

Smart Traffic App Using Android Phone

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Abstract: *Traffic is more serious problem as continually increment of the city vehicles, the problems of traffic accidents, traffic offense and congestion in city become more and more serious. However, the number of the traffic police is limited, so the former ways of working, such as traffic patrol and working at regular places, cannot effectively solve the problems above any more. As the analysis large working scale and mobility features of the traffic police working, the research designed and realized the mobile office system, which will be learn traffic jam situation and solve the traffic jam problem. The system can collated the information of traffic like traffic accident and traffic offense which could greatly improve the work efficiency of the traffic police.*

Introduction

With the development of the construction of traffic road and the popularity of the vehicles, the traffic offenses which are related with road and vehicles are increasing year by year. However, the work of the traffic police has its own specialty, such as the large communication request, large number of traffic police, large working scale, and mobility characteristic and so on. These characteristics make they need to do information search and deal with it in the moving condition and the non-office environment. In this situation, the traditional working way of the special network can't support and suit the requirement of dealing with the traffic problems by large number of traffic police, and therefore the traffic police are urgent to require a mobile office system which is not only carried and used conveniently but also can solve the practical problems. It can be made use of checking the driving license, searching and collecting the data information of the related people and vehicles in the working spot. The Android system which provides flexible display and control functions of Google Map, can support development of the GPS or the Internet locating [1]. Based on the characteristics of the Android system, the research designed and realized the traffic police mobile office system which can offer the traffic police a moving office. It can transmit real-time traffic information fast, meet the

information requirement of the working of traffic police and provide an information source for the traffic management and control. It improved the scientific ness and efficiency of the traffic management and service.

The Android system which was launched by Google in November of year 2007 is an intelligent mobile phone system. It is open system architecture [3]. After being launched by good developing and used to debugging environment and same will be provide expandable experience to user. There are multimedia supporting system and graphic system also rich web browser. Google, it is developed by Google and Open Handset Alliance so it can decrease the development cost of the mobile devices. The Android system has five characteristics: 1.Open, building standard and open mobile phone software system;2.Shared Data and Inter process Communication, applications can be used by other applications; 3. All Applications Are Created Equal, applications on the mobile device can be replaced and extended;4. Applications can be easily embedded into internet, applications can be easily embedded in HTML□JavaScript and CSS; 5. Applications can parallel run, Android offers complete multitask environment, so applications can parallel run in it. The architecture of the Android system contains four parts:

They are applications, application framework, system runtime and libraries, linux kernel [4]. Android relies on Linux version 2.6 for core system services such as security, memory management, process management, network stack, and driver model. The system runtime and libraries includes a set of C/C++ libraries used by various components of the Android system [5]. These capabilities are exposed to developers through the Android application framework. The application framework offers developers the ability to build extremely rich and innovative applications. Developers are free to take advantage of the device hardware. The applications run in the Android runtime. They include native and other applications which use the classes and services in the application framework.

Related Work

A. The Design Rule of the System:

. Practicality

The design of system convenient for operate to traffic police as the design of system meets the practically requirements as much as possible. Moreover it must suit the working way and it can make the system be used in the practical work of the traffic police.

. Extensibility

In the development process of the system, considering the future improving requirement of the functions, the design uses the model of MVC which can make the system modularization and be extended easily.

. Reliability

In the development process of system there must be more test work. And we emulate the working of the system by android emulator. All of these ensure that system can run better.

B. The Design Goal of the System:

Making full use of the map data of the internet, the system can provide real-time traffic status information for the traffic police working, help the traffic police deal with the vehicle congestion pertinently and search the person information in real time. Finally, it can realize working in any possible laces and improve the efficiency of the traffic work.

C. General design of system:

The general architecture of the system includes the user interface, the logic processing and system data. The user interface is mainly for the displaying of the system and help the user complete the operation of the system. The logic processing is focus on the professional work of the traffic police and system settings which ensure the working flow successful. The system data provides the necessary data of the professional work.

D. Function Design of the system:

The function modules of the system contains login modules, information search module, working in site module and setting modules.

Proposed System

The system which will be designed to develop an application which is used to solve the traffic problems. This can be used for checking the driving license, searching and collecting the data information of the related people and vehicles.

In the working spot. The traffic offenses which are related with road and vehicles are increasing year by year with the development of the construction of traffic road and the popularity of the vehicles.

A. System Working:

When the traffic police catch an offender, he/she logs onto the device by entering his/her username, password. He/she then enters the vehicle information and license details He/she then enters the vehicle information and License details. The device displays a record of offender history committed by the commuter and basic details of the vehicle as well as the name and address of the license holder. The officer registers the new offender. On the basis of the history, the traffic Officer will penalize the offender. The penalty for a first offender differs from the Penalty incurred in case of repeated

Offenders. When a fourth offender is registered under a commuter's name, his/her license is suspended. Once the license is suspended, the user in order to unblock the license can be charged more i.e. 10 times the actual cost of the offender charge and it would be a lesson for the offender to not to do any offender again. The officers has no need to tally their revenue by maintaining the receipts as the entry of the offender goes from android device to the server and so server end has the facility to analyses the revenue from the officers in the entire year When the officers and the vehicle parked in a no parking zone, the provision is provided that the officers will capture the images of the vehicle being actually parked in no parking zone as a proof and make an entry in the application regarding the location where the vehicle is being towed along with vehicle number. As the officer makes the entry to the server, and when a user is supposed to search his/her towed vehicle, he/she has to type the vehicle number and get the towed vehicle information i.e. the location where it is actually towed and thereby get rid of searching the vehicle here and there. The user if did not and the towed vehicle address ,there are major chances that the vehicle has been stolen and so immediately he/she can lodge the complaint application from the pp itself so as to make the officers aware that a vehicle of so and so number has been stolen from so and so location and this helps the officers to catch the thieves with ease due to immediate intimation Once the stolen complaint is registered,

the user can track the status whether the vehicle is being found or not or whether it's still under process.

Result

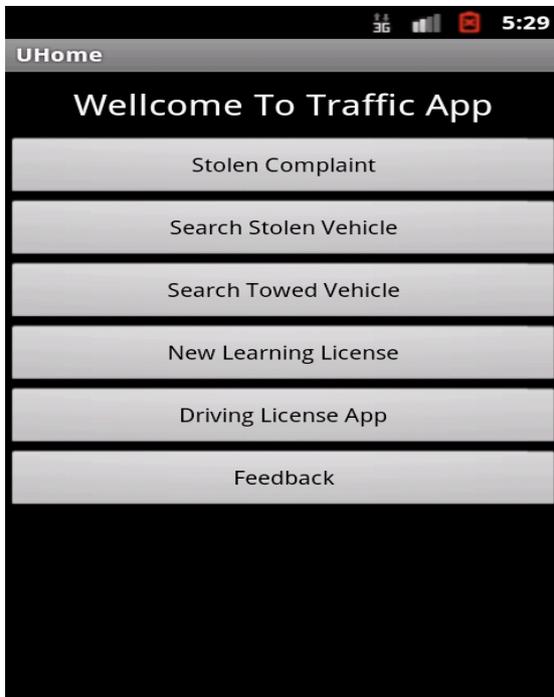


Figure 1. Home Page

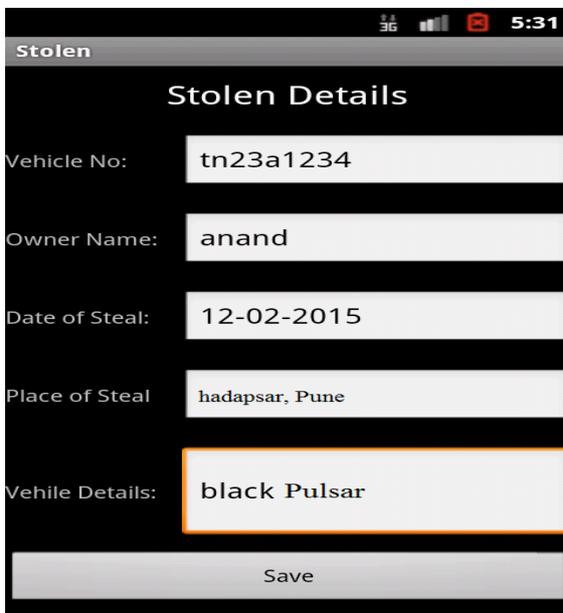


Figure 2. Passenger Complaint

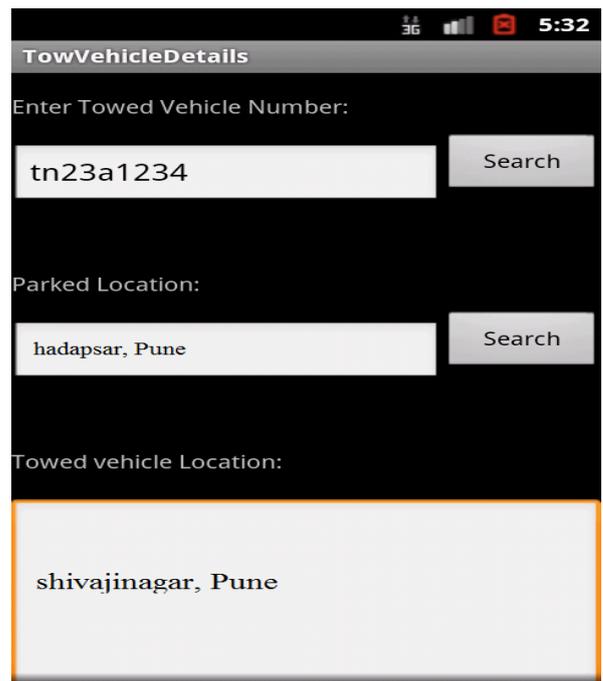


Figure 3. Towed Vehicle

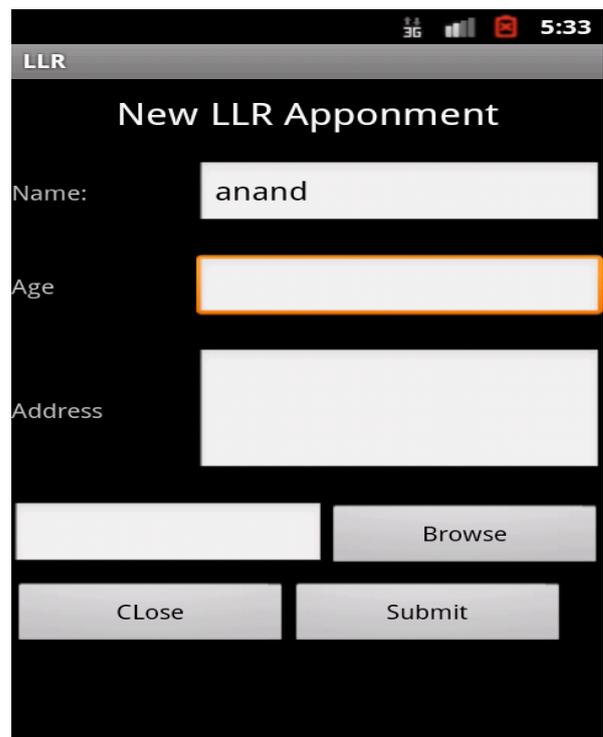


Figure 4. Application for Learning Licence

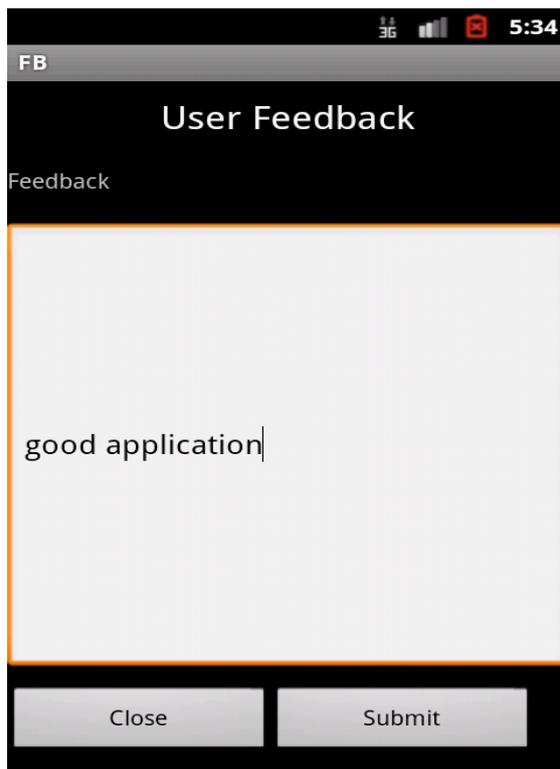


Figure 5. User Feedback

Conclusion

With the improvement of the condition of the wireless network, mobile devices and so on, the applications of the traffic information have become more and more popular from search of the mobile data to dealing with mobile professional work. Through analyzing the system architecture, the research realized the functions of the location and searching real-time traffic information by making use of the Google Map data, and by using the Google Weather API and the internet weather XML, it realized the functions of the searching real-time weather information and weather forecast. Moreover, it realized the functions of the data importing, searching and modifying through the SQLite database. The traffic police mobile office system based on Android can easily realize the communicating between traffic police working information and the traffic information, which offers a full temporal and spatial office and improves the efficiency of the working of the traffic police. It also can get the real-time traffic information, which meets the information requirement of the working and provides an information source for managing and easing the traffic, improving the efficiency of the traffic management and service. Finally, it realizes the communication between traffic police and other kinds of police, which is very important for the security of the society.

References

- [1] Y. Zhang, "Design web map service application for android mobile phone," *Nanchang University*, 2010, pp.23-25.
- [2] X. Shu, "Mobile web map service design based on android," *Dalian Maritime University*, 2009, pp.11-15.
- [3] Y. Jin and S. Yao, "The introduction and practice of the Google Android development," *Beijing: POSTS & TELECOM PRESS*, 2009, pp.57-58.
- [4] Y. Li, "Police service retrieval system based on android mobile operating system platform," *Nanchang University*, 2009, pp.8-10.
- [5] Google <http://developer.android.com/reference/classes.html>. Accessed at December 7, 2010.
- [6] T. Zhu and H. Li, "The Synthesis of the Application Software's Based on Android Operating System," *Computer & Telecommunication*. Vol.1, 2011, pp. 42-43.
- [7] R. Meier, "Professional android application developments," *Indianapolis: Wiley Publishing, Inc.* 2009, pp.142-143.
- [8] J. Zhao, "Design and realization of the mobile location service based on android platform," *Modern Business Trade Industry*, vol.20 (20), 2010, pp.271-272.
- [9] F. Yang, "Android Unleashed," Beijing: China Machine press, 2010, pp.339-340.
- [10] R. Li, "Analysis of Android-based XML Parsing Technology," *Era*, vol 12, 2010, pp.31-33.