

CACHE AND FETCH:

INFORMATION RETRIEVER FOR REMOTE / LOST PHONE

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Abstract— World is evolving at a rapid rate, and we, along with it. With the current globalisation, all our technologies are motivated towards replacing the human efforts in regression, thereby reducing social dependencies and making life easier, as we know it. But this has only increased our reliance on machines. Hence our study aims at combating one aspect of our mechanical reliance, mobile phones. Anything that is accessible on mobile are accessible via other sources, internet being the predominant one. The only area of usage wherein only cell phones would come in handy would be SMS texts, call logs and contacts. We are hoping to eliminate that redundancy by storing these private data on a third party server like a cloud and making them accessible via any smartphone so that one would not feel helpless without a phone at any given point in time.

Index Terms— contacts retrieval, logs retrieval, message retrieval, OTP.

I. INTRODUCTION

An information retrieval process begins when a user enters a query into the system. Queries are formal statements of information needs, for example, search strings in web search engines. In information retrieval a query does not uniquely identify a single object in the collection. Instead, several objects may match the query, perhaps with different degrees of relevancy. An object is an entity that is represented by information in a content collection or database. User queries are matched against the database information. Depending on the application the data objects may be, for example, text documents, images, audio, mind maps or videos. Often the documents themselves are not kept or stored directly in the IR system, but are instead represented in the system by document surrogates or metadata. This paper introduces the android app, CACHE AND FETCH which represents an efficient solution for power saving and completely integrated full text search for android devices.

So far, none of the approaches and practical solutions developed in the past, offer a holistic method to handle natural language text, from its extraction to its retrieval (to say

nothing of semantic analysis), right on the user's' devices. All apps use remote servers to process queries and analyse textual contents. For iOS, the app Spotlight exists that at least enables the search for contacts, addresses, appointments, music and e-mails. However, a future challenge is to combine, semantically connect and correlate this information in order to actually transform these reactive solutions into "intelligent" assistants that autonomously and proactively search for, prepare and present needed information. The herein presented app is just a simple, yet important, step towards this goal.

We consider a simple, yet not an uncommon scenario where a user forgets to carry his Android mobile and wants to access his/her contacts or SMS Messages or phone number of the consultancy that had called the previous day whose number he has not saved. Our application can make this possible by tracing the steps of cloud storage and access. This can be done by developing an application where the Android mobile will send the requested contacts and inbox messages on receiving an SMS from other mobile phone in a defined format. The format consists of the username, password, Name of the contact / the particular date for retrieval of logs or messages from that day.

II. RELATED WORKS

Several researchers developed great systems for controlling, accessing and monitoring devices. Salah Addin Ahmed et al developed a smart GSM based home automation system. This research work is focused on functionality of the GSM protocol which allows the user to control the target system away from residential using the frequency bandwidths . Using a mobile phone, an SMS message is sent from the user to the GSM modem as a text message via cellular network. The GSM modem then sends the commands in text mode to the PIC microcontroller. Finally after several signal conversions, an outgoing message from the system containing the home appliances status is delivered to the mobile phone through GSM modem. L.V. Didhe et al proposed the development of a smart monitoring and controlling system for household electrical appliances in real time. This system provides the facility to turn off the desired home device remotely using a smartphone. Android platform and a corresponding server are made use for this remote monitoring of appliances to save energy crisis. Jonathan Trevor et al proposed a system which seeks to improve our ability to capture, reuse, and share

personal and organisational contacts. It goes beyond existing systems by proactively retrieving contacts based on the user's context (e.g., the content of a displayed email message or web page), and provides one-click access to relevant contact information without disrupting ongoing tasks. It makes use of 2 components-capture and recommender. The first one captures contact information and stores in database. The second analyses user's context to proactively recommend potentially relevant personal or shared contacts.

III. IMPLEMENTATION MODULES

1. USER INTERFACE

A new user downloads the application from the app store and signs up the first time by entering

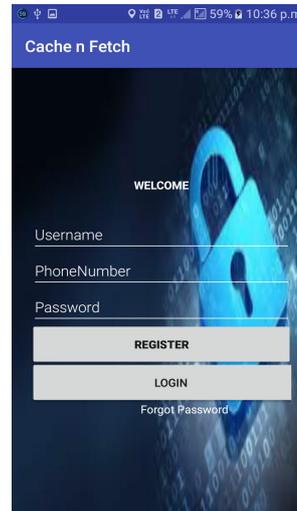
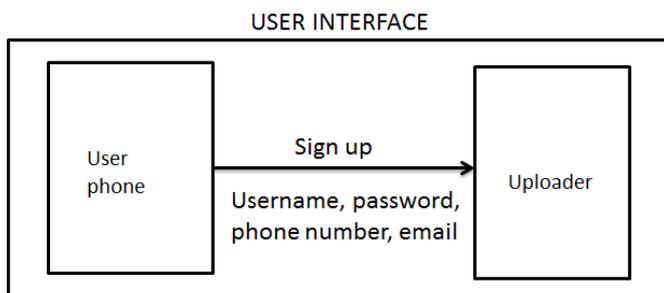
- username,
- password
- email id for extra verification of identity.
- Along with this, the user is also expected to enter the mobile number to associate himself with. This step is aimed to provide portability wherein a person can register onto the app from anybody's phone at that moment.

Access request is handled in two steps in this application for extra security. An existing user can simply sign in from the new phone with password in the first step. The next step will require the user to enter the OTP which will be sent to his electronic mail. This provides two checkpoints.

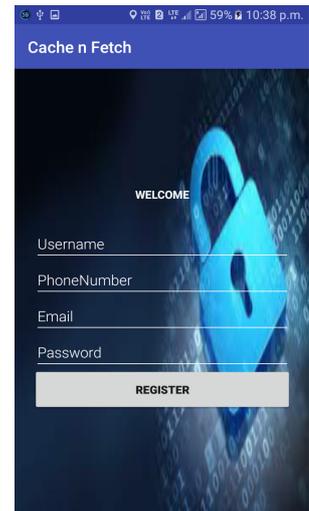
1. Application password validation
2. Email access validation

Later, the request is handled appropriately. If the password is forgotten, links to change to new password are sent to the user's email.

Therefore, this approach of allowing the user to sign up and sign into the application from any trusted party's equipment increases the simplicity with which users can navigate and use the facility.



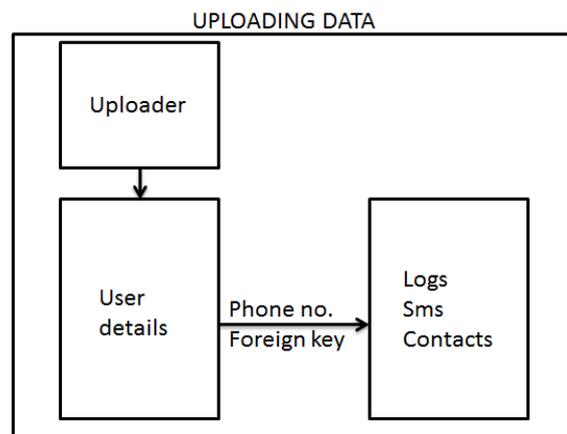
(1)Login/Sign up

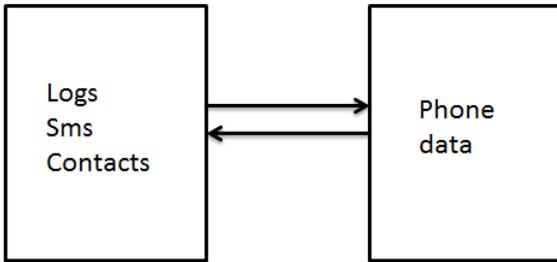


(2)Sign up

2. UPDATING DATA

Once the user signs up, all the call log information, contacts and SMS messages are uploaded onto our database with the user's phone number as the primary key. The server used for hosting the information is Hostinger. Apart from initial contact which is human triggered, we've implemented the application in such a way that it updates its contents once every hour to enable maximum facilitation. It compares the self hosted data and that on the associated sim once every hour with respect to logs, SMS, and contacts and updates the database accordingly. We've also designed the application in such a way that all data older than six months are erased to maintain an efficient space complexity.





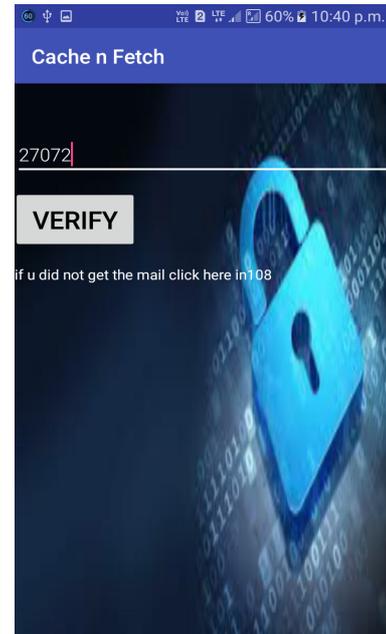
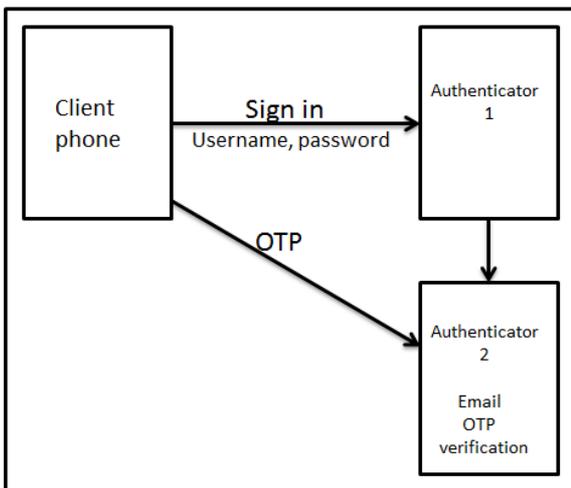
3. AUTHENTICATOR

The effectiveness of our applications relies solely on this module as we need to preclude the possibility of data reaching the wrong hands. Hence, we have implemented an authenticator which operates at two levels.

- The owner of the forgotten mobile logs into the application to request for his data.
- the user's password is validated as the first check point of entry
- He then proceeds to enter the OTP which will be sent to his email address, proving to be the second check point of entry.

Also, while signing in, two usernames aren't permitted for the same number to avoid hackers to take advantage of the known phone numbers. One can delete the account to create a new one, but cannot create a new account while the old account is still in operable state.

2 STEP AUTHENTICATOR

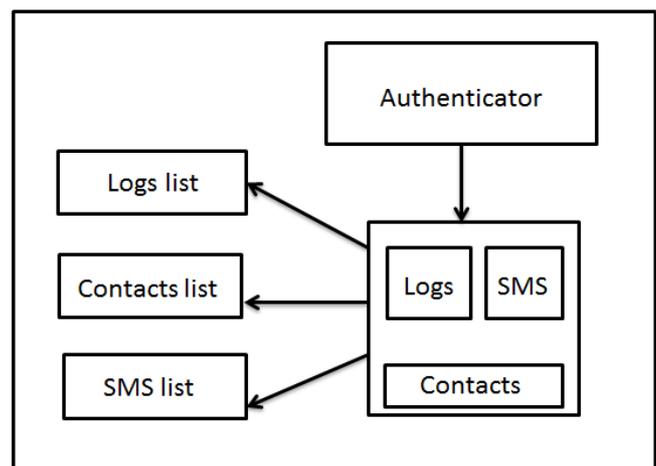


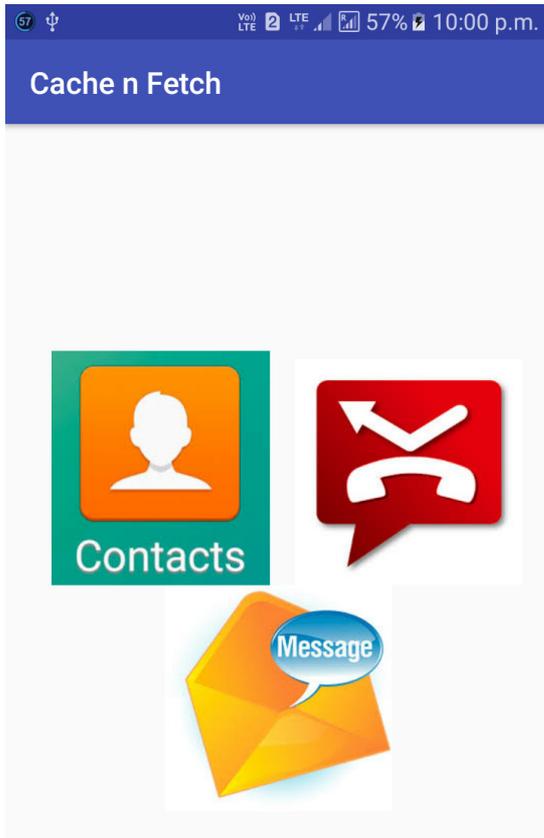
OTP Verification

4. RETRIEVER

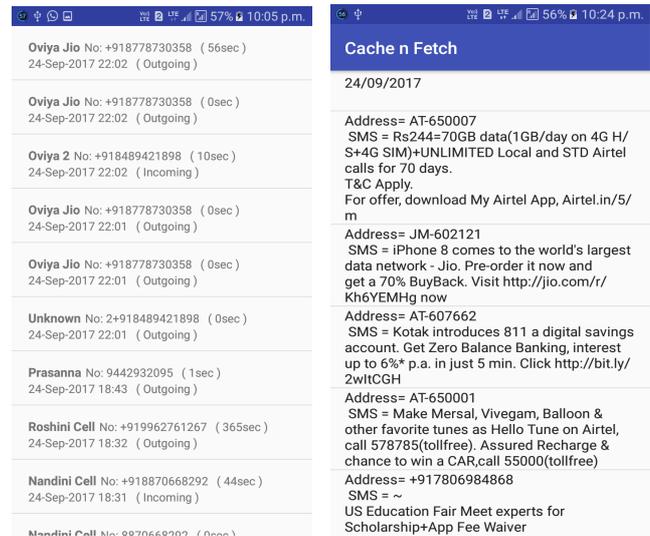
When the user registers for the first time, all the contact information, phone logs and SMS messages are uploaded onto the server Hostinger. Post that, the code automatically refreshes the data in the database by comparing the already uploaded data and the data present in the phone at that moment. This prevents stale information from reaching the user. When the user signs in to retrieve data from his lost mobile, after the verification check points are crossed, the data is retrieved by using phone number as the primary id.

RETRIEVER





(1)Menu



(4)Call Logs

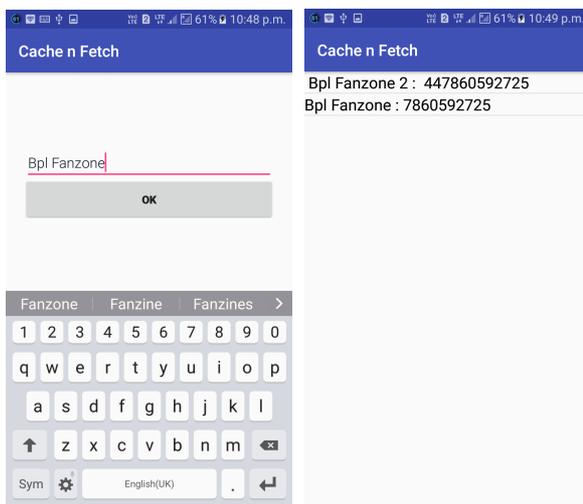
(5)Messages

IV. EXPERIMENTAL EVALUATION

The app takes minimum 1 minute on the whole to do all the required jobs. Maximum time depends on the speed of the internet. It consumes only 10Mb of the phone's memory, which doesn't cause the phone to hang. Thus the app proves to be an efficient method of information retrieval along with ensuring reliability and security.

Table displaying the time taken for retrieval

Internet Connectivity	Contacts Retrieval	Message Retrieval	Logs Retrieval
Good	5 seconds	3-5 seconds	3-4 seconds
Average	Around 15 seconds	Above 10 seconds	10-15 seconds
Slow	Above 25 seconds	20-25 seconds	Around 20-25 seconds



(2) Contact name

(3)Fetching numbers

V. CONCLUSION

With more power comes more responsibility. Hence with all these innovations and boom in technology, one can never be blamed for being obsessed about his safety. As much as we develop, its upto us to not appear weak and secure all data in every possible way. This study has implemented its mechanism in such a way that there's a fine balance between data security and application portability. OTPs and passwords are used for this purpose. This area can further be researched

upon to expand its applications from mobile phones to desktops, laptops and other integrated systems as levels go by.

VI. REFERENCES

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