

PERSONALISATION OF USER PROFILES IN SMART PHONES BASED ON GPS TECHNOLOGY (ANDROID)

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Abstract— Impact of a mobile user profile to a totally un-related environment can be problematic or even embarrassing. Effect on users due to this might be serious. Students are one of the major classes of people facing this particular problem. Solution to such a problem can be found in Global positioning System Technology. Using this, we would be able to manipulate the user profile of a user based on the physical location of the user. The user would have to set a particular location under a related profile and his work is done. Rest all is left to the technology. With the implementation of this we would extend the usage of GPS even to one of the most basic features of any wireless communication device

I. INTRODUCTION

Communication is of utmost importance in today's world. All of us live with and through it. Smart phones are becoming like a mandatory part of one's life. Operating and managing a smart phone is not as easy as it seems.

We treat our phone as the lifeline to our office. We're never out of touch as long as we've got it with us. We rely on it most for phone calls and email which means that standard features like voicemail, speed dialing, call waiting, conference calling and call forwarding are a given. We'll also need an easy to use keyboard that's small enough to pack away smartly but big enough to accommodate even the largest of fingers. Blackberry

A Smartphone (or smart phone) is a mobile phone with more advanced computing capability and connectivity than basic feature phones. Smartphone's typically include the features of a phone with those of another popular consumer device, such as a personal digital assistant, a media player, a digital camera, and/or a GPS navigation unit.

People have created a set of user profiles that capture many of the more popular ways that Smartphone get used. Each profile includes a set of hardware recommendations that are designed to insure that the phone you ultimately select is a good match for the way you intend to use it.

Manipulation of user profiles has become one of the problems that everybody would face. In order to eradicate this obstacle, we have planned to automate the profile changer rather than leave it to the hands of the user.

II. PROBLEM FORMULATION

“Impact of an user profile to a totally un-related environment can be problematic or even embarrassing. Effect on users due to this might be serious. Students are one of the major class of people facing this particular problem.” Solution to such a problem can be found in Global

positioning System Technology. Using this, we would be able to manipulate the user profile of a user based on the physical location of the user.

The user would have to set a particular location under a related profile and his work is done. Rest all is left to the technology. With the implementation of this we would extend the usage of GPS even to one of the most basic features of any wireless communication device.

III. PROPOSED FEATURES

The basic working of application is to automate the user profiles with reduced battery consumption and provide convenience to the user.

In addition to this we are adding certain additional features such as :

- Parental Control
- Automatic voice recorder based on the location
- Neighborhood Info
- Flexibility through WLAN, GPRS/EDGE.

IV. ANALYSIS OF THE PROBLEM

The Design Modules are

1. User Installs and launches application.
2. User sets the required profile at the desired location.
3. Data gets stored in the app database.
4. Specific Implementation of the given choice.

V. DESIGN MODULES

A. User installs and launches the Application

Initially user downloads and installs the application. Upon launching, a background process periodically fetches the coordinates of the current location. Global positioning system is used to fetch the coordinates. The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. GPS satellites transmit data continuously which contains their current time and position. A GPS receiver listens to multiple satellites and solves equations to determine the exact position of the receiver and its deviation from true time. When the application launch is confirmed, the GPS tracker on the user's hand-held device identifies itself with the available satellite and thus the initial connection is made. With this connection, the inputs for the application can be fetched.

B. User sets the required profile at the desired location.

Once the connection is established, GPS provides the co-ordinates of the present location of the user. Application then provides a list of profiles from which the user chooses the one which suits him/her the most at the given location. The user profiles may include General, Meeting, Silent, Outdoor, Flight and Customizable. Once the profile is set the application makes a note of it and prepares itself for the adjustments that have to be made in order to become compatible with that profile. The adjustments might include the control of audio, ringer volume, brightness .Even changes with the wallpaper can be made.

Next, the application interacts with the user through its GUI to know whether the setting that has just been done is permanent or temporary. If temporary then the application requests the user to provide an integer count which the application uses to implement the setting as many times as given in the count.

C. Data is stored in the app database.

At this stage, applications know both the co-ordinates of a location and the corresponding profile setting. This (co-ordinate, profile) pair is stored in the database for future execution.

Since our application runs on android platform, Android comes with built-in SQLite database implementation. SQLite is an open source SQL database that stores data to a text file on the device. The main Package is ‘android.database.sqlite’ that contains the classes to manage our own databases. It includes methods to create, insert, fetch and delete data.

D. Specific Implementation of the given choice

The application continuously runs a background process which procures the co-ordinates of the current location of the user. The background process constantly checks whether the current co-ordinates matches with any of co-ordinate pair stored in the database.

Whenever, a match is found the application runs an ipc which communicates with the android os to in turn make the required changes with its settings convenient to the profile setting given by the user. Thus, the objective of the project is achieved.

VI. DESIGN AND DEVELOPMENT DIAGRAM

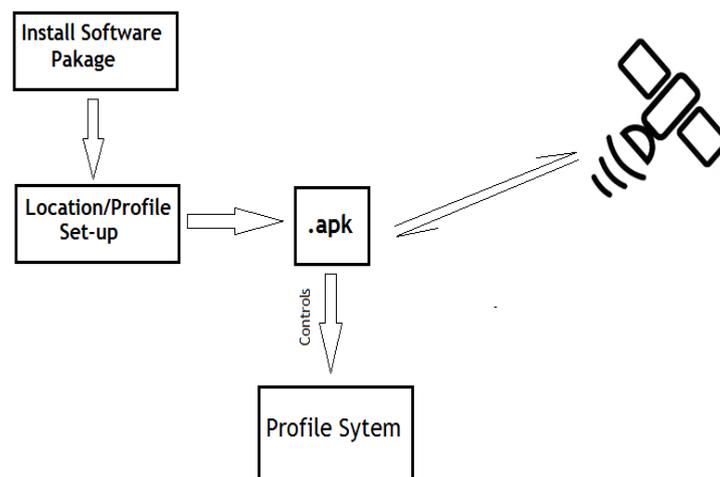


Fig. 1. Design Diagram

VI. ARCHITECTURAL DESIGN

A. Initial Setup.

- User install's and launches the application
- Application automatically performs a background check to confirm whether GPS/WLAN/data connection is switched ON, else seek the permission from the user to turn it on.
- Application then fetches the coordinates of the current location using GPS/internet.
- Application then displays a set of user profiles to be selected for that particular location.
- User exits the application.

B. When the user visits registered location.

- Application starts background process to fetch the GPS co-ordinates of the current location
- It checks whether the current locations falls in the registered co-ordinate range.
- If it does so, it implements the provided user-profile which has been registered for that particular range.
- If additional features are enabled for that co-ordinate, it implements those too.

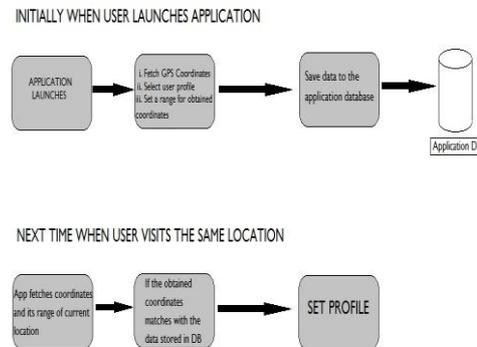


Fig. 2. Initiation and Execution layout

VII. PROS AND CONS

The advantages are

- Relieve the people of public embarrassment.
- To make people's life easier.
- Automation of personnel devices possible to greater extent.
- No place/possibility to human error.
- Important conversations can be recorded and referenced later.
- Flexibility through wifi.

The disadvantages are

- Due to constant usage of GPS system, battery consumption is increased. To overcome this, flexibility through wifi can be incorporated.
- Few low end mobiles use low grade GPS hardware which work only when synchronized with internet

VIII. LITERATURE SURVEY

Prior to the selection and finalization of the project, we conducted an exclusive search through various IEEE papers and found that the system we're implementing here has been very rarely touched. Not many full papers could we find on this subject. This gave us the encouragement to do a project which has been pursued by very few. In the search we found a system relative to our own on an asymptotic scale. We found that even far-off systems are costly to use and don't provide the flexibility as such in our system.

XII. CONCLUSION

GPS technology enables us to procure the co-ordinates of any particular place on the globe and thus acts a guiding tool. GPS can also be extended further to manipulate user profiles in today's smart phones. Through this we would able to overcome the issues concerning the profile like control the behavior of the cell phone in public places like the court house and in meetings etc. In this paper we present the system to incorporate the above idea. The system would consist of codes to make use of GPS and apply its results to control user profiles. The app will work once the initial setup is done and will act accordingly from there on.

REFERENCES

- [1] Behrouz A. Forouzan, "TCP/IP Protocol suite", McGraw-Hill, 2003
- [2] A.Ganesh and R.Narayanakumar "GPS Principles and Applications".
- [3] <http://www.w3school.com>
- [4] <http://www.wikipedia.com>
- [5] <http://www.tutorialspoint.com>
- [6] <http://developer.android.com>.
- [7] "Personalized advertisement recommendation system based on user profile in the smart phone" Jong-Hyuk Roh ; Seunghun Jin Advanced Communication Technology (ICACT), 2012 14th International Conference on Publication Year: 2012 , Page(s): 1300 – 1303
- [8] "Message in a Sealed Bottle: Privacy Preserving Friending in Mobile Social Networks" Zhang, L. ; Li, X. ; Liu, K. ; Jung, T. ; Liu, Y. Mobile Computing, IEEE Transactions on Volume: PP , Issue: 99 DOI: 10.1109/TMC.2014.2366773 Publication Year: 2014 , Page(s): 1 Cited by: Papers (1)

