client register his account and create login id with password.
- Then send request to the web services.
- The web services send this request to shop database.
- The shop database search the particular item from table and responds to web server with available information.
- Next web services packed the item with related offers and send back to client.

Web Server Services:

1. Navigation
2. Location Tracking
3. GPS

1. **Navigation:** Navigation is the process of monitoring and controlling the movements of craft and mobile devices from one place to other. User can use the Google map to get the particular location or trace the route between any two locations.
2. **Location Tracking:** This is used to trace the individual user location. It contain the data that allow user's route and it also allow to find nearer location.
 - It keeps records on user's current and past location.
 - Notify components when specific user has moved.
3. **GPS:** The Global Positioning System (GPS) is a space based satellite navigation system that provides location and time information anywhere. The result is provided in the form of geographic position within a accurate of 10 to 100 meters.

4. Algorithm

A. Agglomerative algorithm:

The Agglomerative Hierarchical Clustering starts with objects which are set as a cluster, in other words, each object is a cluster at the beginning. Then, the object is added to the closest pair of clusters for each of the iteration if a similar criterion is validated. This algorithm continues until all of the data is merged down as one cluster and this is an agglomerative strategy which is a "bottom up" approach. Traditional hierarchical algorithms use similarity or distance/proximity matrix.

1.The first operation is clustering the similar product using their prices that were mentioned in.

2.The second operation is the normalization process. The output of the first operation in here is the input of the normalization process.

X Price

Normalization (Xprice)=

MaxPrice

In this formula, X_{price} is the input parameter and it is the representative price of the product. "MaxPrice" is the

maximum price which is selected from the product result list.

B. Smart Filtering Algorithm:

The SAGO Android mobile shopping application uses clustering approach to help the Smart Filtering algorithm to search products results to the mobile users easily. This class of algorithms is such that the text is the input and a Processed or filtered version of the text is the output. This is a typical transformation in IR, for example to reduce the size of a text, and/or standardize it to simplify searching.

The most common filtering processing operations are:

- Common words removed using a list of stop words;
- Uppercase letters transformed to lowercase letters;
- Special symbols removed and sequences of multiple spaces reduced to one space;
- Number and dates transformed to a standard format;
- Word stemming (removing suffixes and/or prefixes);
- Automatic keyword extraction
- Word ranking.

C. IR2 Tree

Current systems searches location on the basis of their geometric location from the user location. In this paper we are going to develop an application which will search the nearest location with given keywords.

This algorithm is very efficient to search location with given keywords

5. Conclusion

This paper represent developed mobile shopping android application for mobile users that searches and lists the desired products with location information. The main idea is to get the list and product offer from each local store with in stock information and smartly listed product

list. Jsoup which is a Java HTML Parser for collecting data from internet resources is used in the SAGO mobile shopping Android application.

The aim of this project is to overcoming the drawbacks

of both type of shopping i.e. online and offline, and feels the gap between physical and virtual world.

This application provides safety, security, reliability and also customer can actually feel the quality of the products. Smart phones, that have become an important part of today's life, have reduced all the efforts that are required for shopping using online shopping application.

6. Acknowledgements

We take this opportunity to thank our project guide Prof. Pranjali S. Jadhav for their guidance and providing all the necessary facilities for this paper.

7. References

[1] Gunay Gultekin , Oguz Bayat “*Smart Location-Based Mobile Shopping Android Application* ” Journal of Computer and Communications, 2014, 2, 54-63.

[2] Prof. Seema Vanjire, Unmesh Kanchan, Ganesh Shitole, Pradnyesh Patil , “*Location Based Services on Smart Phone through the Android Application*” ,International Journal of Advanced Research in Computer and Communication Engineering Vol. 3, Issue 1, January 2014.

[3] Adarsh Borkar, Madhura Ansingkar, Monali Khobragade, Pooja Nashikkar, Arti Raut ,”*Smart Shopping- An Android Based Shopping Application* ” International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 4 Issue 3, March 2015 .

[4] Kushal Singhal, Gandhar Rane, (Professor) Amruta Ambre, Nikhil Surve, Jayesh Sonawane , “*Location Based Reminder: An Android Application* ” International Journal of Advanced Research in Computer Science and Software Engineering Research Paper .

[5] Ahmad Jaradat , Noor Azian Mohamad, Ahmad Asadullah, Seyed Ebrahim “*Issues in Location Based Marketing: A Review of Literature* ” International Journal of Scientific and Research Publications, Volume 5, Issue 1, January 2015 ISSN 2250-3153.