

AQUIRE-Android Quick Information Retrieval

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Abstract: *AQUIRE is to serve the Android users when their phone is out of their reach. In other words, this application would be of great help to android phone users when they seem to have forgotten their phone at home or office and some important information stored in it needs to be retrieved. In addition, the user can also monitor the incoming messages or calls missed by him. In addition to providing these services the objectives are to consider the convenience of the user in such situations. Hence the requirements at retriever's side are kept minimal. The client phone can be of any operating system and not necessarily an android smart phone. Internet connection is not required. The only requirement is to support message service which will be present in all lower end to high end mobile phones.*

Keywords: *Authentication, Contact retrieval, Text file retrieval, Message routing, Missed call notification.*

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I. Introduction

AQUIRE – Android Quick Information Retrieval facilitates retrieval of important data from remote smart phone of the user which currently cannot be accessed by him. The android application developed aims at providing the necessary information like contacts, text messages, text files and missed calls required by the owner of the android phone when the phone is out of his access.

The communication media to be used by the user is simple messaging services with predefined simple formats which are easy to remember. These SMS will be processed as service request message by the application installed at the other end which automatically provides the desired service. It is not mandatory that the retriever's phone should have the application. Hence it need not be an android phone as well. This proves to be of great advantage for the user to use the application as the user need not look for any Android phone user or a phone having Internet connectivity. The application just requires a basic mobile phone which supports messaging services. The main objective of this project is to eliminate the problems faced by users when their phone is out of their reach. For instance the user might want to make an important call to a contact saved on his/her phone. At times when forgotten, the only choice for user is to go back to wherever the phone is and get the contact. To prevent this kind of situation, AQUIRE aims at providing necessary information to the owner of the phone after authentication.

In addition to providing these services the objectives are to consider the convenience of the user in such situations. Hence the requirements at retriever's side are kept minimal. The client phone can be of any operating system and not necessarily an android smart phone. Internet connection is not required. The only requirement is to support message service which will be present in all lower end to high end mobile phones.

In literature, many authors have provided different techniques for the development of an android application in a given printed text documents [1-2]. In [1], A simple music player is provided as instance to illustrate the basic working processes of Android application components. This paper could provide guidance to understanding the operation mechanism of Android applications and to developing applications on Android platform.

In [2], The application retrieves data from a database per user request and displays the retrieved information on an android device. Users of this application would be able to analyze data quicker hence make quick decisions as they would not be drowned in a flood of detailed information.

In this paper, we aim to provide the user with the contact number of the person(s) requested, Provide with the contents of the text files saved, Notify the user about the missed calls received, Give the user a privilege to route the incoming text messages to any desired number. Rest of the paper organized follows: section 2 describes the proposed model, section 3 gives experimental results and section 4 concludes the paper with the brief summary.

II. Proposed Model

To overcome the drawbacks of the existing system, the remedy proposed is to develop an android application AQUIRE through which it is possible to retrieve data from remote Smartphone of the user which currently cannot be accessed physically. Using this application, user can retrieve information such as saved contacts, text files etc. from any other phone.

The communication media to be used by the user is SMS with predefined simple formats which are easy to remember. These SMS will be processed as service request message by the application installed at the other end which automatically provides the desired service. But it is not mandatory that the receiver's phone should have the application. An authentication process is involved before the communication starts to verify that it is the authorized Owner of the phone from which the information has to be retrieved. If the user wants to receive a specific contact, he can send the name with which the contact is saved or a part of it on which the application performs smart search using filters. The draft files or text files saved in the Smartphone can be accessed by providing the name in the message sent. It is desirable to be aware of the calls missed by the user when the cell was out of his reach. Through AQUIRE, it is possible to get the missed calls notifications on request. If the user wants the SMS routings to be done to the phone with which the connection has been established after the authentication process.

The proposed model is simple to use and understand. The architecture is shown in the following block model in Fig-1:

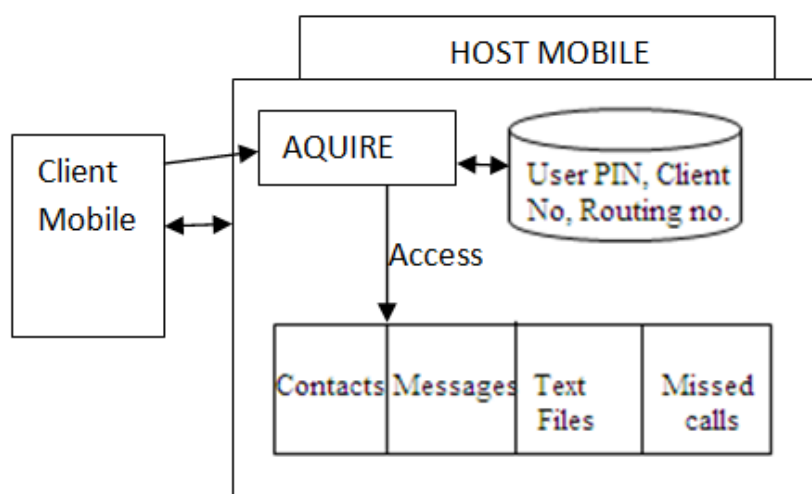


Fig-1: Proposed model for AQUIRE

A. Authentication

Initially for the user to retrieve from his own cell which is out of his reach, he can use any other phone be it one of his friends' phone or a stranger's. He first sends command AU along with a 5 digit password known only to him stored in the application. This password will be compared with the PIN in the application database and if matched, the retriever's number will be stored in Number_table of the database till the user logs out. To confirm Authentication it replies "Service logged in" along with a set of commands which helps the user to remember commands to be used for communication. The user is then free to request data from the host mobile.

B. Contact Retrieval

Contact retrieval feature allows the user to choose in what way the search has to be performed and whether multiple contacts are to be retrieved. Single contact retrieval is done in three ways.

CS START <name> tells the application that the search has to be done matching the beginning of the contact names saved and return the first contact matched. CS END <name> tells the application that the search has to be performed matching the end of contact names. CS EQUALS <name> looks for the exact match of the name with the contact. Multiple contacts can be retrieved by giving the command MCS along with the beginning of the string. This will give information of all the contacts matched. If no strings are matched in any of the above cases, the retriever will get a reply "Contact not found".

C. Text file retrieval

In a file system, there may be files stored at various locations which can be possible to retrieve by the application, but will turn out to be time consuming. Also, there may be many files with same name or same file may be redundantly stored in different locations. Instead of searching the whole file system at a cost of time, all

the important text files can be stored in the folder AQUIREStore where the application can quickly retrieve files. When a user wants to retrieve file based on its filename, then the command to be given is FS along with filename. If the filename is matched it will produce the file's contents in a message and reply. If not found it will reply "file not found". Suppose the user wants to retrieve the contents of a file whose name he/she does not know but knows some keyword present in the file, then the user can send a message "FCS <Keyword>".if the keyword is matched with the any of the file contents present in AQUIREStore, then it will reply that file's contents to the client mobile.

D. Message routing

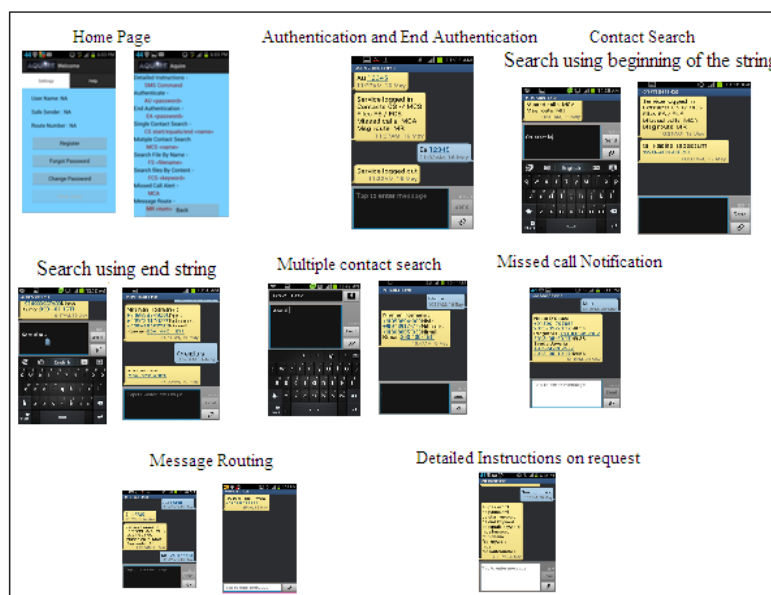
Using this feature the user can route the messages coming to his mobile to any desired number. The command to be used is MR followed by the destination number. Destination number means the number to which the messages are to be routed. This number will be stored in Route Number table in the application database. The Broadcast receiver monitoring the inbox constantly will know if any message arrives, and forwards the message to the destination number. In the user interface provided by the application, the user can view the number that is present in the Route Number table and clear it using Clear data button which in turn ends authentication as well.

E. Missed call notification

User can monitor his/her mobile phone for the calls missed when the phone was out of his reach. This can be done by sending a simple command MCA which will read the call log and retrieve the recent 3 missed calls along with caller name, number, date and time. If there are no missed calls, it will reply with an appropriate message.

III. Experimental Results

The experimental results are obtained by sending commands through message routing. our system works fine and the results obtained is shown in the following fig-2. The expected result are obtained and finally the required information for the end user is retrieved on the client mobile from the host mobile. Hence the user gets benefited of information retrieval. The accurate results are obtained for the client. AQUIRE makes the information retrieval very easy and effective.



IV. Conclusion

As the usage of mobile phones is increasing on a large scale day by day, same are the chances of forgetting them. There is always a need for information retrieval since much of important information will be stored in mobile phones for quick reference. AQUIRE gives a quick reference to the user's phone even when it is out of his reach.

This project is a real time application and is built considering the real world scenarios and with limited scope. This mobile application can thus overcome the problems faced by numerous android phone users when their phone is forgotten.

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