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REMOTE ACCESS TO ANDROID APPLICATION VIA CLOUD

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***Abstract**: Our project is to provide a platform to share device oriented information between devices via local private cloud. Information like missed call history, massages, files, notes, to do's etc. are shared between devices. For sharing such information we build public cloud. We make use of windows OS and android as platform on which client application runs. This Application can set various kinds of triggers to push information into the cloud. To get easy access to the stored data anytime, anywhere and from multiple devices we use 'software as service' (SaaS) offer through cloud computing. Whenever required, the public cloud enables access to shared resources via a network connection. Through the public cloud, information is shared among various devices. The use of mobile devices is increasing rapidly day by day and people have started to use many devices simultaneously so sharing information between these devices has become an important. For example, suppose a person at work needs some file or document immediately which is present on his laptop and incase if he forgets his laptop at home then it can be retrieved if the same data is stored in the cloud. Also user can get notified of the missed call history, low battery level of a device not in immediate reach to him.*
***Keywords:** Public cloud, Private cloud, 'software as service' (SaaS).*

1. INTRODUCTION

Mobile devices are spreading at a remarkable rate, and more people are starting to use several devices simultaneously as their own. For example, a user may carry around three devices: a cell phone, Android tablet, and laptop or computer. In this case, sharing information between devices becomes important. Information such as mail or the schedule is related to the user and not to devices. Sharing such information between devices would be of great help to users. At the same time, cloud computing is also becoming popular. Through the development of cloud computing, service providers no longer need to worry about resource management. Resources are managed by cloud providers, and service providers can use resources depending on their demands. In addition, users can access data and services anytime and anywhere. This lets users share data more easily than before. Users can access the same data in the same way from any device. We are building a platform to share the device oriented information using private cloud. Our purpose is to create an information-sharing platform that enables easy sharing of device-oriented information. The cloud is build using SaaS platform. Whenever required, the Public cloud enables access to shared resources via a network connection. Through the cloud, information is shared among various devices.

2. LITERATURE REVIEW

Android:

Google usually refers to the Android OS as a software stack. Each layer of the stack groups together several programs that support specific operating system functions. These layers are illustrated in Figure 1.

The base of the stack is the kernel. Google used the Linux version 2.6 OS to build Android's kernel, which includes Android's memory management programs, security settings, power management software and several hardware drivers. The next level of software includes Android's libraries. Libraries are a set of instructions that tell the device how to handle different kinds of data. Android runtime layer includes a set of core Java libraries -- Android application programmers build their apps using the Java programming language. It also includes the Dalvik Virtual Machine. The next layer is the application framework. This includes the programs that manage the phone's basic functions like resource allocation, telephone applications, switching between processes or programs and keeping track of the phone's physical location.

- Application Framework is used to write applications for Android. Unlike other embedded mobile environments, Android applications are all equal, for instance, applications which come with the phone are no different than those that any developer writes. The framework is supported by numerous open source libraries such as open ssl, sqlite and libc. It is also supported by the Android core libraries. From the point of security, the framework is based on UNIX file system permissions that assure applications have only those abilities that mobile phone owner gave them at install time.

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- Dalvik virtual machine is extremely low-memory based virtual machine, which was designed especially for Android to run on embedded systems and work well in low power situations. It is also tuned to the CPU attributes. The Dalvik VM creates a special file format (.DEX) that is created through build time post processing. Conversion between Java classes and .DEX format is done by included "dx" tool.
- Integrated browser, Web Kit is chosen as an open source web browser. Google added a two pass layout and frame flattening. Two pass layout loads a page without waiting for blocking elements, such as external CSS or external JavaScript and after a while renders again with all resources downloaded to the device. Frame flattening converts founded frames into single one and loads into the browser. These features increase speed and usability browsing the internet via mobile phone.
- Optimized graphics – as Android has 2D graphics library and 3D graphics based on OpenGL ES 1.0, great applications like Google Earth and spectacular games like Second Life are seen, which come on Linux version.
- SQLite is used, which is extremely small (~500kb) relational database management system that is integrated in Android. It is based on function calls and single file, where all definitions, tables and data are stored. This simple design is more than suitable for a platform such as Android.

3. NEW PROPOSED SCHEME

Proposed System:

We propose a platform to share device-oriented information between devices. Our application considers missed call history, location and battery information as typical device-oriented information. A platform and released a client application that works on Android. Our platform makes it easy to support new cloud services as output, and our Android application can set various kinds of trigger to push the information into the cloud**.**

Our goal is to provide platform to share device-oriented information and the user is free to use any computing device they own. For that a mechanism is needed to add information sharing services along with the shared information since services in a cloud are increasing rapidly. Similarly, a convenient approach is needed to add the device oriented information.

We will be developing an android based application which would be power full enough to reply for the request triggered from sever machine. This application will have functions for answering device oriented request as call logs, messages, to do, etc. it would be code as per sever request format such as once the request is been received it will first check for the type of request (eg: call logs, messages, battery info etc) depending on the request type it will command device admin for response.

Working of the system:

Working mechanism:

- When the user logs on the mobile username contact number and password are registered.
- After registration these details are send in GCM (google cloud messaging) and stored in the lookup table in cloud.
- The mobile user gets GCM ID which is also saved in lookup table in cloud and in the database.
- A connection between mobile user and cloud is established.
- When web user logs in the website using all username and password given during registration he can ask for contents in mobile(eg .contact logs, gps, message)
- A request is send to the cloud and checks if the GCM ID is valid or not in the lookup table.
- If the user is valid cloud sends request to mobile to send all the required details needed the mobile will "push" details in the cloud which is stored into database with the GCM ID.
- One time permission is asked to the web user for the purpose of authentication before displaying content on the web.
- Then requested content is "pull"ed from the cloud and displayed on the web.

GUI representation of system:

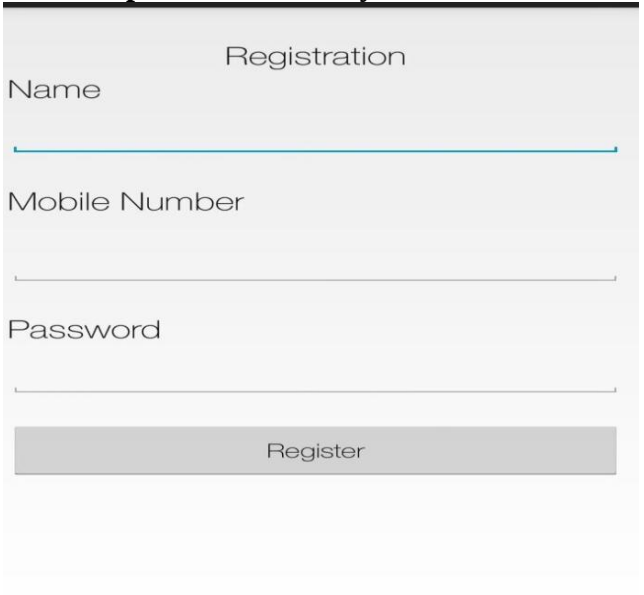

Fig 8.2.1: Registration for new user

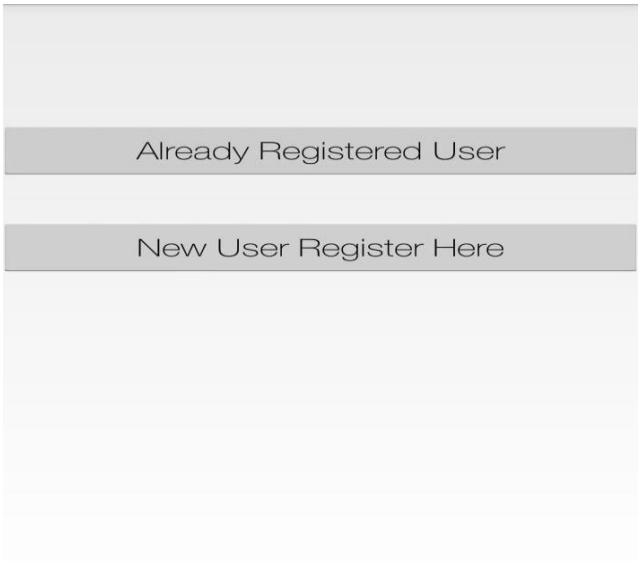

Fig:8.2.2: To choose type of user

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Fig 8.3.3 Main menu shown in the website

4. FUTURE WORK

We plan to work more on the platform that will help us to share device-oriented information between devices. We will also add more functions to the already developed android based application which would be power full enough to reply for the request triggered from sever machine.

5. CONCLUSION

In this paper we are building a platform to share the device oriented information using private cloud. Our purpose is to create an information-sharing platform that enables easy sharing of device-oriented information. The cloud is build using SaaS platform. Whenever required, the Public cloud enables access to shared resources via a network connection. Through the cloud, information is shared among various devices.

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