Research Paper Information Technology

Location Based Service

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ABSTRACT

A location-based service (LBS) is an information and entertainment application, accessible from mobile devices through the mobile network and utilizing the ability to make use of the geographical position of the mobile device. LBS application can be used in a variety of contexts, such as health, work, personal life, etc. LBS application includes services based on the current location of the user. LBS can include mobile commerce when taking the form of advertising directed at customers based on their current location. LBS is an information service and has large number of uses in social networking today as an entertainment service, which is accessible through mobile device by using the mobile network and uses the geographical information in which the mobile device is located.

KEYWORDS

INTRODUCTION

Location-based service (LBS) is a *symbian* mobile application. The application provides information based on the current location of the user. There are two types of methods for tracking the location of the user i.e. one is through *GPS module* installed on the mobile phones and other is *GSM localization*, finding location of mobile device in relation to its cell site. In the proposed system we would be using second option of locating i.e. through GSM cell sites also know as GSM broad cast message.

Various services like finding the current location of the person or object, information about the place, friend finder and advertising are its main features. The information will be provided strictly on the bases of the current location of the user. Incase no outlet is present in the current location of the user it will not display any result. However a separate search option is available in the menu in case the user wants to search information about any other place. Advertising is a service which can either be paid or unpaid. Paid services are the ones for which a user pays the administrator or developer to advertise his commodity or item. For displaying advertisements the clients should register and pay to the application site and select their preferred location. Friend finder is another attractive feature, for this the two users (friends) must be connected to each other via the application and must be in each other's contact list.

FEATURES OF THE SYSTEM

Current Location.
Whenever a user opens the application on mobile device the user will be welcomed by a note displaying their current location. This will be homepage of application.

Advertising.
On the homepage the advertisement will be displayed depending upon the user location. For displaying advertisements the clients should register and pay to the site and select their preferred location.

Search Option and Menu bar.
There will be a search option to search for available services and a menu bar where user will be able to login into the site and search and access the available listed services.

Important Location.
Depending upon the user location important locations i.e. historical monuments or favorite public parks and places will be listed and shown to user under a menu.

Friend Finder.
the user needs to login for this feature, the username will be mobile number. and password will be user selective. The user also needs to update a friends list indicating friends mobile number and name. Whenever a friend in nearby area is logged in into the site, they will be indicated as friends in nearby area in each other's list.

ARCHITECTURE

System Architecture

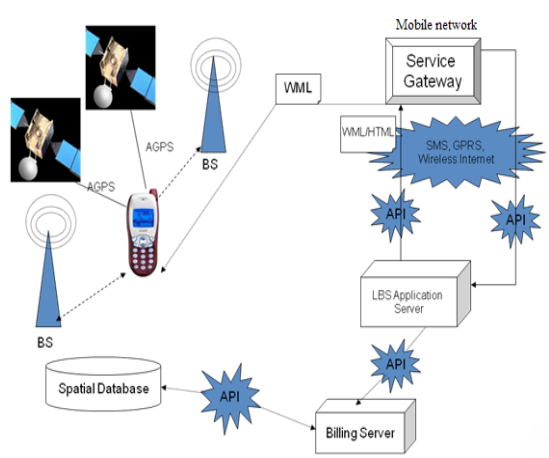

Figure 1. System architecture of LBS

Base station.
In our proposed system the base station (BS) gives us the current location in which the mobile device is present. A base station basically helps in controlling and handling the mobile traffic and signaling. Whenever the user requests a service the request is broadcasted through a base station to a LBS application server via service gateway.

Wireless Markup Language (WML).
WML is based on XML. It is a markup language intended for devices that implement the Wireless Application Protocol (WAP) specification, such as mobile phones. It provides navigational support, data input, hyperlinks, image and text presentation, and forms, much like Hyper Text Markup Language (HTML).

Service Gateway.
Service gateway is nothing but mobile network provider, it changes according to the user choice.

Spatial Database.
In our proposed system the data is stored according to the geographical information i.e. spatial information.

LBS Application Server.
The application server receives request from the user processes it and provides suitable service to the user.

Operational Architecture

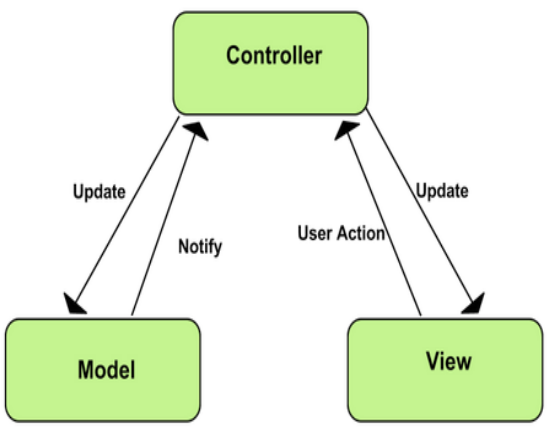

Figure 2. MVC Architecture

In our proposed system we are going to use Model View Controller (MVC) architecture for the development of the system.

Model.
The model basically takes care of the back-end of the system i.e. it includes the database. Spatial database is used in our proposed system.

View.
The view takes care of the front-end of the system i.e. it includes of the styling and designing of the system. It consists of the GUI part of the proposed system. The entire look and feel of the application is included in the view.

Controller.
The controller basically consists of the business logic of the proposed system i.e. it connects the model and the view. The controller processes the request received from user fetches the information from the model and makes it available to the user at the view.

RESULTS AND ANALYSIS
LBS being a mobile application includes registration, login and it's services. After downloading the application the user needs to register from his/her mobile device. The registered mobile number will then be the user name by default and the password will be user's choice. Once the user is registered, on opening the application his/her respective location will be displayed on the device. After logging in into the account a paid advertisement will be displayed on the device screen and the user can select the desired service of his/her choice from the menu bar. According to the option selected the user request will be fulfilled. (Following is one of the screen shots showing advertisement and menu bar.)

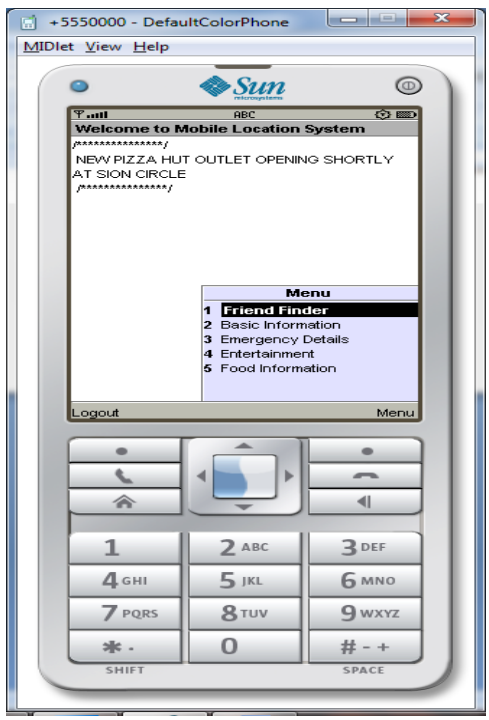

Figure 3. Advertisement and menu bar

CONCLUSIONS
In this paper, Location Based Service (LBS) application is implemented using GSM technology. This application is developed using Sun Java Wireless Toolkit-2.5 and MySQL Server. Thus using the GPS module the user is informed about his/her location and the further services are provided according to the user's choice. Using MYSQL the query handling is made easy at the administrator side. The front end (GUI) is user friendly and thus the application is easy to understand and use. Due to the use of easily understandable open source software's the application can be further extended to become a social networking site as well thus increasing the market value.

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