

Fast Cab

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Abstract– With a view to improve taxi calling services nowadays, we propose to create a brand new smart phone application, ‘FAST CAB’, which can be viewed as an advanced version of those existing taxi calling applications. Current taxi calling apps provide users with some phone numbers for requesting taxi services and users have to dial in order to contact the service center. Instead of dialing the service center, FAST CAB helps users deliver their requests directly to the nearest drivers through Internet. It greatly saves the trouble calling to taxi drivers and waiting reply from them.

Keywords- Dalvik, OpenGL, Web services, Fast Cab, SQLite

I. INTRODUCTION

FAST CAB is a mobile application that helps customers to deliver taxi-calling requests to taxi drivers through the Internet

FAST CAB includes a registration system. Users must register before use and they can register as a taxi driver or a customer. A customer can make request by specifying starting location, destination and arrival time. The request is then sent to nearby registered taxi drivers. Those drivers can choose to accept or deny the request. If multiple drivers accepted the request, the customer can choose whichever driver he/she prefers. Lastly, a confirmation message will be sent to the chosen driver.

Users can use their mobile phone a map will be shown for users to pinpoint the starting location and destination when they tap the “From” and “To” box in the detail specification page.

Customers can specify the details including starting point, destination, and arrival time. User can also select the arrival time by default the arrival time will be set to current time. The request will be accepted by the taxi drivers, then the user can choose one to confirm the deal. User can also bookmark the taxi they like. The favorite taxi drivers are listed in one group and then the customers can select any one of the taxi drivers to make the request. They can also edit or delete them. Now the users can choose to send request to their bookmarked taxis.

The drivers can view the orders from the nearby customers. They can choose any one of the orders. Newly detected orders will be automatically shown. Drivers can order their request by distance between their current location and their starting location, arrival time or driving distance. Drivers can also view nearby orders on a map. Finally the driver will know that the order is confirmed.

A. Need for Fast Cab

Why fast cab is needed? The fast cab provides several features that make one's life simpler and also acts as a guide in unknown places some of the main features are:

1) Money saver

To book a taxi we need to call the taxi driver and check out whether the taxi driver is busy or not, if he is not busy and wishes to provide the services to the customer then it's fine but if the driver is busy then he has to call the other taxi driver and find out whether he is busy or not. But Fast cab sends the request to multiple taxi drivers at a time, as fast cab will use data package to communicate with each other it saves call charges.

2) Time saver

To find a taxi in any metropolitan city like Bengaluru or Delhi if we need a taxi we need to go down the street and find a taxi for ourselves. This wastes our time. Since Fast cab sends request to all the nearby taxi driver at once it saves the time of calling each and every taxi driver.

3) User friendly

There are other applications like Fast cab but it's not as user friendly as Fast cab. The user interface of Fast Cab is much more user friendlier than any other application.

II. RELATED WORKS

Currently there are different applications developed by different organizations that provide taxi booking services. Some of them are listed below:

A. Taxi express

It is a mobile application running on iOS using which customer can send taxi request to nearby taxi [2]. Here user can register and login to send a request to the taxi. This request will be sent to the nearby taxi driver.

B. Togo cab

To Go Cabs is an Android Phone Cab Reservation application. The main objective of the project is to provide an easy to use and handy mobile application to the android users which enables them to reserve a cab from one location to any location in the state of Kansas [3]. The users can keep track of their reservations, the amount they have spent for each ride and the cab's current status. Additionally, the user can also see where he/she is currently located, see a route of the cab from the source to the destination point, set reminders for a future pickup, send confirmation details to his email id and send an SMS to his mobile phone.

III. THEORETICAL BACKGROUND

Android, the world's most popular mobile platform powers millions of phones, tablets, and other devices and brings the power of Google and the web into your hands. With an amazingly fast browser, cloud sync, multi-tasking, easy connect & share, and the latest Google apps (and thousands of other apps available on Google Play) your Android powered device is beyond smartEnter Android, which is a potential game-changer for the mobile development community. An innovative and open platform, Android is well positioned to address the growing needs of the Smartphone and Mobile Marketplace. Open Handset Alliance, is a consortium of several companies which include Google, HTC, Intel, Motorola, Qualcomm, T-Mobile, Sprint Nextel and NVIDIA, etc. These companies which aim to develop technologies that will significantly lower the cost of developing and distributing mobile devices and services. The Android platform is the first step in this direction a fully integrated mobile "software 4stack" that consists of an operating system, middleware, user-friendly interface and applications.

A. Android Architecture

An Android system is a stack of software components. At the bottom of the stack is Linux (kernel version 2.6) s shown in fig 1. This provides basic system functionality like process and memory management and security. Also, the kernel handles all the things such as network interface and a vast



Fig. 1: android system stack

array of device drivers, which make it easy to interface to peripheral hardware. On top of Linux is a set of libraries, including bionic (the Google libc), media support for audio and video, graphics (OpenGL ES), support for browsers (WebKit), and a lightweight database, SQLite. A key component of an Android system[1] is the runtime engine the Dalvik Virtual Machine (VM). It was designed specifically for

Android and is optimized in two ways. It is designed to be instantiated multiple times – each application has its own private copy running in a Linux process. The Dalvik VM makes full use of Linux for memory management and multi-threading, which is intrinsic in the Java language. The Application Framework provides many higher level services to applications in the form of Java classes. This will vary in its facilities from one implementation to another.

IV. IMPLEMENTATION OF PROPOSED SYSTEM

The fast cab uses two application one customer and other is driver application the both the application can communicate to each other using cellular network, SQL data base is used as a data base to save the details about the customers and the drivers information the tomcat server is used as the server that communicate with the client application using web services, the architectural design is shown in the fig 2.

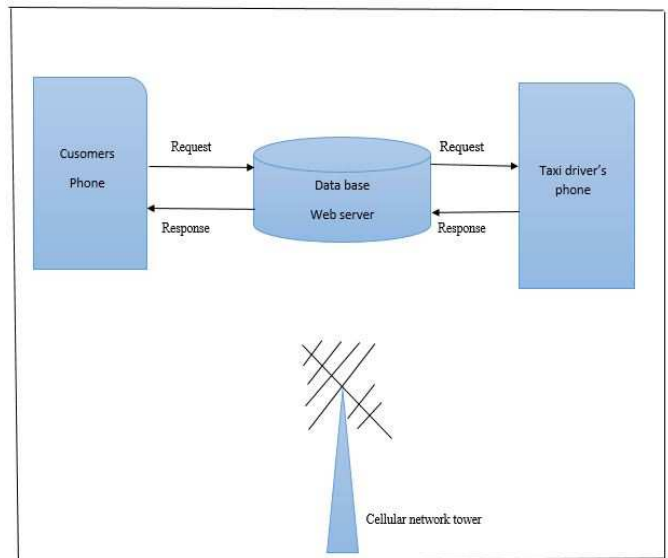


Fig 2. Architectural design

A. Fast cab customer application

It's an android application running on android operating system. Here, initially the customer has to register in to the application using his name, password, phone number, email and address once the registration is done customer can login to FASTCAB service using his phone number and password. After the successful login customer can book the cab by entering the from and to destination and also the arrival time. A map will be shown to pin point the location and this request will be sent to the nearby taxi drivers. After the response from the taxi driver, now the customer can choose any of the taxi driver and customer can also view the details of the taxi driver like his name, DL number, phone number and address. And finally can accept the response.

B. Driver application

Here, initially the driver has to register into the application using his name password, phone number, email

and address. Once the registration is done driver can login to the FAST CAB service using his phone number and password. After the successful login driver gets notification of the nearby taxis and then he can choose to accept or deny the request, he can also view the direction of the destination. The acceptance of the request by the driver will be sent to the customer where the customer can again accept this request. When the customer accepts this request a message will be sent to that particular driver informing him that customer is ready for his taxi.

C. Web Services

Here we use web services to communicate between the client and the server as shown in Fig 2.

Web service is a method of communication between two electronic devices over a networks. It uses SOAP protocol, originally defined as Simple Object Access Protocol, is a protocol specification for exchanging structured information in the implementation of web services in computer networks. It relies on XML Information Set for its message format, and usually relies on other application layer protocols, most notably Hypertext Transfer Protocol (HTTP) or Simple Mail Transfer Protocol (SMTP), for message negotiation and transmission.



Fig3. Web services

6. TEST RESULTS

We have conducted a sample survey in Sullia town where we have 10 registered auto drivers and 30 registered Customers. As a result, the customers found it easy to book an auto and even the auto drivers found an increase in their income compared to other auto drivers. The test have been conducted for two weeks. First week without the fast cab application and second week with a fast cab application. The Fig 5 shows decrease in the time needed to find a taxi with respect to Fig 4.

Fig 4. Data collected from a survey without fast cab service.

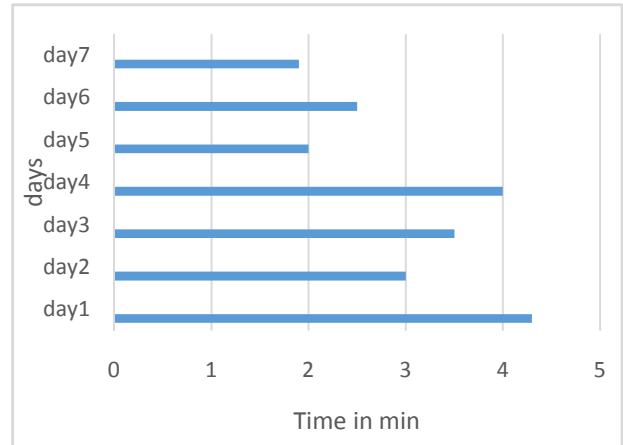


Fig 5. Data collected from a survey using fast cab service

7. CONCLUSION

Advanced technologies of the 21th century, such as the internet and mobile communication, have made human lives easier. The combination of these two technologies yields wireless multimedia networks, the extension of which are Android Smartphones. Using Android Smartphone application, we can make the communication between the taxi driver and the customer easier. By introducing this application to the market, people will find it easier to get a taxi as fast as possible through which he can save his time. We would like to emphasize on the point that this application is a user friendly application.

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