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CLOUD BASED COLLEGE AUTOMATION SYSTEM

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Abstract— We have seen over the years that the process of paper based boards, important notification about academics has been carried out manually almost across all educational institutions. This previous system requires a manual work of writing reports, taking printouts, displaying it on notice boards this is very time consuming and in efficient process. It needs a lot of paper work and need to maintain paper based Notice boards. By using this drawback, we developed a system based on the concept of web services which is implemented on Android application that communicates with the database residing on a remote server. This system focuses on how the students and Staff are able to get quick notifications on their mobile application. This system also contains notes, message communication, and Events creation. This system shows how the android mobile application is communicate to cloud database which resides on remote server.

Keywords- Android application, Cloud database.

I. INTRODUCTION

Cloud Based College automation system using, we are using software as a services (SaaS architecture). we need to implement web services for intra college communication and information. The communication will occur between teachers and students. Our system contains a private cloud in the college premises. The cloud will host web services (such as notifications, messaging, e-mail etc.). All the data of the students and teachers is stored on the database. The clients of the system would require connecting to the remote server using internet. The users of the system are teachers and students. Teachers can post notifications, messages, notes, create event or any other information regarding academics and event from their android app. Students can get this information instantly on their android app. So, students can get instant information regarding their academics as well as updates about any event and other things on time.[2]

The concept of Web Services is not new and has been very well known around for many years now. For a person who is not aware, a way to understand it would be to consider. Basically, the web services invocation involves sending of messages between a client and a server. The most common methods to access remote database is by using the web services. Web Services are platform as well as language independent as they use standard XML languages.[4]

This system is intended for communication purpose between clients of educational institutions. This system helps the admin to easy access the information of students. This system is also helpful for the user because he/she can easily bring changes to their records. The android application would require connecting to the cloud database on a server using Wi-Fi technology. To access this web services the client need to install our application on the their (student/teachers) smartphone. Apart from that, the application supports strong user authentication and quick transmission of data via the web service.[3]

II. RELATED WORK

2.1 Traditional Vs. Cloud Computing:

Cloud computing technology is similar to the technology in traditional networking. However, the main and major difference between cloud computing and traditional computing is the execution and virtualization. In a traditional networking, the server is fixed in hardware side and if you want to scale up to more users than the current hardware, we would have to spend more money for updates. The cloud computing uses its main feature i.e. virtualization to provide only for the resources that a specific user needs and they just need to pay for the use while in traditional networking they need to pay for hardware and installations. The traditional computing requires more money for the setup. As for the cloud computing, the user can uses the more resources with less money. [5]

2.2 Previous System

In all the educational system, notices, important notifications, information and communication about any event are displayed on the notice board. In this manual based system student didn't get all and important information about their academics or any events. The all-important notifications are distributed among every departments of college therefore it is not possible for student to visit each department for getting updated information about any events. In this traditional system, the features i.e. event creation, assign task, do-list, online notices, quick notification is not possible.

Table No. 1. Table of Literature Review.

Parameters	Manage to do App	Current college system	Our System
Online notification	Not possible	Not possible	possible
Event creation	Not Possible	Not Possible	Possible
Event Report	Not Possible	Not Possible	Possible
Quick Updates	No	No	Yes

III. SYSTEM DESIGN AND IMPLEMENTATION

3.1 System Design and Implementation:

A user of the system needs an android device with our android application to access a cloud system and web services via internet. Initially, when the user runs the application for the first time, a login screen will be displayed on the screen. There are two modes of login i.e. teacher login and student login. The application prompt the user to enter the username and password required for authentication. When the user enters the correct username and password, a success message is displayed and the user will get authenticated and directed to the web services screen.

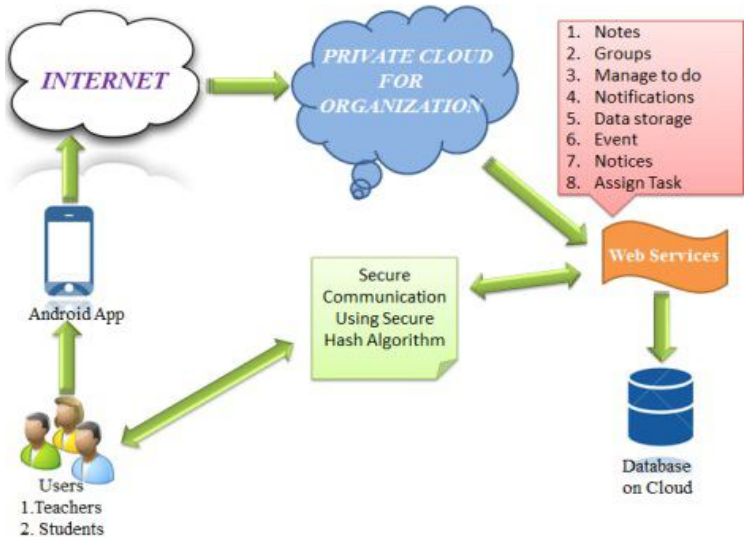

Fig. 1 System Architecture.

There is separate web service screen for teacher and student. For the teachers, the web services screen contains various options such as add student to group, manage notes, assign task broadcast, email, event creation etc. For Students, Each student will have a unique username and password to access the system. The student must be able to view notifications, send messages to other users, upload notes, share knowledge, do- list. A data and records is stored on cloud database. A user can retrieve a data when wants to retrieve. We make use of secure hash algorithm for the secure communication. When the user just connected to the internet, the quick notifications and updates is displayed on the device screen.[2][3]

3.2 User Characteristics and Classes:

The teachers and students are users of the system. A user of this system is authorized person. User or any person is assumed to have basic knowledge of system.

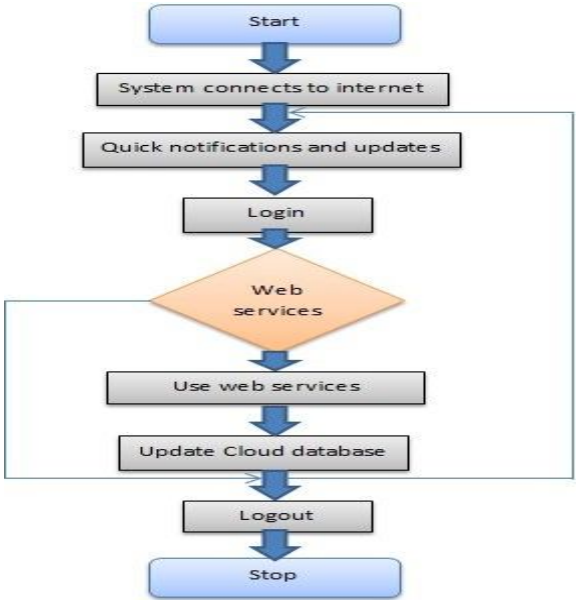

Fig. 2 System Flowchart.

1. If (User input = login) then

Display GUI for login.
Input username and password.
Login will be as usual to the user.

2. If(User=login as teacher) then
Display ← web services for teacher
Else If(User=login as student) then
Display ← web services for student

3. If (User input = web services) then
Display GUI for selecting web services.
Give fully access to user.

IV. MODULES

Our system is divided into modules is described as follows:

4.1 Teacher:

Initially, when the teacher runs the application for the first time, a login screen will be displayed on the screen. The application prompt the teacher to enter the username and password required for authentication. There is separate web service screen for teacher, the web services screen contains various options such as add student to group, manage notes, assign task broadcast, email, event creation etc.

4.2 Student:

For Students, Each student will have a unique username and password to access the system. The student must be able use options such as to view notifications, send messages to other users, upload notes, share knowledge, do- list etc. The students also able to maintain their academic records and gets a updated right on to their smartphone.

V. IMPLEMENTATION DETAILS

In the implementation of system, while registration, the user need to enter his details for registration and the entry is registered on SQL database which is stored on cloud. Thus through SQL, the user gets authenticated by matching username and password. Once authenticated, after that the user uses the web services which are host by cloud. The cloud host the various web services i.e. group, event creation, message, easy map, assign task etc. In the event creation, the user creates event by giving description of event. The all data related to event is stored on SQL database. If user wants to create report of any event, he just click on event report button and select the event from event list, the system automatically retrieves the data of event from database and generates the report. The important feature of system is quick notification. When the system is connects to the internet, the quick and important notification is displayed on the screen. The system connects with the cloud by JSON parser algorithm. The cloud and system communicates with each other via JSON parser algorithm.

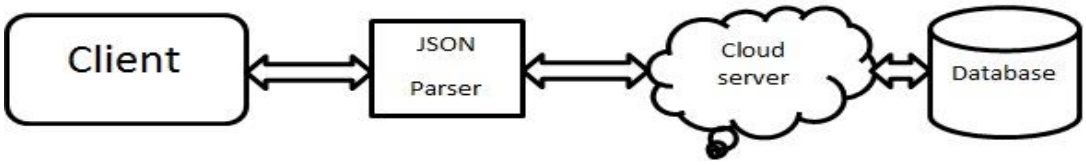

Fig. 3 Client server communication via JSON parser.

```
JSON Object JSON_GET ()
{
      // Making HTTP request
     // HttpClient
  HttpClient  = new Client(); // Post
  HttpPost httpPost = new HttpPost(url); // Execute
  HttpResponse httpResponse = execute();
  HttpEntity httpEntity = Response.getEntity();
```

VI. RESULTS

6.1 Data Sets:

The data sets include the number of various web services i.e. assign task, e-mail, event creation, message, create group etc. are used to access the system as input and provides user friendly communication and quick updates as an output.

6.2 Result Sets:

In results, the proposed system provides the quick notifications, information, event report and updates to user as compared to the other systems.

CONCLUSION

With this system, the software as service (SaaS) architecture provides easy communication and interaction between the users. This system provides a user friendly environment between teachers, students and parents which makes communication in educational organization easy. The teacher can accesses the students from remote location. Similarly, the students can get quick notification from remote location. The system provides various facilities of SMS, e-mail, quick notifications, to-do-list, Knowledge share event creation and manage the records of event. This system provides high security, more data storage and authentication using secure hash algorithms.

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