Impact Factor (SJIF): 3.632

International Journal of Advance Research in Engineering, Science & Technology

e-ISSN: 2393-9877, p-ISSN: 2394-2444

Volume 3, Issue 7, July-2016

INTELLIGENT LEARNING FOR EDUCATIONAL SYSTEM BY USING HYBRID EDUCLOUD

Nimesh Kumar Paliwal[1], Mrs Pushpalatha R[2]

[1]*Department of Computer Science and Engineering,*

Visvesvaraya Technological University,

PG Centre, Mysuru, Karnataka, India

[2]*Department of Computer Science and Engineering,*

Visvesvaraya Technological University,

PG Centre, Mysuru, Karnataka, India

Abstract- *Presently a day Mobile telephones assume an essential part in human life and expanding step by step. As there is a development of training establishment everywhere throughout the globe there is a prerequisite of instruction cloud which will help for capacity and preparing expansive measure of data delivered by organizations. Instruction is a risen term for both learning and educating. By and large it is alluded to as E-adapting, so different innovations have been selected the use of e-realizing which is alluded to as online learning.*

In this idea, we have proposed mobihybrid Educloud, which is the mix of both private and open cloud. Savvy learning for instruction foundations help Teachers, Students, Developers and Researchers to impart and associate utilizing half breed training cloud, as an issue every individual can learn efficiently and makes it simpler through mobile phones by exploiting distributed computing.

Cloud permits instructive organizations to concentrate on different operations to enhance the nature of educating and learning abilities. Versatile cloud learning framework can give shrewd whenever anyplace discovering that is redone and adjusted to people, and conveyed through individual portables gadgets. This innovation permits classroom learning and permits successful method for giving information to understudies in different fields. So this will enhance the method for instructing for both instructors and learners through on the web.

Keywords-*Cloud Computing; Mobile Cloud Education; E-learning; Mobile-learning; Education System.*

I. INTRODUCTION

Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network (typically the Internet). Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

There are two basic types of cloud infrastructures: internal and external. In an internal cloud, servers, software resources, and IT expertise are used inside the school system to build a scalable infrastructure that meets cloud computing requirements. In an external cloud, service providers sell on-demand, shared services to a school. IT support, services, and expertise are included in the package; the school needs to run only the provided applications and services.

The cloud helps ensure that students, teachers, faculty, parents, and staff have on-demand access to critical information using any device from anywhere. Cloud storage is simply a term that refers to online space that you can use to store your data. As well as keeping a backup of your files on physical storage devices such as: external hard drives, sub flash drives. The cloud helps ensure that students, teachers, faculty, parents, and staff have on-demand access to critical information using any device from anywhere. Both public and private institutions can use the cloud to deliver better services, even as they work with fewer resources.

Mobile cloud education – a novel unification of cloud and mobile learning – is a relatively new concept that holds great promises for the future development of education. The two learning modalities can naturally merge, because the characteristics of cloud learning overlaps with mobile learning. The definition of mobile learning has also been evolving, from the early definition of "learning with mobile devices" to the current one that emphasizes "learner mobility resulting from the use of mobile devices".

This paper focuses on the impact of cloud computing on the education system and how we can provide the quality education by using the above technology. In Education system there is an exponential growth in the volume of data and information lead to problems in management, controlling effective and high costs of storage operation, where organizations are having problems: data retrieval and preparation and backups, and other acts of data. To overcome of these problems we are using cloud computing.

II. CLOUD OVERVIEW

Cloud computing is a computing paradigm, where a large pool of systems are connected in private or public networks, to provide dynamically scalable infrastructure for application, data and file storage. With the advent of this technology, the cost of computation, application hosting, content storage and delivery is reduced significantly.

A. Cloud Architecture

Cloud computing architecture refers to the components and subcomponents required for cloud computing. These components typically consist of a front end platform (fat client, thin client, mobile device), back end platforms (servers, storage), a cloud based delivery, and a network (Internet, Intranet, Inter-cloud). The basic cloud computing architecture is shown in fig1.

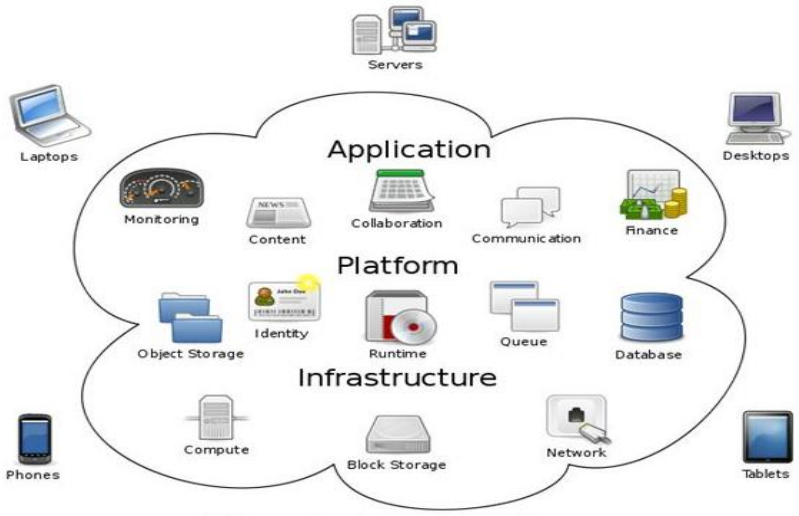

Figure 1: Cloud Computing Architecture

B. Cloud Services and Deployment Models

Based on the services offered and applicable areas of clouds, it will be classified in to two types. The first one is service models and second one is deployment models. The fundamental architecture of mobile cloud computing is shown in figure.2.

Figure 2: Mobile Cloud Computing Architecture

1. Service Models

Service Models consist of 3 types. They are as follows*:*

a. Software as a Service (SaaS): The students, faculties and research scholars can use the Educational software's, office packages and other free/paid application software's provided in the cloud on demand and these software's need not be installed on the physical machine of their own devices.

b. Platform as a Service (PaaS): The students, faculties and research scholars can use the application development platforms such as sdk and data store to develop, test, deploy, host and maintain their own applications in java and php on demand. By means of multi-tenancy their own applications can also be shared with their friends and faculties.

c. Infrastructure as a Service (IaaS): This provides the infrastructure such as storage, network, memory, processor to the research scholars on demand. It provides an experimental lab to the research scholars, who need to test their own research work (algorithms) in different operating systems, processors etc.

2. Deployment Models

There are variants of cloud that we can subscribe to depending on our desiderata. As a home utilizer or diminutive business owner, we will most likely use public cloud accommodations.

a . ***Private cloud:*** a cloud that is used exclusively by one organization. The cloud may be operated by the organization itself or a third party.

b . ***Public cloud:*** a cloud that can be used (for a fee) by the general public. Public clouds require significant investment and are usually owned by large corporations such as Microsoft, Google or Amazon.

c . ***Community cloud:*** a cloud that is shared by several organizations and is usually setup for their specific requirements. The Open Cirrus cloud test bed could be regarded as a community cloud that aims to support research in cloud computing.

d . ***Hybrid cloud:*** a cloud that is setup using a mixture of the above three deployment models. Each cloud in a hybrid cloud could be independently managed but applications and data would be allowed to move across the hybrid cloud.

C. Cloud Characteristics

Cloud Computing has five key characteristics that may occur:

1. ***On-demand self-service:*** Customers can adjust their services without needing anyone's help. Best of breed self-service provides users the ability to upload, build, deploy, schedule, manage, and report on their business on demand.
2. ***Ubiquitous network access:*** The access is available through standard Internet enabled devices.
3. ***Location independent resource pooling:*** Processing and Storage demands are balanced across a common infrastructure with no particular resource assigned to any individual user.
4. ***Rapid elasticity:*** consumers can increase or decrease capacity.
5. ***Pay per use:*** Consumers pay for only what resources they use and therefore are charged or billed.
6. ***Broad network access:*** The provided services are available over the network (e.g., Internet) and able to be accessed by a heterogeneous client platform (e.g. smartphone, tablet, PC and other).
7. ***Measured service:*** Cloud computing system can automatically control and optimize the resources' provision and usage based on a metric capability that suit different provided resources. Resources usage is monitored and reported for individual consumer, which provides more transparent service for both provider and consumer.

III. EXISTING SYSTEM

Although e-learning systems have been applied widely over the recent years, there are some critiques and limitations. So designing learning materials used for cyber education may require considerations of differences between learners' abilities, styles and context. In addition, it is stated in that most of e-learning systems based on throwing learning resources for learners without due consideration of their background and knowledge level, which makes the learning experience ineffective for certain learners.

On the other hand, m-learning is also constrained by the limitations of the mobile devices which involve limited processing power, small memory capacity, inadequate inputting facility and small screen in some cases. Of course these limitations are more in smartphones comparable with other devices, such as tablets. Therefore, learning materials used for cyber education including m-learning may require special considerations such as access method and devices facilities. Furthermore, mobile devices come with a variety of incompatible operating systems, which causes serious interoperability issues. Therefore, applying m-learning still requires more research to be improved and enhanced. Recently, some researches have been conducted that employ cloud computing as an infrastructure for m-learning.

In spite of this, to raise the quality of institutions, too much resources including books, computers, software are bought to aid the students. But only few instances of the software's are being used most of the times, so many of them remain unused, but for them, authority had spent large amount of money. In addition this is not an easy matter to implement the governmental system rule. As cloud computing technology binds the several distributed recourses

under a single authority control, so we suggest that cloud computing would be the best to overhaul the university education system. More elaborately we can say, that if a private cloud can be constructed covering a university and its colleges, then the aforesaid problems can be minimizes greatly.

IV. PROPOSED SYSTEM

Cloud computing technology can provide solutions for the above mentioned problems in education system. Cloud computing enables users to control and access data via the Internet. The main users of a typical higher education cloud include students, Faculty, administrative staff, Examination Branch and Admission Branch as shown in Figure 3. All the main users of the institution are connected to the cloud. Separate login is provided for all the users for their respective work. Teachers can upload their class Tutorials, assignments, and tests on the cloud server which students will be able to access all the teaching material provided by the teachers via Internet using computers and other electronic devices both at homes and college.

The education system will make it possible for teachers to identify problem areas in which students tend to make mistakes, by analyzing students' study records. In doing so, it will also allow teachers to improve teaching materials and methods. This will not only make it possible for students to use online teaching materials during class but they will also be able to access these materials at home, using them to prepare for and review lessons. Utilization of cloud computing systems will reduce the cost of operation because servers and learning materials are shared with other colleges.

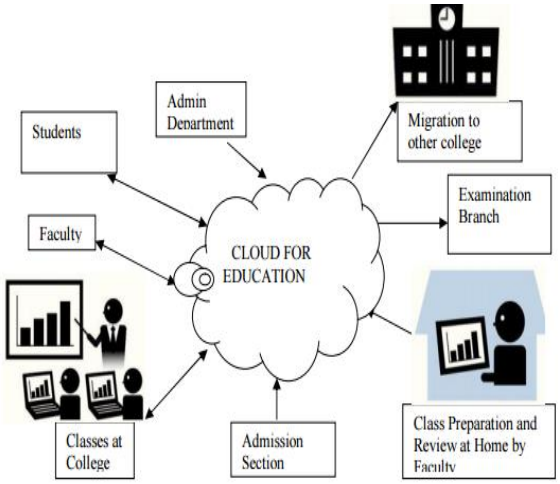

Figure 3: Services attached to Education Cloud

V. CLOUD COMPUTING IN EDUCATION

Educational cloud computing services represent a growing variety of useful services available on the internet, and the most innovative and rapidly developing element of technology and education. It also promises to provide multiple services that will be very useful to the students, faculty and staff .The role of cloud computing in university education should not be underestimated, as it can provide important gains in offering direct access to a wide range of different academic resources, research applications and educational tools .Educational cloud computing is quickly taking the education community by storm as more platforms, applications and services are being developed for academic cloud computing. Some students and researches are already using a type of cloud computing-based application and services. Furthermore, these applications are heavily investing in cloud computing as being the future of the academic cloud computing.

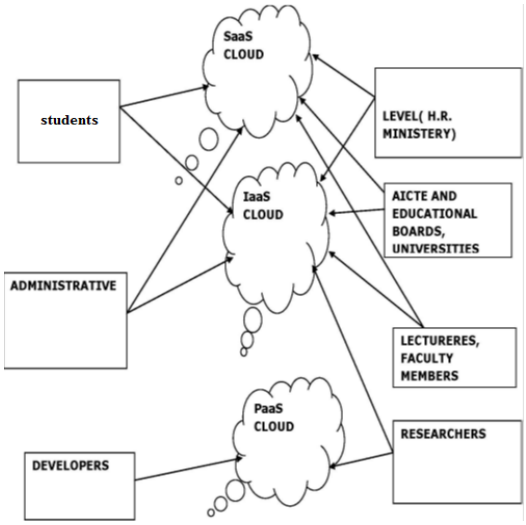

Figure4. Actual Services of Education Cloud

Binding all the necessary requirements of current education system one can simply implement the technology of cloud computing to get the desired result in very short span of time. All the desired needs are just joined with the cloud. Once a computer system has opened it will directed to the cloud. In cloud the first feature is the monitoring of attendance of both the teacher and student, secondly there are options for e -learning in which lectures from the special experts can be listened. Thirdly the exams can be taken on this cloud environment only and the results reported directly to the local and state government in the mail .and also the parents can be able to see their wards progress, attendance and monitors him. Also the students will take advantages of the special courses which help them to enhance their knowledge and not lag them behind from any student studying at any school, college or coaching in the world and thus not only boost up the confidence but also generates the feeling of equality and also helps them to compete better in all India competitive exams.

V. IMPLEMENTATION

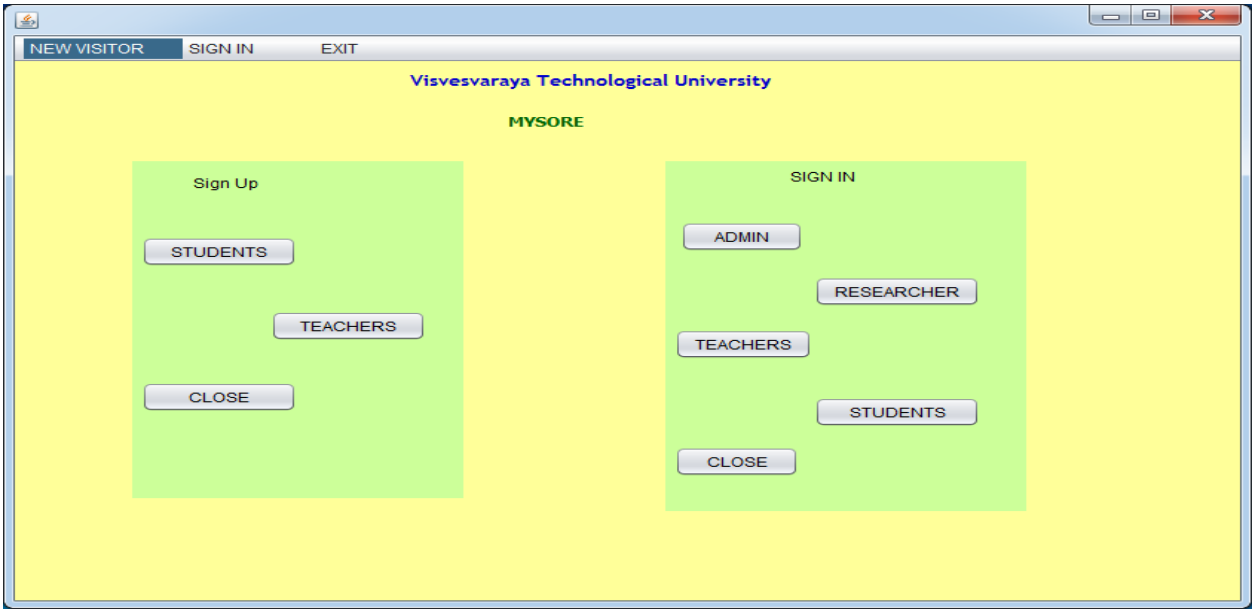

Figure 5: Home Page

Above figure is home page where student, teacher, researcher, admin can sign-up and login into the system.

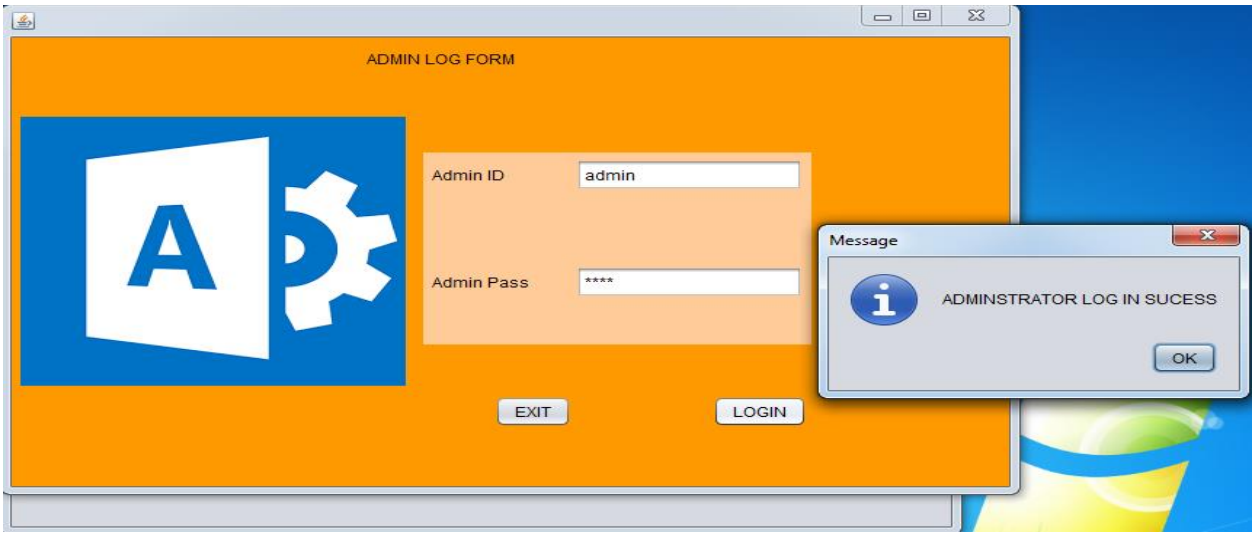

Figure 6: Admin Home Page

Admin can control whole system by registering new user and watch out all activities of these users.

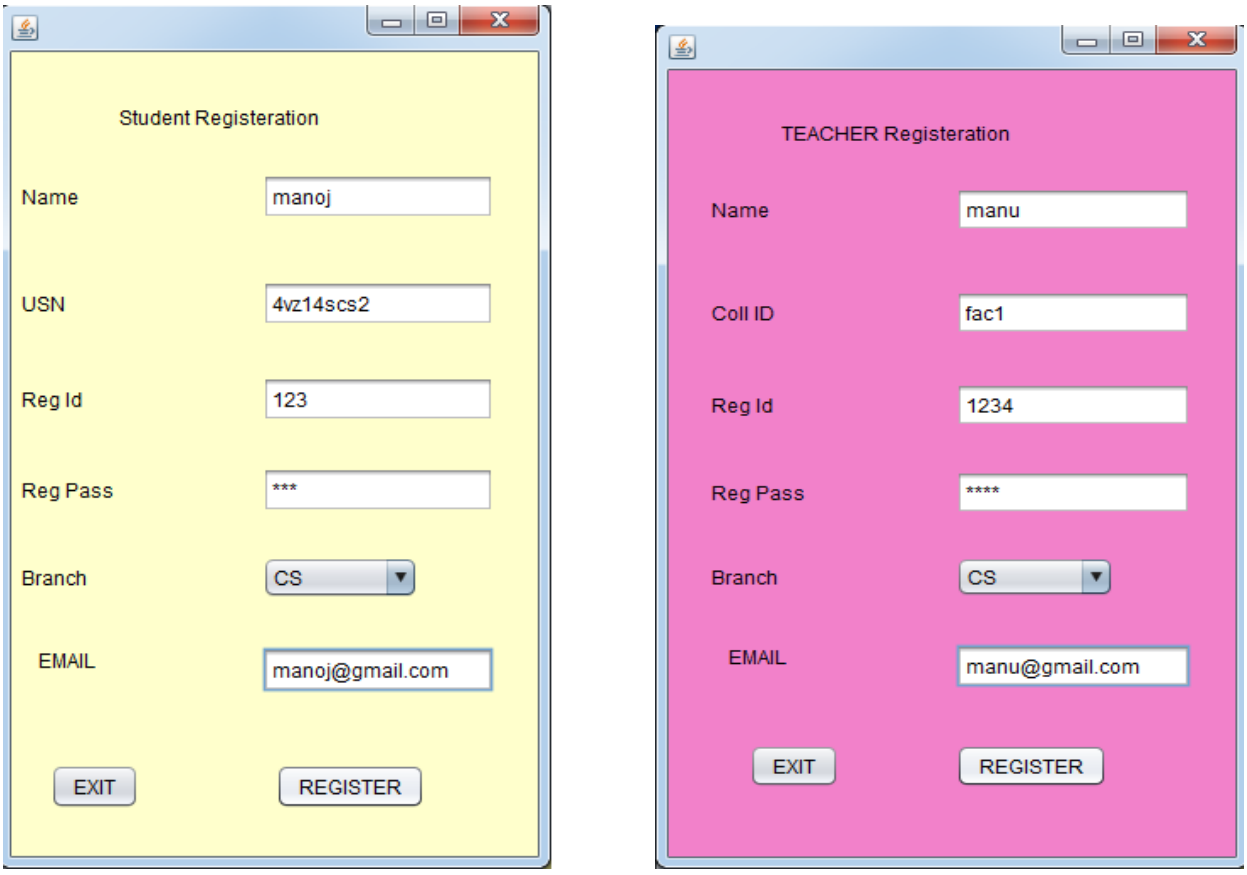

Figure 7: Registration Page

Above pages are registration page of student, teacher. We can register new user by giving valid information.

Admin also can register new user by checking valid information or authentication.

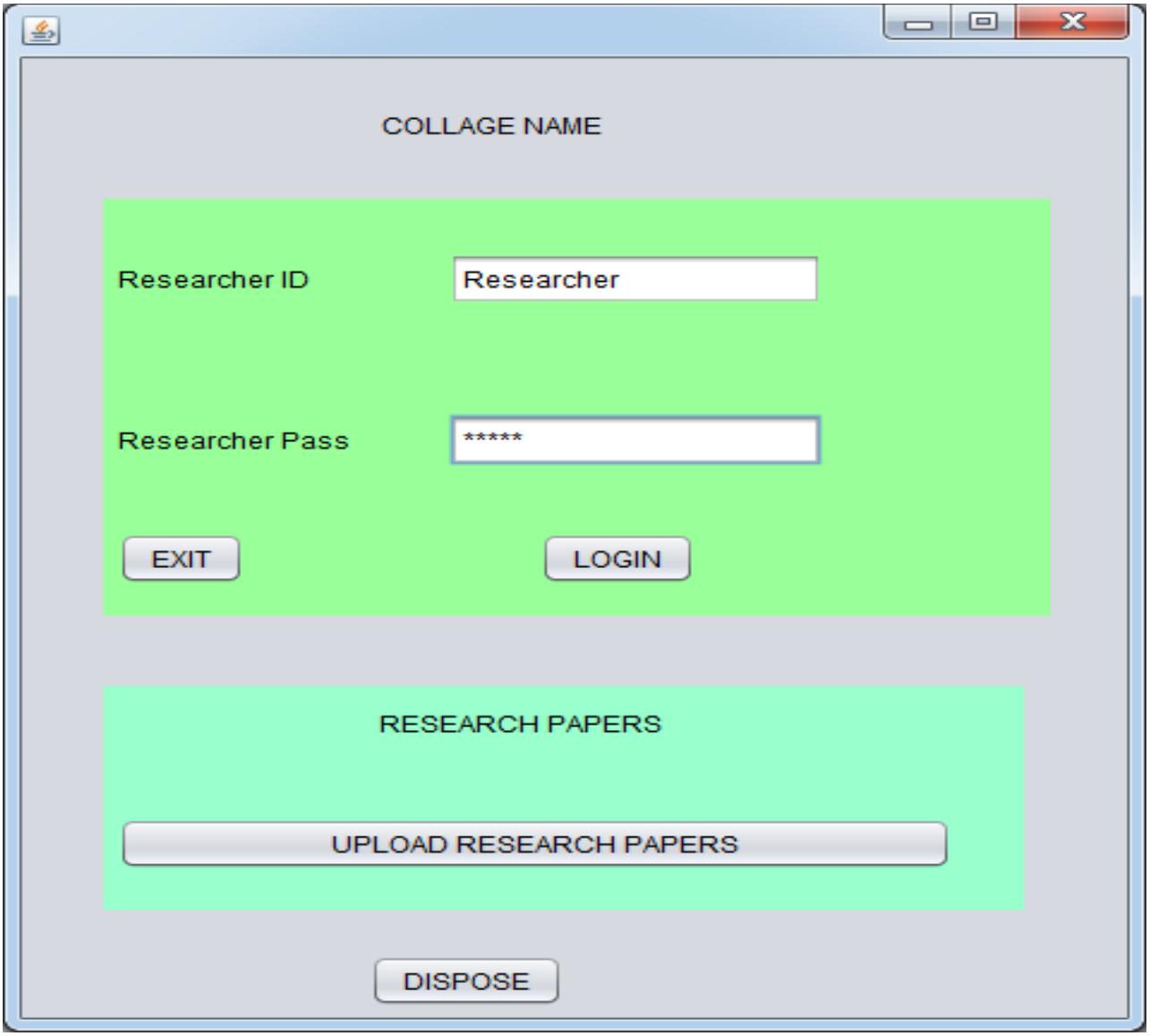

Figure 8: Researcher Home Page

This is Researcher home page, He can upload new research paper on the cloud and his research thesis also can be upload by him on to the server so all students can download these useful information from cloud anytime anywhere.

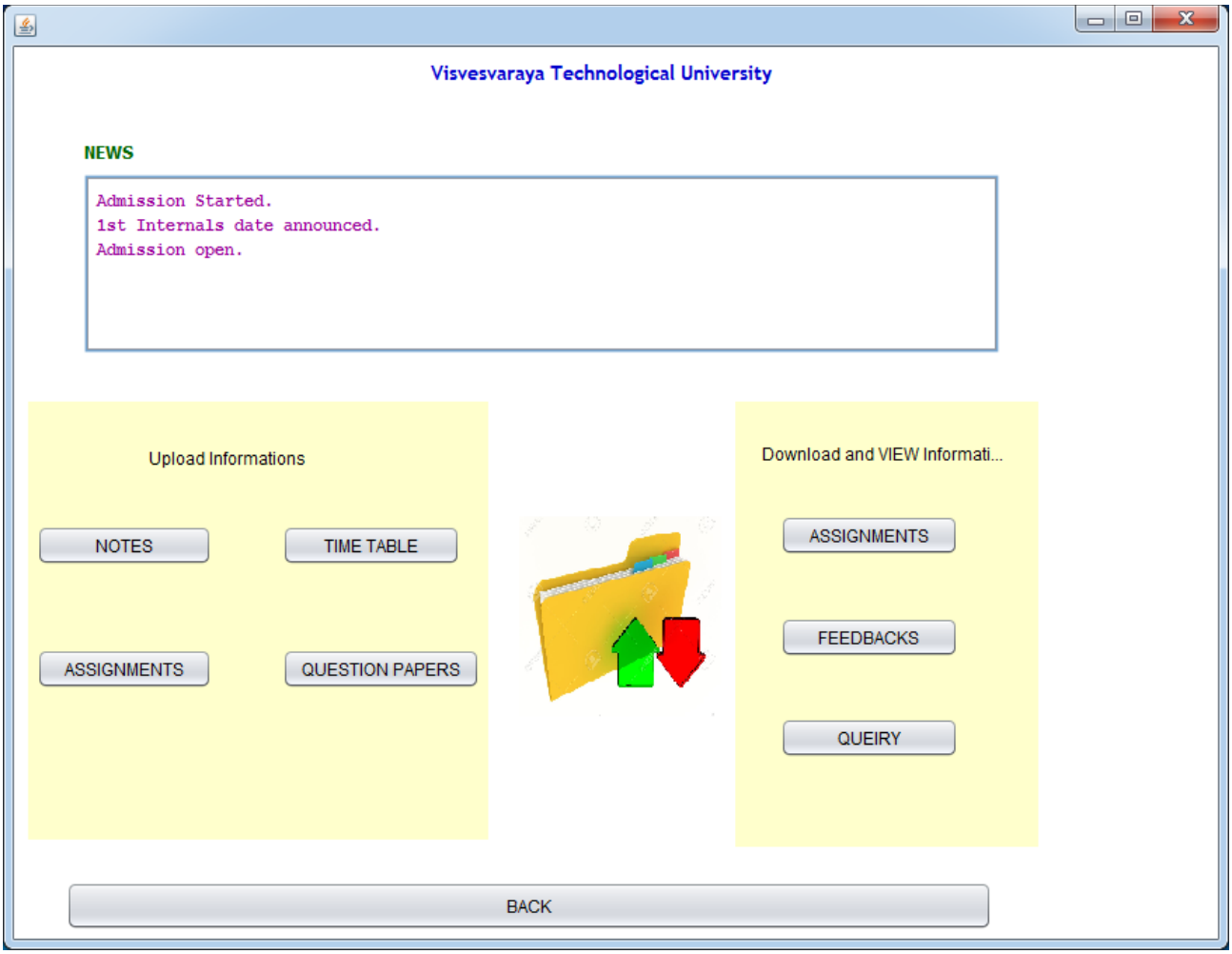

Figure 9: File Page

In this page it is showing the upload information like notes, time table, assignment, question paper files can be uploaded on to the server which can be downloaded by the valid user anytime anywhere.

Students also can upload queries, feedback to the system and get response from the server. Users also can see the news related to the organization anytime on the server.

VII. CONCLUSION

The cloud allows us to access our work anywhere, anytime and share it with anyone. It frees us from needing a particular machine to access a file or an application like a word processor or spreadsheet program. In the present paper a cloud education system is introduced and how it is beneficial for students, faculty and the educational institutes for providing quality education. In the era of "Big data" cloud computing has immense role in improving quality and enormous educational content available for students and research scholars. The success of cloud computing in education can be attributed to the acceptance of cloud computing by everyone in the field of education with good chunk of support by government.

ACKNOWLEDGMENT

The authors would like to acknowledge the reviewers for their valuable comments, which contributed to the clarity of the research and in particular for their suggestions for the statements of applications.

REFERENCES

[1] Dr. Shaik Abdul Nabi**,** Dayakar Gurram, Mohd. Anwar Ali *"Mobile Hybrid Cloud Computing for Educational Institutions: Mobihybrid EduCloud "*IEEE Sponsored 2nd International Conference on Innovations in Information, Embedded and Communication systems (ICIIECS) 2015.

[2] Arreytambe Tabot, Mohamed Hamada, *"Mobile Learning with Google App Engine"* IEEE 8th International Symposium on Embedded Multicore/Manycore SoCs 2014.

[3] Minjuan Wang, Jason W.P. Ng , *"Intelligent Mobile Cloud Education Smart anytime-anywhere learning for the next generation campus environment"* IEEE Eighth International Conference on Intelligent Environments 2012.

[4] Heba Fasihuddin, Geoff Skinner, and Rukshan Athauda*, "A Holistic Review of Cloud-Based E-learning System"* IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) Hong Cong 2012.

[5] Fei Ming-ming, Zhao Le-hua, Wang Cong, Wang Wei-hong, *"Research on distance education system based on cloud computing"* IEEE International Conference on Computer Science and Service System 2012.

[6] GAURAV BHATIA,AJAY LALA *"Implementation of Cloud Computing Technology in Indian Education System"* IEEE ICCCNT12, Coimbatore, India, july 2012.

[7] Liu xuning,Song hongwei,He dongbin, Yang hao, *"Research of Campus Resource Management Based on Cloud Computing"* IEEE The 5th International Conference on Computer Science & Education Hefei, China. August 24–27, 2010.

[8] Ramendu Bikash Guin, Sayan Chakrabarti, Chinmoy Tarafdar, Sourav Mandal, Sourav Banerjee, Utpal Biswas, *"A smart Architectural concept for making of a University Education System using Cloud Computing Paradigm"* IEEE *World Conference on Information and Communication Technologies* 978-1-4673-0126-8/11 2011.

[9] Cloud Infrastructure and applications (CloudIA) framework of Hochschule Furtwangen University, Germany.

[10] Kiran Yadav *" Role of Cloud Computing in Education"* IJIRCCE, Vol. 2, Issue 2, February 2014.

[11] Thassanee Rodmunkong, Panita Wannapiroon, Prachyanun Nilsook *"The architecture ofInformation Management System through cloud computing according to Thai Qualifications Framework for Higher Education"* IEEE 2015.

[12] Abdullah Alshwaier, Ahmed Youssef and Ahmed Emam *"A new trend for e-learning in ksa using educational clouds"* ACIJ 2012.