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Online Learning in Cloud Technologies using U-Learning

Pavithra. P [1]
PG Scholar
Department of Computer Science and Engineering
Panimalar Engineering College
Chennai-600123

Malathi. S [2]
Professor
Department of Computer Science and Engineering
Panimalar Engineering College
Chennai-600123

Rajendiran.M[3]
Professor
Department of Computer Science and Engineering
Panimalar Engineering College
Chennai-600123

***Abstract*— All the Cloud applications were facilitated in these virtualization climate and gap equipment resources with each other. Cloud not exclusively decreases the sum however conjointly gives clients the ability to redo their framework. Cloud furnished with virtualization not exclusively advance assets sending however conjointly diminish upkeep esteem. A unique cloud infrastructure to provide high performance and traditional applications at the same time. Demand to reinforce its foundation, which may commit the obliged reckoning and area assets for U-learning environments. It is learned by interacting not simply with staff at your college, however conjointly it is specialists of various universities. The researchers can even take after their thoughts inside the machine space upheld by their school/college. Reexamine addresses and make up for lost time with lost classes with Lesson and recharge on the sensible use of thoughts, from your home. Or there will be consequences in the event that you support learning with contacts, utilize the group in light of line learning modules and unravel homework together with your colleagues Be a territory of the Cloud field wherever learning is nothing similar to examining.**

Keywords*— *Ubiquitous learning, Virtualization, Interactive learn, Remote Education

I. INTRODUCTION

Distributed computing innovations despite the actual fact that in their unexpected stages, have discovered means of way to amend the way requisitions are set to be created and entered. Distributed computing furnishes an ease declaration for academic organizations for their scientists, workers and learners. Graduate folks and organization staff area unit perpetually in demand to require in additional propelled data, nonetheless typically have restricted possibilities as an enclosed in accepted taking in. Separation instruction by methodology of a virtual learning setting is completely asked for to grasp these problems.

Edification is planned to be vital for the growth of humanity. Their education is needed for complete development of the kid. The numerous components of the planet it's pointed to arrange categories for the scholars because of environmental condition and ecological situation For some students it's troublesome to go away their nation for more edification because of restricted nation.[14][17] To soothe the scholars and to raise their learning many agglomeration primarily based establishment that is not solely give them enlightenment however additionally offers an opportunity to urge connected with the ability further.

Cloud primarily based knowledge is that the service will provide through online. As a substitute of keeping the benefit or the computer code mount to the system or the other computer one will have it on the network which may gain access from any a part of the planet through a computer with net affiliation.[15] There are innumerous edges of the cloud services that also are thought of by the educational establishment. With facilitate of the cloud services one will simply renovate the standard instructional field into cloud field so providing students the simplest.[13][16]

Conveyance technology, in turn will brilliantly confirmed to the establishments worldwide wisdom ought to be straightforward and also it must encourage youngsters the least bit levels. Everybody needs to know the importance of cloud and services in cloud. So that it make the huge impact in the future.

II. REVIEW OF LITERATURE

Cloud computing provides a widespread on demanding and elastic computing surroundings with terribly low value. Some cloud suppliers use bare-metal machine to supply a conventional grid computing like surroundings for HPC applications. However, HPC users still suffer from the similar drawbacks as victimization grid computing (i.e. High lease cost).

Jianbao Ren et.al [1] proposed Moving the high performance computing (HPC) to Cloud not only reduces the costs but also gives users the ability to customize their system. Besides, compared with the traditional HPC computing environments, such as grid and cluster which run HPC applications on bare-metal, cloud equipped with virtualization not only improves resource utilization but also reduces maintenance cost.

K. Blinco et.al[2]proposed The principal aim of this White Paper is to providing a summary of current trends in the development of e-learning technical infrastructure, with a view to provide feedback to a wide range of stakeholders interested in extending the boundaries of enriched technology-enabled learning.

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J. Boon et.al[3]proposed Trend watching reports are an indispensable resource in the e-learning domain.Many HRD departments consider these reports as essential cornerstones for the development of their e-learning strategy.The evualation results show that the reports do not meet basic quality criteria,such as "sound methodology"and "objectivity".

R. Sharpe and G. Benfield et.al[4] proposed This paper reviews the student experience of e-learning in higher education in order to identify areas worthy of future investigation.

F. Wild and S. Sobernig et.al[5][11] proposed Technology-enhanced learning has gained momentum in EuropeanHigher Education, especially in recent years. Traditional technology-enhanced learning functionalities such as delivery andcourse management are in the focus oflearning technology use within the insti-tutions, whereas authoring and collaboration tools need targeted support in the future.

A.W. Davis and I.M. Weinstein et.al[6] proposed Conferencing and collaboration applications provide both hard, quantifiable benefits and many soft, difficult-to-measure benefits. Conferencing and collaboration applications enable knowledge workers to do more than just exchange information; they also provide an environment for productive interaction.

N. Lawless and J. Allan et.al[7]This paper investigates methods of reducing stress on line and proposes some principles for constructing on-line collaborative events to ensure that stress is eliminated or at least minimised.

E.B. Cohen and M. Nycz et.al[8] This papers provides an overview of e-learning from its fundamentals (what is knowledge, what is teaching) through how e-learning is being implemented using campus-wide Learning Content Management Systems (LCMS).

M. Marchtin et.al[9][12] proposed As videoconferencing becomes more widely available in schools and in public libraries, it is important that there is a new awareness of its vast potential in order to ensure that this technology is fully exploited for the benefit of learning communities.

R. Roberts et.al[10]proposed Distance learning is characterised by the separation of place and/or time between teacher and learners and learning resources; it involves interactions that are synchronous or asynchronous; it can be conducted through a variety of media and may employ a variety of delivery methods.

Jianbao Ren et.al [18] proposed Moving the high performance computing (HPC) to Cloud not only reduces the costs but also gives users the ability to customize their system. Besides, compared with the traditional HPC computing environments, such as grid and cluster which run HPC applications on bare-metal, cloud equipped with virtualization not only improves resource utilization but also reduces maintenance cost.

Timothy Wood et.al [19] provided a Cloud Net avoids the reconfiguration issues by virtualizing the network connectivity as described and utilizes a set of migration optimizations to improve performance. Content-based redundancy (CBR) elimination techniques have been used to save bandwidth on links between network routers.

Sergio Iserte et.al[20]proposed to increase the performance of data centers, we analyze the performance attained by a cluster using the rCUDA remote GPU virtualization middleware and a modified version of the Slurm workload manager, which is now able to map remote virtual GPUs to job. The main side effects occurs such as increased acquisition costs as well as larger space requirements. Results show that cluster throughput is doubled at the same time that total energy consumption is reduced up to 40%.

Mukil Kesavan et.al[21]proposed to manage virtualized data centers. Issues in large-scale commodity data centers:

1) maintaining low operational overhead, given variable cost of performing management operations necessary to allocate resources

2) coping with the increased incidences of these operations' failures. Cloud Capacity Manager (CCM) Methodology is used. CCM provides up to 25 percent more resources for workloads and improves data center utilization by up to 20 percent, compared to the common alternative approach.

Wei Huang et.al [22] proposed to migrate Virtual Machine with RDMA to make High Performance computing. Currently, most VM environments use the Socket interfaceand the TCP/IP (Transmission Control Protocol/Internet Protocol) protocol to transfer VM migration traffic. RDMA (Remote Direct Memory Access) method is used for High performance virtual machine migration. We demonstrate that by using RDMA over xen. we are able to reduce the total migration time by up to 80%, and migration downtime by up to 77%.

D.P.Scarpazza et.al [23] proposed a major contribution of this approach is the automatic identification of global recovery lines to freeze the status of the machine.

Aggregate Remote Memory Copy Interface (ARMCI) method is used to migrate PGAS Applications using xen band. Using ARMCI, we can make that it is possible to virtualize communication and computation with minimal overhead and to provide seamless migration capabilities.

Henry Kasimz et.al [24] proposed performance comparison of the recent four-socket Server architecture on various high performance computing (HPC) workloads. Our methodology is based on two important factors. Evaluation Corporation (SPEC) Our analysis shows that no single architecture is the best for all types of workload. In addition, we found that the CPU clock speed for better performance.

Hyuck Han et.al [25] proposed the cache as a service (CaaS) model as an optional service to typical infrastructure service offerings. Specifically, the cloud provider sets aside a large pool of memory that can be dynamically partitioned and allocated to standard infrastructure services as disk cache. CAAS (Cache as a Service) method is used. The performance improvement gained using cache services clearly leads to reducing the number of (active) physical machines the provider users. Increases throughput, results in profit increase.

III. VIRTUALIZATION USING DISTRIBUTED COMPUTING

Data innovation is evolving quickly, therefore distributed computing life commencement came to research the subsequent era in has become one in all the foremost smoking buzzwords within the IT region. Various organizations and

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foundations are hurrying to characterize mists and provides cloud leads to alternative ways.

Distributed computing is Internet based assets, programming, and knowledge completely different mechanisms on interest, like the facility network includes the presence of server ways that have the flexibility to offer administrations; the cloud may well be seen as a unique access focus for all appeals close at hand from the globe far reaching customers. It allow clients to utilize provisions while not, the necessity to shop for, introduce, or facilitate programming on their near PCs or servers, stressing over a way to take care of these requisitions, the purchasers to achieve access to their individual indexes anywhere within the from any net scattered mechanism, from their telephones to their desktop workstations, simply the shopper pay in keeping with what quantity of and the way often he demand administrations.

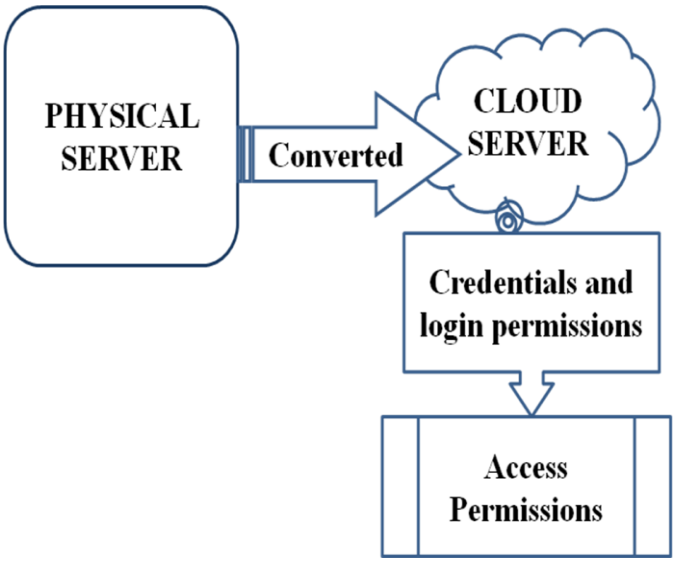

Fig.1 Cloud Server

New developments in processors, virtualization innovation, plate house, and broadband net gain access too fast, low cost servers have all consolidated to create distributed computing an urging ideal model. Virtualization breaks down the physical obstructions intrinsic in secluded assets, and robotizes the administration of those assets as a solitary component. There's a unprecedented potential for higher coaching division to assume an area in accomplishing a rectifiable produce within the learning economy on account of the ascent of the trans-disciplinary, practice based learning era. Colleges supply the prospect for interaction between institutional administration and foundation improves.

Dynamic exploration into the advances and procedures of affordable produce, and also the acquisition of neighbourhood authority and backing. Likewise, students these days are often alluded to as twenty first Century learners, totally on account of the ubiquitous access they have to engineering. What sets them separated from completely different eras is that the method they remodel knowledge and judge to partake within the instructive expertise. The virtualization in education system facilitates students to access their subjects from anywhere around the world. Though they did not attend the classes they may not miss the class and the subjects can be thorough as they can access the virtualized class tutorials with appropriate credentials. Virtual and private cloud applications can be accessed from any type of handheld devices.

IV. INTERACTIVE LEARNING USING U-LEARNING

The cloud classroom system provides application oriented cloud servers in virtual and private cloud which can be accessed globally using any type of handheld devices. Through virtual class room application any student can access their classes and subjects from anywhere with any type of system with their appropriate credential information.

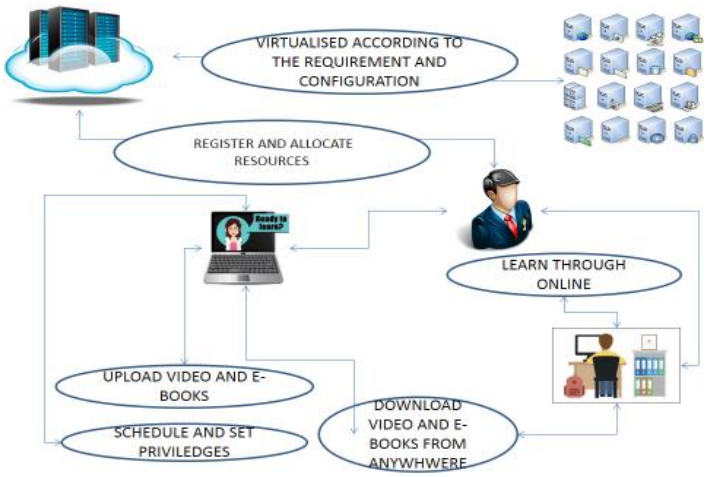

Fig.1 Architecture of U-Learning

The aim of our project is to create a virtual server for n number of users and to virtualized resources according to their needs. To satisfy their requirement and configure resources. Cloud server has to register and allocate resources, Administrator will create a login to sign up for teachers to upload videos related to the subjects for students those who miss or unable to attend the classes , thus the students who are not much educated in rural areas can also verify and clarify their doubts. Teachers has the rights to access the student details in turn students cannot verify or access teachers records. Thus creating a login for U-Learning (Ubiquitous learning) means from anywhere or at any place can verify details regarding subjects details, teachers has to schedule and set privileges to access details. There are separate id for students to login to access for downloading videos and e-books from anywhere any place incase they miss the class. Thus u-learning plays a vital role in getting all the details regarding their studies. This is new for web database stored all information into the placement will be effective. All information can be easily retrieve into the process. one can earn while studying and get degrees with flexible timings. The above benefits will be attained with best secured way. It reduces the man power required. It provides accurate information always. All years together gathered information can be saved and can be accessed at any time. All the Student information management can get the required information without delay. This system is essential in the colleges.

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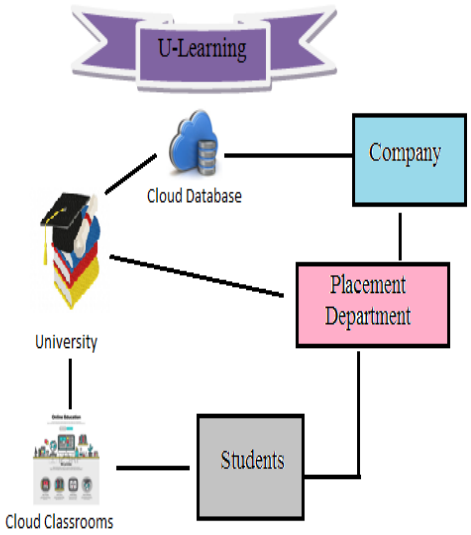

Fig.1 U-Learning

The web based applications implemented in the cloud with internet to improvise students' education virtually with efficient cloud database servers. It increases high bandwidth of internet access with cloud leads to lower prices by providing virtual classes. The cloud classroom system provides application oriented cloud servers in virtual and private cloud which can be accessed globally using any type of handheld devices. Through virtual class room application any student can access their classes and subjects from anywhere with any type of system with their appropriate credential information. It thus establishes strong digital network in computing devices with internet access to huge number of students.

V. EXPERIMENTAL SETUP

To create Cloud virtual server for online learning we used these languages for web design.

JSP:

HTML+java. Both HTML and JAVA code. Jsp file executed web server(or)App server.Jsp is used UI/FRONT END/Display purpose.

JSP Execution Procedure:

Jsp file converted to a servlet file. The servlet compiled @ generates for class.file loaded memory and executed by JVM as usual. User need not write HTML and JAVA code separately. Jsp used front end-writing business logic middle later. Jsp dynamic compilation which modified refresh the browser,change will be reflected.Many application jsp used first two tiers three tiers architecture is also called 2 tier architecture going forward in framework like structs and spring MVC is same 3 tier architecture.

MVC(Model View Controller):

Model is a data. Then View for display. Controller is a centralized controller application to do. Three tier Architecture information to user logic tier logical decision logic tier transfer data between preserver tier and data tier information is stored. Three tier architecture Increase performance, scalability, flexibility, maintainability.

Servlets:

Web Container is a servlets. Apache Tomcat, glass fish server. IBM websphere app features web server when request for abc.html which called servlet the page is called container special file request which servlets tomcats server, every servlets and every request map with one servlets multiple request fly server access servlets,needs web.xml map help file servlet-class name, url pattern servlet mapping normal class. http servlets feature special class provide to needed. Request and Response is object Annotations new features @webServlet("abc.html")Servlets XML file you can do mapping using Annotations that words Tomcat Server.

VI. SCREEN SHOTS

Online training course for students where videos are uploaded by teachers and can be accessed by students. The web based placement management system in college manages student's educational information. Segregation of students details which meets various companies requirements and ensure their proficiency for attending interview in that particular company is their motive.

In our project we made this process inculcated in webdatabase that stores and handles students academic details such as their marks, for attending interview to particular companies.

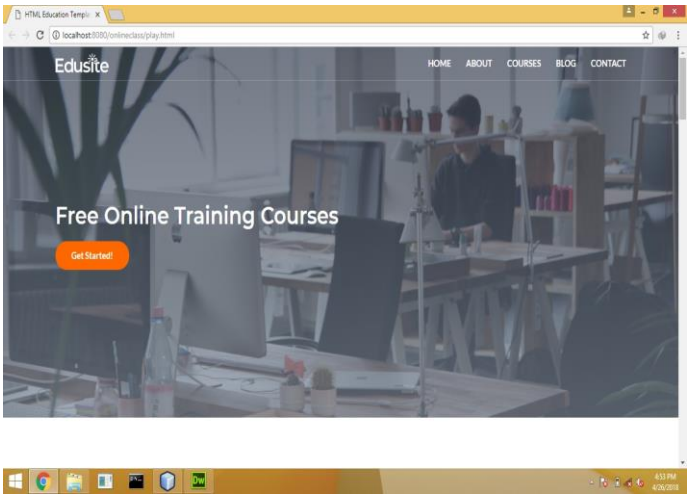

Fig.1 Online Training Course

We have different logins for students, college personal and company personals to view and update the details required for them. Arrears student will be considered eligible for attending to the interview.

There are company vacancy list will be included easily requirement students attending interviews. In this all information are updated and anyone can get their authenticated information like students can see the list of companies they are eligible to attend interview and companies can view the students who meet their eligibility criteria. My project is developed with JAVA for frontend and MYSQL backend.

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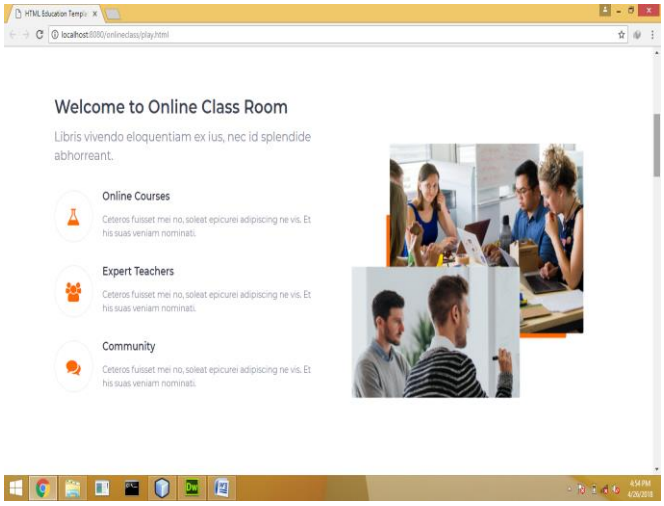

Fig.2 Online Classroom

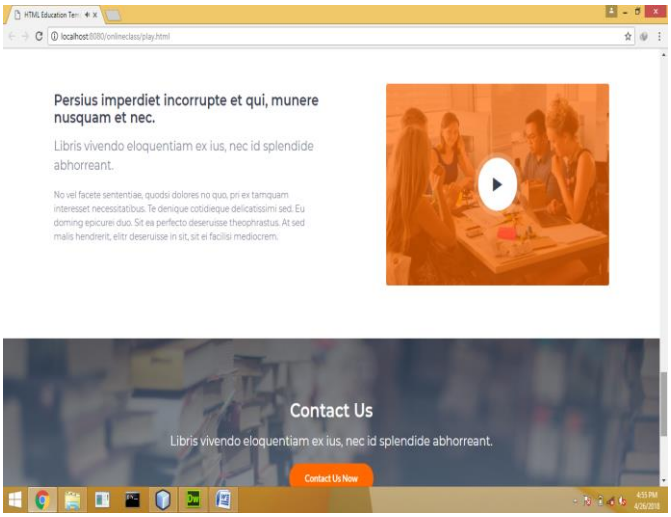

Fig.3 Live Stream Video

V. VI. CONCLUSION

Based on the nature, the physical Server is converted into cloud server. Administrator plays a role in creating a login for teachers and students in which the physical servers are dividing into several cloud servers and are stored as a rack. Here the Teachers will set a privileges and scheduling, in turn teachers will upload all the notes and videos regarding studies so that it will help a student in accessing resources even if they not attend the class. Students will download all the stuffs they need. Here in our proposed system we, bridges the gap between education standards of city locality students and rural area students. This type of cloud server creates huge impact over society and the lifestyle of the student. Thus our virtual class room application regardless used as an efficient tool to provide services to rural area students. It thus establishes strong digital network in computing devices with internet access to huge number of students.

In our proposed system we, are setting up a Restriction to block up unwanted sites to be not viewed by the students. All videos will be viewed only by staffs they will restrict unwanted sites .Thus it bridges the gap between education standards of city locality students and rural area students. This type of cloud server creates huge impact over society and the lifestyle of the student. It thus establishes strong digital network in computing devices with internet access to huge number of students. So that it will create a mass impact of sharing the knowledge among the scholars.

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