Smart Check List: Android Based Mobile Tracking System

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Abstract: “Smart Check list” is an android based shopping cart application. The system is developed targeting two main audiences. The customer and the seller. Customer can detect certain market place and seller can delivering their advertisement in a personalize way. Advertising media is the most powerful means of communication which creates different marketing interests among people. Laptops, smartphones, tablet PCs and other development interactive mode of advertising can be saved now. People make up their advertisements are available to the on their mobile. They will be asked to upload to the web server. Advertisers willing to use this marketing strategy, customer can create an account in the system it will be handled by the Web server for making their advertisements available to general people on their mobile, they are asked to upload details to the web server.

Further concept behind this launch of app is a new trend in the upcoming real world and hope this would market out all features to be integrated in the system provide the ultimate coverage to all people. This would focus out all the features that are already integrated in the apps develop so far with the relevant field and provides much more better option that those prevails at time of speaking with much user experience and surveys that are carried out since, it would be a challengeable effort to develop this app on account of existing technologies, knowledge acquired to a certain extent. The most prominent fact is that some of the new features that are going to be integrated within the system rather than the existing apps. Features such as “Chat On availability” would prove the user ultimate experience to make out the things move, buy with much ease. Since this is a smarter concept which bring out necessary criteria related with digital market, this would make the field of marketing global family. Finally this would mark out all things that are needed to be compact together in dignity. Those impact the development of business at the top level and make the movement monitored with considerable forecast that helps the people to be interacted within it.

Other than above option it is necessary to develop a web application for vendors at each shop, to record all retail and whole sale details of each and every item display on their menu list. From this they will be able to mark out all updated criteria relevant with customer’s aspects.

1. Introduction

This is an android based application that is developed with the ultimate technology. This app “Smart Check List” helps all Walks in life to make their life with much ease. Most probably the visual role of this app is to track the locations of super market places within a certain area using the GPS and provide the customers a good satisfaction. It means if any person travelling in a certain area want to pick up some goods that she/he passing through. Also in this application include such various functions compare with other related applications. Such as this application can identify and store daily human behaviors. Then system will reaction according those human behaviors automatically.

2. Background and Related Works

The purpose and functionality of ALERT application provides the information available to their user when they arrive at certain location. GPS is becoming popular with location positioning system today there is a huge demand of location based applications. A Location based service is an information and entertainment service. These services are accessible with mobile devices through the mobile network and utilizing the ability to make use of geographical position of the mobile device. When we arrive at a
certain location it is tracked by GPS and notify the user through an alarm that activates through it. GPS works in all-weather so you need not to worry of the climate as in other navigating devices and 100% coverage on the planet. It is very easy to integrate into other technologies like cell phone. Those are advantages of this system. Sometimes the GPS may fail due to certain reasons and in that case you need to carry a backup map and directions. This is the disadvantage of this system [1].

The main purpose of location-based services is to provide services to customers based on the knowledge of their locations. Examples of these services include real-time traffic information, digital map services which are delivered to mobile terminals according to user’s location to minimize data transmission, providing dynamic guidance services according to the users’ location and current traffic condition; requesting the nearest business or service (e.g., the nearest restaurant or cinema) and location based advertising. Unfortunately the current state-of-the-art location based services are rigid as they cannot make good use of information. Services are provided at inappropriate time without considering user’s intention and changing environment [2].

Vehicle tracking system is to provide security for all vehicles. Main objective of the accident alert system is to rescue people in case of accidents. This improved vehicle safety. The last such as GPS very useful nowadays this system can observe and follow the owner of the vehicle and finds the movement of the vehicle and the vehicle passes activities. These systems are used for operational functions such as routing, security, transport and collection of edge information. They are also used for fire alarm in large vehicles such as buses, trains, etc., because the vehicle now contains a large number of people and sending warning of accident fire, it can save many lives. A fault of this system is that this would perform inaccurate results in maintenance, due to its complexity [3].

The main objective of this system is tracking location. The end user can find his friends location through this service. The location is tracked using GPS and display the coordinates. The main intention of this application is to help the user to reach his destination by finding locations through GPS. The location can be tracked based on the radius maintained by the administrator. Is an example of such a service that displays on a map dots that represent your friend’s or colleague’s location, allowing you to find each other even in crowded places. It is helpful to find your friend or family in any shopping mall, or movies theater. If someone is using smart phone and installed this apps then there privacy may lost. It is the disadvantage of this system [4].

The concept of tracking and monitoring using GPS technologies is far from novel. Most ethical issues are connected to the control aspect of GPS tracking, as it imposes an intrusive method of supervision. The implementation of a mobile indoor GPS application that delivers maps and linked database information to indoor wireless devices such as mobile phones and PDAs. This can help in studying movement patterns among humans with different backgrounds. Keeping the children safe when children are given mobile phones then tracking becomes one way by which the parent can keep tabs on their where about. Law enforcement becomes more difficult is the disadvantage of this system [5].

This system aims to provide a low-cost means of monitoring a vehicle's performance and tracking by communicating the obtained data to a mobile device via Bluetooth. Then the results can be viewed by the user to monitor fuel consumption and other vital vehicle electromechanical parameters. Data can also be sent to the vehicle's maintenance department which may be used to detect and predict faults in the vehicle.

This is done by collecting live readings from the engine control unit utilizing the vehicles built in on-board diagnostics system. An electronic hardware unit is built to carry-out the interface between the vehicle's OBD system and a Bluetooth module, which in part communicates with an Android-based mobile device. The mobile device is capable of transmitting data to a server using cellular internet connection [6].

A vehicle fleet management information system identifies location and direction of movement of each vehicle in a fleet in real-time, and automatically reports such information, as well as status of predetermined events in which the vehicle is engaged, directly to the fleet manager. Each fleet vehicle has an assigned time slot to transmit its reporting information over a communications network without interfering with transmissions from other vehicles in their own respective time slots. A timing control phase lock loop provides precise time synchronization for timing corrections from a global positioning system based time reference. A dual band full-duplex interface of the network has TDMA on one-half and broadcast on the other half. Microprocessor time processing units in components of the network perform precise clock synchronization. Space diversity performed on received vehicle transmitted messages avoids data corruption. Different vehicles have different periodic transmission intervals, by dynamically allocating the slots for various update rates. Auxiliary reporting
slots enable prompt reporting of important data by the respective vehicle transmitters independent of the slower periodic transmission intervals [7].

3. Methodology

Author names and affiliations are to be centered beneath the title and printed in Times 12-point, non-boldface type. Multiple authors may be shown in a two- or three-column format, with their affiliations below their respective names. Affiliations are centered below each author name, italicized, not bold. Include e-mail addresses if possible. Follow the author information by two blank lines before main text. “Smart Check List” is overall project that is based on modern strategies (GPS) structured with a fully functioned web application on market base and android based application for the user’s perspective. This will be launched and implemented according to all phases of system development life cycle where it beholds all functions that circular within the system applicable to modern concepts. The way this is going to be active according to the above system development life cycle is discussed below with description ally

Planning

Under planning it was decided carry out a feasibility studying to developed whether project is financially worthwhile and technically feasible parts were considered on this stage. Economy feasibility was conducted to make save that the solutions putting forth would be cost effective checked out whether handlers are make their availability and durability. Operational feasibility was conducted to ensure that proposed solutions are currently involved. Sought the best IT officer to be the admin of the system to avoid regular problems that cause from the system without much of a difficulty. Technical feasibility was carried out to found out that devices meet the requirements that will be implemented, both hardware and software. Listed out necessary upgrades that would be necessary in after the implementation.

Requirements gathering

Mainly collected information systems that are capable with equality to this application. Tried to identify the functional requirements in order to fully understand how the system is functioning. Upon this comparison on study were engage with how activities should be engaged, made some surveys with people interest this project in order to understand with what type of function should be implemented with the application. At some time else found out what were the requirement in order to consider a computer and system. After being gathered enough information there started to analyze the system upon some comparisons find out possibilities to make work functions more accurate, faster, efficient and simple. After that decided to continue further analyzing problems and solutions. Under the primary data gathering questioners use in this research. Secondary data gathering that we are use literature review.

Design

After above procedure, sought solutions to each problem using various sources. Solutions sought were made sure that are suitable and affordable with technologies. At the same time consider the reliability of such technologies and equipment involved with it. After the solution design, break the solutions into smaller component. Based on smaller problem, it was easy to design GUI that allows users to use a program that solve existing problems. And this application is based on “PHONE GAP” frame work.

![Architecture Diagram](image)

Figure 1. – Architecture Diagram

Implementation

Instantly checked out a model of the entire system using high level diagram. There for solutions designed was brake down in to several subsystems. The subsystems are bracken down show that they can be easily developed with one and ever member parallel. Each functions assigned to each member would consist of the entire development procedure. It includes the designing, analyzing, coding and unit testing. After all members have completed all modules, then it would be easy to start interleaving them in to a single system and implement with high accordence.

Testing

After modules are developed by each member, it will be individually tested. This will make sure that the requested purpose of the module is being fulfilled.
Thereafter, the modules will be integrated to a single system and a complete system testing will be performed. During the system testing, certain tests such as acceptance testing, stress testing and security testing will be performed to make sure that the module developed separately are working smoothly as expected.

4. Results

The entire system is being implemented according to the above methodology. We have divided this system in two major part, user and advertiser. We tested this system on Android platform for user part and created a web site which the advertiser would be accessing.

Initially the task performed by advertisers and the interfaces provided to them. Advertisers are also provided with mobile application, from which they can register their services and update as required will be explained. As of now the web server apache tomcat is installed and stored all necessary web files in local host. The following screenshots was taken when the worker performed tests on this system.

Figure 2
The vendor can fill the Personal details in this form.

Figure 3
The vendor can fill the Business details in this Form. After that he can go to personal details form

Figure 4
Users can fill his details in above form. It can select type as Vendor or Customer.

Figure 5
The vendor can fill the Personal details in this form.

Figure 6
This form contains vendor added promotion and goods. Customer can select what he want and see the details of goods.

Figure 7
Customer can see the vendors profile details in this form.
5. Discussion

The discussion part is mainly focused on discussing problems faced during the project design and implementation and how those issues are solved. This section also describes how the successful achievements are gained. Most of the software products consist of different kind of bugs. It is the members’ responsibility to minimize the number of bugs before releasing the product to the end user.

There are:

- GPS not accurate as we think
- Estimote Beacon is more expensive to use in our system

This research study was carried out to provide solutions to overcome the problems students face while studying. Since the research project was a group project the key characteristic everyone should possess is the ability to work as a team. The leader should be able to drive everyone in the correct path giving equal opportunities to everyone in defending their ideas. At the beginning each group member came up with different research topics and ideas. Then looked for innovative research ideas, which have the greatest potential for making a real difference to people lives and work completed on time. After discussing with project supervisor project team determined to identify the suitable research study. The research team discussed the problems faced by drivers and came up with the solution and those solutions were.

6. Conclusion

The team have successfully implemented a suitable solution for the research problems mentioned in this dissertation. In this study the authors have proposed mobile applications which developed using GPS, mobile data and display nearby shop’s advertisement. As mentioned above in this document, through the literature survey, we have found several problems which should be addressed through our project. They are,

- How to get nearby shop using GPS.
- Importance of customer feedback.
- Which notification type should use in app.
- Track the relevant vendor.

This implemented application presented an efficient and affordable method for ease customer and vendor daily works. Also

- Compare similar item price in shops.
- Easily advertising.
- Improve customer vendor relationship.

An important assumption we should make is that the accuracy of the GPS because GPS not giving the correct location efficiently. And we have to handle simultaneous message smoothly. Also comparing the price and get cheapest price we had to use algorithm. So the Limitations that can be occur in the system, such as:

- Accuracy of GPS
- Mobile Data issues
- Inappropriate Customer feedback
- Customer ratings
- Vendor add incorrect product

In order to overcome with the limitations which described above, so with the use of the GPS techniques, the system can identify the daily needs, that relevant to previous shopping list. And give admin permission to customer feedback, rating and vendor updating product.

7. Future Works

We implemented an information system supported by a Smart Check list for the mobile marketing sector and proposed a suitable business model to support this service. We defined an “open” distributed architecture to promote service reliability and fault tolerance. Our implementation was based on broadly accepted, standards-based technologies. We elected to put the complexity on the network side rather than the client device, where we opted for a simple and easy to use user-interface. For our future work we are considering the development of an intelligent agent, which on behalf of the user, would select automatically the most appropriate Super Market located near the user, based on criteria like distance, total purchase cost, user cost or distance aversion, etc. Further work should also be done towards improved business models for deploying location based services for advertising.
In this work, as of now the worker has provided textual notifications for contents to the users. But, for advertisements, if this work can be extended to include audio, video and map based notifications. Any user requesting a service desires to get the best possible service provider name in his list at the top. Lastly, the worker have tested the results over various mobile phones having Android Operating System (from version-2.1 to 4.0). Next the worker is considering developing a generic system, by which any Mobile Phone user can use these services. Mobile phone operating systems which are considered for making generic implementation are Symbian OS for Nokia phones, iOS for Apple I -Phones, BlackBerry OS for BlackBerry smart phones and Windows OS for Nokia or Samsung Windows smart phone.

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8. References


