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UNIVERSITY CAMPUS AUTOMATION USING CLOUD COMPUTING

Major Project Report submitted in partial fulfillment of the requirements for the award of the Degree of B.E in Computer Science and Engineering

By

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Under the Guidance of
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Stanley College of Engineering & Technology for Women

(Autonomous)

Chapel Road, Abids, Hyderabad – 500001

(Affiliated to Osmania University, Hyderabad, Approved by AICTE, Accredited by NBA & NAAC with A Grade)

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CERTIFICATE

This is to certify that major project report entitled **University Campus Automation using Cloud Computing** being submitted by

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In partial fulfillment for the award of the Degree of Bachelor of Engineering in Computer Science & Engineering to the Osmania University, Hyderabad is a record of bonafide work carried out under my guidance and supervision. The results embodied in this project report have not been submitted to any other University or Institute for the award of any Degree or Diploma.

Guide
Ms. Sumayya Afreen
Assistant Professor

Head of the Department
Dr Y V S S Pragathi
Dept of CSE

Project Coordinator **External Examiner**

DECLARATION

We hereby declare that major project work entitled **University Campus Automation using Cloud Computing** submitted to the Osmania University, Hyderabad, is a record of original work done by us. This project work is submitted in partial fulfillment of the requirements for the award of the degree of the B.E. in Computer Science and Engineering.

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First of all, we are grateful to **The Almighty God** for establishing us to complete this Major Project. We pay our respects and love to our parents and all our family members and friends for their love and encouragement throughout our career.

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We place on record our sincere gratitude to Prof. Satya Prasad Lanka, Principal, for his constant encouragement.

We deeply express our sincere thanks to our Head of the Department, Prof Y V S S Pragathi, for encouraging and allowing us to present the Major Project on the topic **University Campus Automation using Cloud Computing** at our department premises for the partial fulfillment of the requirements leading to the award of the B.E. degree.

It is our privilege to express sincere regards to our project guide Ms. Sumayya Afreen, for the valuable inputs, able guidance, encouragement, whole-hearted co-operation and constructive criticism throughout the duration of our project.

We take this opportunity to thank all our faculty, who have directly or indirectly helped our project. Last but not least, we express our thanks to our friends for their cooperation and support.

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ABSTRACT

University Campus Online Automation Using Cloud Computing project aims in developing a cloud based computing Placement Automation System for the placement cell so as to ease their work in managing the placement process. This System will facilitate the interaction between college students, the placement cell of the college and the recruiting companies. It will maintain student information such as grades, courses taken, endorsements from faculty, etc. All this student information will be uploaded by the student into this system made as a project and in turn will be made public after verification by the placement cell so that the companies can go through the information uploaded by the students for further recruitment processes.

Cloud computing is used to provide users with computer resources on-demand any time over the Internet. E-management systems usually require many hardware and software resources. There are numerous educational institutions that cannot afford such investments, and cloud computing is the best solution for them. For educational purposes lecturers and researchers can leverage cloud computing to enhance management of college lab information. The main objective of this paper is to present how cloud computing provides on-demand virtual desktops for problem solving, and on-demand virtual labs for special courses that can be connected in a network over a cloud management platform. The focus is how cloud services can be used, how they can be integrated into the existing infrastructure, and how new didactic models could look. The proposed solution helps in significant design when compared to any physical infrastructure procurement and maintenance for the user institution as well as the entire science and higher learning community.

Guide
(Sumayya Afreen)

Signature

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CHAPTER 1
INTRODUCTION

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1.1 About the Project

Over the past few years, the idea of cloud computing, a popular trend in IT, has gained much impetus and has become a more popular phrase in information technology. Generally cloud computing may be defined as, "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". Many groups have started implementing these new technologies to further decrease costs through improved machine utilization, reduced administration time and infrastructure costs.

The biggest challenge is allowing students to take advantage of learning technology while keeping the class productive and well managed. In a poorly managed classroom, the teaching and learning process will not be effective. Previous stud-ies show that the difficulties in teaching computer lab sessions include losing class-room control and student attention, difficulties in monitoring of lab exams, and teach-ing visually impaired students. In contrast, well-managed classrooms provide a positive learning environment that improves students' performance and increases their academic engagement and achievement. However, most of the college computer laboratory management methods are outdated and cause heavy work pres-sure for staff me

Cloud computing is the environment that enables customers to use applications on the Internet such as storing and protecting data while providing a service. So, Cloud computing has become a convenient way to realize instructional principles in learning environments that follow the constructivist view of learning, supporting on demand, self-controlled learning environments. With cloud computing, several service delivery models can be realized, delivering Infrastructure, Platform and Software as a Service to support learning environments and supports an optimized utilization of the university's IT resources, using load balancing and even over-provisioning.

Through this project we are trying to achieve a software that could reduce the workload on the placement cell of every college and to implement it effectively so as to connect the cell companies and students together on one platform by managing time and reducing the recruitment and application process.

In the proposed approach, Infrastructure as a Service (IaaS) provides virtual machines (VMs) on demand for students of the. These machines are customized for courses and laboratory exercises and provisioned to build virtual laboratories. Platform as a Service

(PaaS) goes a step further and offers the students a framework to deploy their developed programming exercises in a well-defined environment. Finally, Software as a Service (SaaS) makes software services, like lecturing assist tools, or development tools, available for multiple users. In summary, cloud computing allows a flexible and adaptive use of computing resources on demand and thus supports powerful learning environments in terms of a constructivist conception of learning in an effective way. Our cloud management system provides different services that are categorized into the well-known cloud service model SaaS, PaaS and IaaS. Obviously, the more specialized (e.g. SaaS) the less customizable by the student

1.2 Objectives of the Project

Students in the field of ICT education need to learn problem solving techniques and those cannot be learned without interaction with real-life computer problems in training labs. Those skills include troubleshooting skills, which are considered one of the most problematic skills in terms of requirements from the lab perspective as the instructor needs to put the machine into a broken state to test or train the student the capabilities of troubleshooting.

Generally, the management systems found in different college and university campuses prove to be inconvenient for all faculty, students and administration. Nowadays most educational institutions are equipped with computer labs to provide training for students that qualify them for their professional life. In today's educational environ-ment, the need to provide classrooms with the best educational technology available is vital. The need of a virtualized lab solution is crucial in this particular case as an example. Current solutions are not exciting from the user perspective; statistics show that students tend to spend incomparable time on Facebook and similar social media websites than on eLearning and educational online systems, this has taught us that the blend of social media and education is crucial for incomparable user experience and ultimate efficiency of the educational process.

1.2 Scope of the Project

Managing a computer based classroom is not the same as managing a traditional classroom. The individual attention required by students involves walking from one student to another is demanding work and not quite effective. This normally results in the rest of students starting to lose interest, or staying indolent till the teacher finishes attending to other

students. Also, computers bring with them unexpected technical problems that can divert students' attention and focus from the topic being taught in the class. The teacher may need to share student work with other students. As a result, the teacher will lose a lot of valuable time moving from one student to another, and not all the students will receive the same attention from the instructor. Thus, the need to use an application that can solve these problems is important. The application of CMS (classroom management system software) examined in this study enables teachers to educate, monitor, and communicate with the entire class from one central computer. CMS standardized the lab management, and frees staff from heavy work pressure and improves the learning environment.

The main objective of this study is to explore the significance of using a classroom management system in a computer lab session at Middle East College, Sultanate of Oman to ensure smooth technology integration and effective computer lab manage-ment. This was conducted through a survey and feedback from both teachers, stu-dents, and IT management on the effectiveness of using a classroom management software in enhancing the learning environment and improving students' perfor-mance. Moreover, a comparative analysis of students' performance during the semes-ter was undertaken to assess the impact of implementing the CMS.

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CHAPTER 2

LITERATURE SURVEY

2.1 Current Problem

Rapid advancements in technology in today's world have been accompanied by the need for equipping classrooms with the best educational technology. The biggest challenge in incorporating technology into learning is allowing students to take advantage of learning technology while ensuring that the class is productive and well managed. The main objective of this paper is to study the effects of using a classroom management system in computer lab sessions for smooth technology integration and effective computer lab management. The practice was evaluated through comparative analysis of the student performance, survey results and feedback from teachers, students, and IT management staff. Generally, the responses of participants were positive, more than 90% of them agreed that the system enhances the learning environment. The results analysis showed that there is a noticeable increase in student performance.

2.2 Existing System

The success of educational institutions largely depends on how they manage relationships and communicate with key groups including students, parents, alumni, teachers and other staff. Managing educational organizations is a job marred with complexities. On one hand, it takes robust data management capabilities to organize information and make it easily accessible. On the other hand, it also requires continuous and non-stop running of operations in an optimized and smooth way.

Education management software primarily developed for schools, colleges and universities. It helps users in managing all aspects of their organization, from fee payment to the scheduling of courses, management of student credit points and curriculum. This causes great confusion and mismanagement of the systems at the college or university to make it up to the required standards of storage of information.

It is observed that during practical sessions students, instead of completing their practical works students do many other activities /stuff which is not important. Monitoring each and every student during practicals is difficult for every teacher and also students have many questions to ask the teacher about practicals. To overcome this problem, the **University Campus Automation using Cloud Computing.**

2.2 Proposed System

The proposed solution suggests incorporation of relevant technologies, most notably, Cloud Computing to make the administrative system more robust, dynamic, convenient and interactive. It stems from the vision that there is no need to limit an administrative system to admission, scheduling of courses and just for academic purposes and why not this benefit be given to the most important part of the college that is the placement cell of the college so as to ease their job with placements and companies.

Career Resource centers or Placement Cells in colleges are the support providers which shape the students to a brighter future. Some of the greatest responsibilities of the college are embedded in the functioning of this department. And hence we thought why not make their job easier by making a software functioning on the basis of cloud computing so as to meet their students and the companies requirements so that all of these parties can enjoy these resources which make their jobs effortless.

Features of the proposed model include:

- Complete lifecycle Management - From R&D to clinical trials to manufacturing and compliance, this model helps drive innovation throughout the entire product lifecycle. Configure workflows for a wide range of research projects and laboratory processes. Interface with automated sample handling systems, analytical instruments, and system-to-system communications via web services, file transfer (text, CSV, HL7, ASCII, etc.) and direct database communications in the network.
- Quality and Safety - this network allows the faculty to maintain closed and secure transactions of information carried between different systems, including student provided systems.
- Interoperability - Data sharing across systems is easy.

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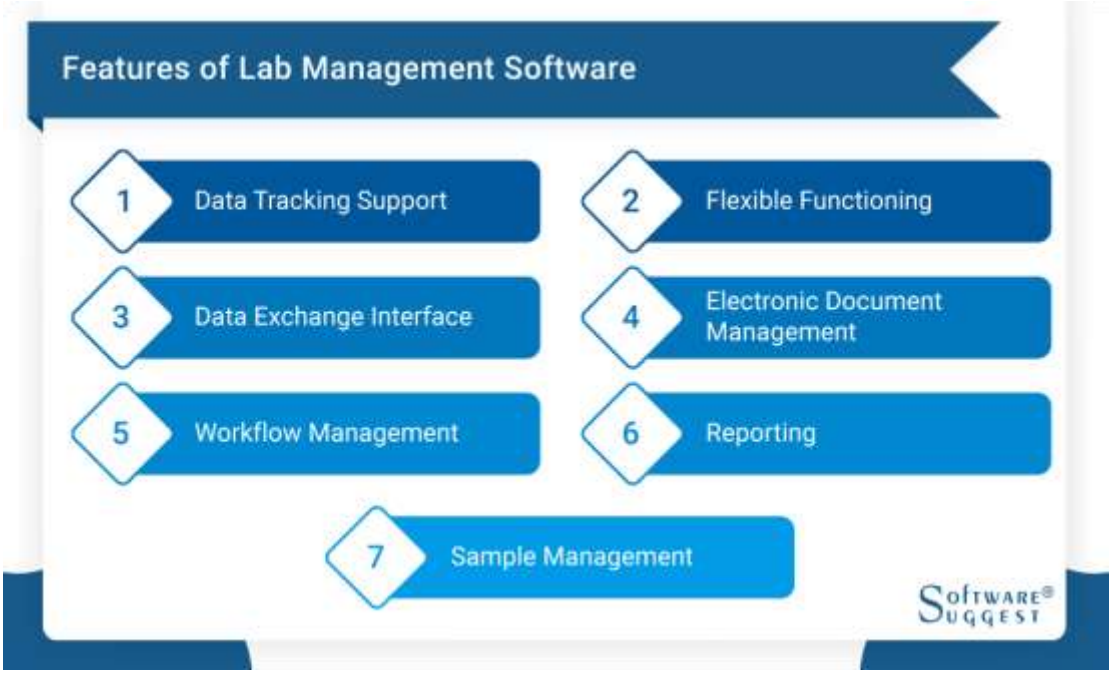

Fig 2.1 Features of an effective Lab Management Software


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CHAPTER 3

CLOUD COMPUTING AS TECHNOLOGY

3.1 About Cloud Computing

Cloud computing is a general term for anything that involves delivering hosted services over the internet. These services are divided into three main categories or types of cloud computing: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS). Simply put, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet ("the cloud") to offer faster innovation, flexible resources, and economies of scale. You typically pay only for cloud services you use, helping lower your operating costs, run your infrastructure more efficiently and scale as your business needs change.

Cloud computing works by enabling client devices to access data and cloud applications over the internet from remote physical servers, databases and computers. Organizations of every type, size, and industry are using the cloud for a wide variety of use cases, such as data backup, disaster recovery, email, virtual desktops, software development and testing, big data analytics, and customer-facing web applications. For example, healthcare companies are using the cloud to develop more personalized treatments for patients. Financial services companies are using the cloud to power real-time fraud detection and prevention. And video game makers are using the cloud to deliver online games to millions of players around the world.

If you use an online service to send email, edit documents, watch movies or TV, listen to music, play games or store pictures and other files, it is likely that cloud computing is making it all possible behind the scenes. The first cloud computing services are barely a decade old, but already a variety of organizations—from tiny startups to global corporations, government agencies to nonprofits—are embracing the technology for all sorts of reasons.

3.2 Definition and Analysis

A cloud can be private or public. A public cloud sells services to anyone on the internet. A private cloud is a proprietary network or a data center that supplies hosted services to a limited number of people, with certain access and permissions settings. Private or public, the goal of cloud computing is to provide easy, scalable access to computing resources and IT services.

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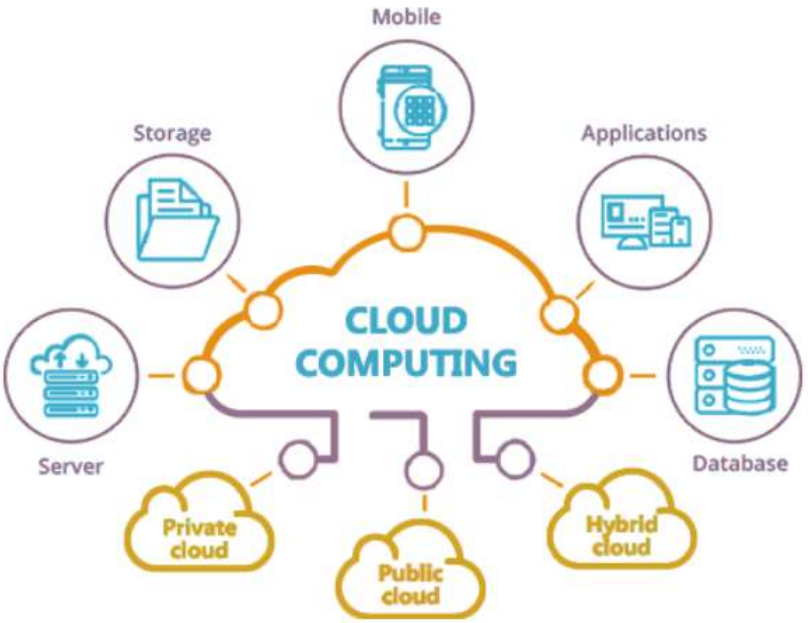

Fig 3.1 A Primer on Cloud Computing

Cloud infrastructure involves the hardware and software components required for proper implementation of a cloud computing model. Cloud computing can also be thought of as utility computing or on-demand computing. The name cloud computing was inspired by the cloud symbol that's often used to represent the internet in flowcharts and diagrams. An internet network connection links the front end, which includes the accessing client device, browser, network and cloud software applications, with the back end, which consists of databases, servers and computers. The back end functions as a repository, storing data that is accessed by the front end.

Communications between the front and back ends are managed by a central server. The central server relies on protocols to facilitate the exchange of data. The central server uses both software and middleware to manage connectivity between different client devices and cloud servers. Typically, there is a dedicated server for each individual application or workload.

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Cloud computing relies heavily on virtualization and automation technologies. Virtualization enables the easy abstraction and provisioning of services and underlying cloud systems into logical entities that users can request and utilize. Automation and accompanying orchestration capabilities provide users with a high degree of self-service to provision resources, connect services and deploy workloads without direct intervention from the cloud provider's IT staff.

3.3 Types of Cloud Computing

Cloud computing can be separated into three general service delivery categories or forms of cloud computing:

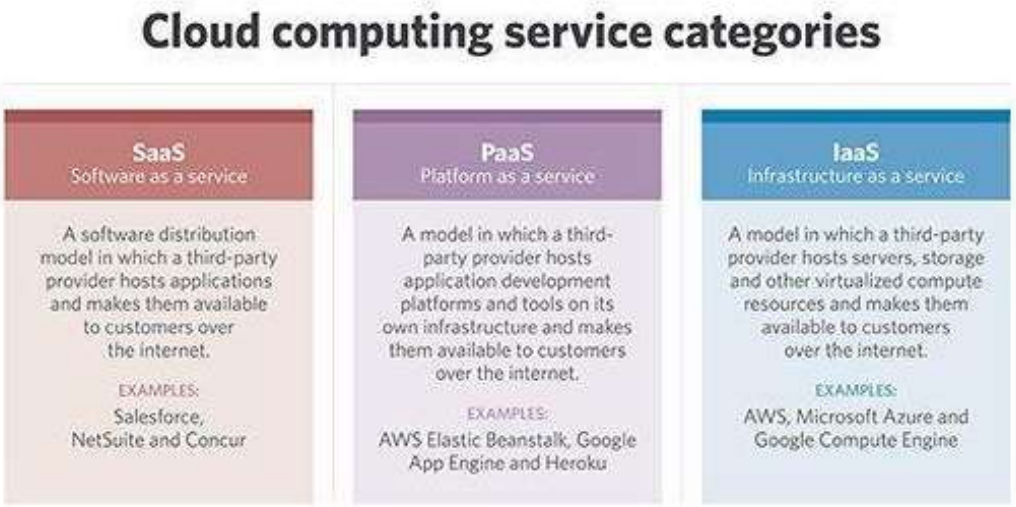

Fig 3.2 Scope of Cloud Computing

- **IaaS**

  IaaS providers, such as Amazon Web Services (AWS), supply a virtual server instance and storage, as well as application programming interfaces (APIs) that let users migrate workloads to a virtual machine (VM). Users have an allocated storage capacity and can start, stop, access and configure the VM and storage as desired. IaaS providers offer small, medium, large, extra-large, and memory- or compute-optimized instances, in addition to enabling customization of instances, for various

workload needs. The IaaS cloud model is closest to a remote data center for business users.

- **PaaS**

  In the PaaS model, cloud providers host development tools on their infrastructures. Users access these tools over the internet using APIs, web portals or gateway software. PaaS is used for general software development, and many PaaS providers host the software after it's developed. Common PaaS products include Salesforce's Lightning Platform, AWS Elastic Beanstalk and Google App Engine.

- **SaaS**

  SaaS is a distribution model that delivers software applications over the internet; these applications are often called web services. Users can access SaaS applications and services from any location using a computer or mobile device that has internet access. In the SaaS model, users gain access to application software and databases. One common example of a SaaS application is Microsoft 365 for productivity and email services.

3.4 Cloud Computing Deployment Models

In the basis of security and resource sharing, cloud computing may involves following four model-

A. Private cloud

Private cloud infrastructure is designed for the needs of a particular organization. So, only users of that organization may access cloud services. IT services and data centers are maintained by the organization on its cost. Large organizations launch their cloud to meet their enterprise solution.

B. Community cloud

Community cloud infrastructure is shared among different organizations working together in the same types of business environment or cooperating with each other to

achieve their business goal. They involve a third party to govern, manage and secure the cloud.

C. Public cloud

Public cloud infrastructure provides their services in the public domain. These services may be free or as pay per use. We can access cloud services as web based applications through the internet.

D. Hybrid cloud

Hybrid cloud infrastructure deploy the combination of above model (private, public & community clouds).It provides facilities to the service providers for extending their domain as per need. It provides a unified environment to integrate, manage different types of cloud services.

E. Multi-cloud Model

In addition, organizations are increasingly embracing a multi-cloud model, or the use of multiple IaaS providers. This enables applications to migrate between different cloud providers or to even operate concurrently across two or more cloud providers. Multi-cloud deployments should become easier, however, as providers' services and APIs converge and become more standardized through industry initiatives such as the Open Cloud Computing Interface.

Organizations adopt multi-cloud for various reasons. For example, they could do so to minimize the risk of a cloud service outage or to take advantage of more competitive pricing from a particular provider. Multi-cloud implementation and application development can be a challenge because of the differences between cloud providers' services and APIs.

3.5 Advantages of Cloud Computing

As we all know that Cloud computing is a trending technology. Almost every company switched their services on the cloud to raise the company growth.

1. Back-up and restore data: Once the data is stored in the cloud, it is easier to get back-up and restore that data using the cloud.
2. Improved collaboration : Cloud applications improve collaboration by allowing groups of people to quickly and easily share information in the cloud via shared storage.
3. Excellent accessibility: Cloud allows us to quickly and easily access store information anywhere, anytime in the whole world, using an internet connection. An internet cloud infrastructure increases organization productivity and efficiency by ensuring that our data is always accessible.
4. Low maintenance cost: Cloud computing reduces both hardware and software maintenance costs for organizations.
5. Mobility: Cloud computing allows us to easily access all cloud data via mobile.
6. Services in the pay-per-use model: Cloud computing offers Application Programming Interfaces (APIs) to the users for access services on the cloud and pays the charges as per the usage of service.
7. Unlimited storage capacity: Cloud offers us a huge amount of storage capacity for storing our important data such as documents, images, audio, video, etc. in one place.
8. Data security: Data security is one of the biggest advantages of cloud computing. Cloud offers many advanced features related to security and ensures that data is securely stored and handled.

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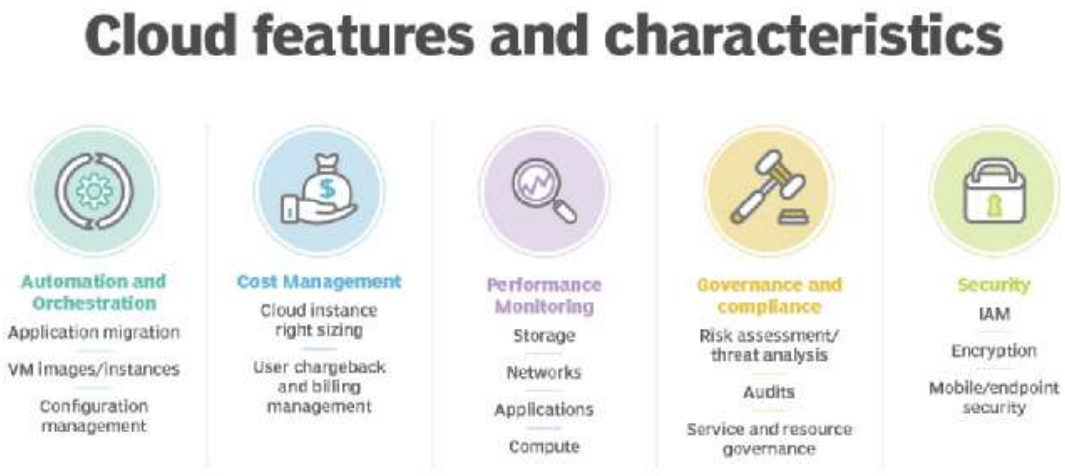

Fig 3.3 Features and Characteristics of Cloud Computing

3.6 Disadvantages of Cloud Computing

A list of the disadvantage of cloud computing is given below -

1. Internet Connectivity: As you know, in cloud computing, every piece of data (image, audio, video, etc.) is stored on the cloud, and we access this data through the cloud by using the internet connection. If you do not have good internet connectivity, you cannot access this data. However, we have no other way to access data from the cloud.

2. Vendor lock-in: Vendor lock-in is the biggest disadvantage of cloud computing. Organizations may face problems when transferring their services from one vendor to another. As different vendors provide different platforms, that can cause difficulty moving from one cloud to another.

3. Limited Control:As we know, cloud infrastructure is completely owned, managed, and monitored by the service provider, so the cloud users have less control over the function and execution of services within a cloud infrastructure.

4. Security: Although cloud service providers implement the best security standards to store important information. But, before adopting cloud technology, you should be

aware that you will be sending all your organization's sensitive information to a third party, i.e., a cloud computing service provider. While sending the data on the cloud, there may be a chance that your organization's information is hacked by Hackers.

3.7 Cloud computing vs. traditional web hosting

Given the many different services and capabilities of the public cloud, there has been some confusion between cloud computing and major uses, such as web hosting. While the public cloud is often used for web hosting, the two are quite different. A cloud service has three distinct characteristics that differentiate it from traditional web hosting:

- Users can access large amounts of computing power on demand. It is typically sold by the minute or the hour.
- It is elastic -- users can have as much or as little of a service as they want at any given time.
- The service is fully managed by the provider -- the consumer needs nothing but a personal computer and internet access. Significant innovations in virtualization and distributed computing, as well as improved access to high-speed internet, have accelerated interest in cloud computing.

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CHAPTER 4

PROPOSED ARCHITECTURE

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4.1 Architecture

Implementation consists of all those activities that take place to convert an old system to a new system. The new system may be totally replacing the existent manual or automated system or it may be a major modification to an existing system. The method of implementation and time scale to be adopted is found out initially. Next the system is properly tested and at the same time the users are trained in the new procedure. The technical objectives include:

- Build a web-scale cloud-based learning management system with extremely modular design and multilingual, highly customizable, front-end Web-based UI with cutting edge web technologies like HTML5/CSS3 and AJAX.
- Integrate Cloud-based virtual training labs using Microsoft Azure with the learning management system to provide interactive intelligent virtual training environment for ICT training that include computer networking, computer programming, Server Administration, database administration, and advanced high-end technical ICT courses.
- Offer on-demand cloud hosted virtual labs with support for snapshots. Snapshots allow students to easily take snapshots at any given moment during the lab time, in effect freezing the lab and providing a point-in-time that they can return to anytime later, or share via the built-in collaboration platform with their instructor or peers.
- Virtual training labs that include a complete virtually isolated network with multiple machines to demonstrate given deliverables by course designer / instructor.
- Build the “Intelligent Lab Advisor” embedded in the virtual labs. The Intelligent Lab Advisor intelligently detects the student achieving the required training goals, as well as guides the student along the training path, effectively offering pre-packaged top-notch instructor experience and allowing for a much enhanced self-study (or group-study) experience.
- Utilize the cloud computing “Pay-as-you-go” business model so users only pay for the time they use on virtual labs, thus providing cost-effective access to the large number of computing resources during ICT training
- Build a content delivery and hosting network for true infinite scaling; federated content hosting might also be added on the platform later.
- Building mobile support through standard web implementation; that leverages the capabilities of smartphones available in the market these days

4.2 Hardware Requirements

- Processor – i5 or above.
- Minimum RAM requirement – 4GB.
- Hard Disk – 100 GB. B.

4.3 Software Requirements

- Windows 7, 8 or 10.
- Amazon Web Services

4.4 Amazon Web Services (AWS)

Amazon Web Services (AWS) delivers a set of services that together form a reliable, scalable, and inexpensive computing platform "in the cloud".

Fig 4.1 Amazon Web Services

Computer services include Virtual machines, infrastructure as a service (IaaS) allowing users to launch general-purpose Microsoft Windows and Linux virtual machines, as well as preconfigured machine images for popular software packages. Most users run Linux on Azure, some of the many Linux distributions offered, including Microsoft's own Linux-based Azure Sphere. App services, platform as a service (PaaS) environment letting developers easily publish and manage websites.

Cloud and on-premises infrastructure and services to provide your customers and users the best possible experience. Seamlessly integrate on-premises and cloud-based applications, data and processes across your enterprise. Build, manage and continuously deliver cloud applications—using any platform or language. Get secure, massively scalable cloud storage for your data, apps and workloads.

CHAPTER 5
IMPLEMENTATION

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Clone github repository

- From the repository, select the Clone button.
- Copy the clone command (either the SSH format or the HTTPS).
- If you are using the SSH protocol, ensure your public key is in Bitbucket and loaded on the local system to which you are cloning.
- From a terminal window, change to the local directory where you want to clone your repository.
- Paste the command copied from Bitbucket, for example $gitclonehttps://username@bitbucket.org/teamsinspace/documentation-tests.git

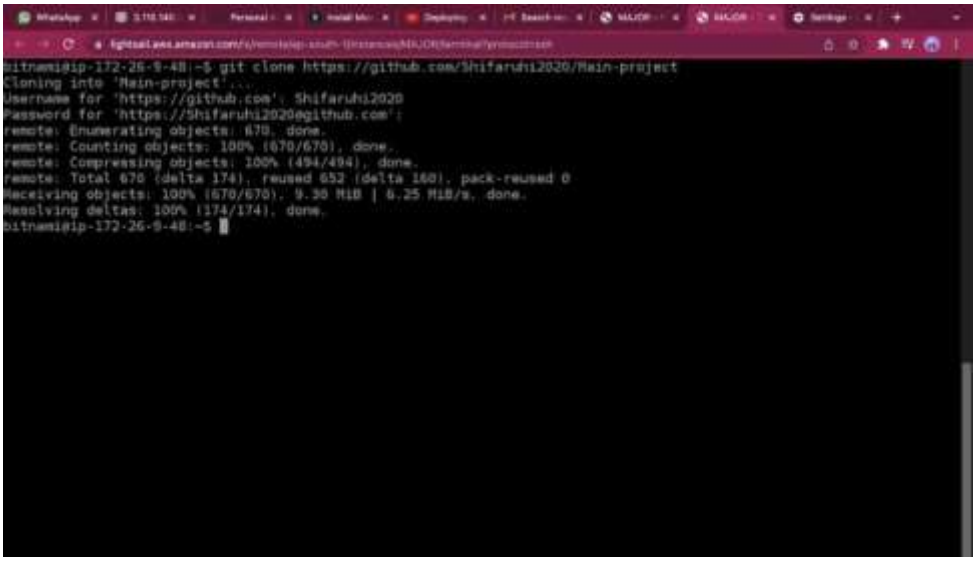

Fig 5.1 Opening GitHub In terminal

Open project folder

In the lightsail instance terminal open or change to the project directory so that the frontend and backend code can be integrated with the lightsail service for deploying on the cloud platform so that later on the website or the portal can be hosted command used is: cd Main-project.

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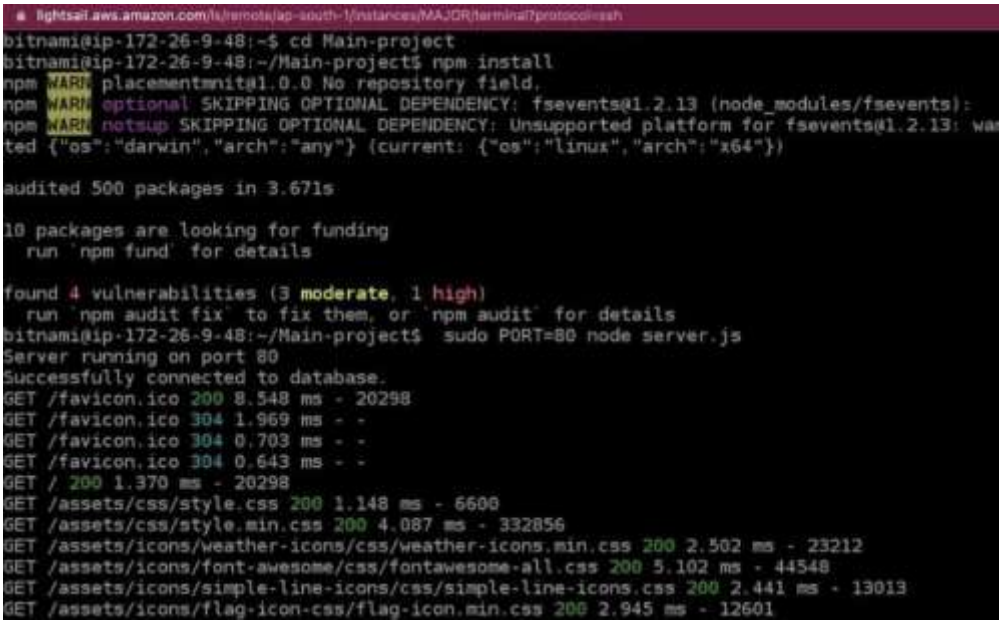

Fig 5.2 Running the lightsail instance

Configure the database folder and connect to the database

vi app/services/mongodb.service.js is the visual editor command used to edit or open the database file for connecting to the database being used further in the project

SCRAM Authentication

1. next step is to add few changes
2. mongodb://stanley:stanley@127.0.0.1:27017/placementstanley?authMechanism=SCRAM-SHA-1&authSource=placementstanley
3. This change is added so as to configure and to verify the supplied user credentials against the user's name, password and authentication database.
4. (SCRAM) is the default authentication mechanism for MongoDB.

Changing base URL

1. Command Used: vi app/services/template.service.js
2. template.service.js folder is opened for editing and the base url is changed to the url of the lightsail instance.
3. replace existing baseUrl with this http://3.110.148.203

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To run and configure the portal on the LightSail service instance

Whenever we close the instance, the portal also closes because the hosting has stopped. To run the portal again after closing It we need to follow the following steps:

- connect to aws Lightsail terminal
- cd Main-project
- npm install
- sudo PORT=80 node server.js

We are using the no sql database mongo db. MongoDB is a cross-platform, document-oriented database that provides high performance, high availability, and easy scalability. MongoDB works on the concept of collection and document.

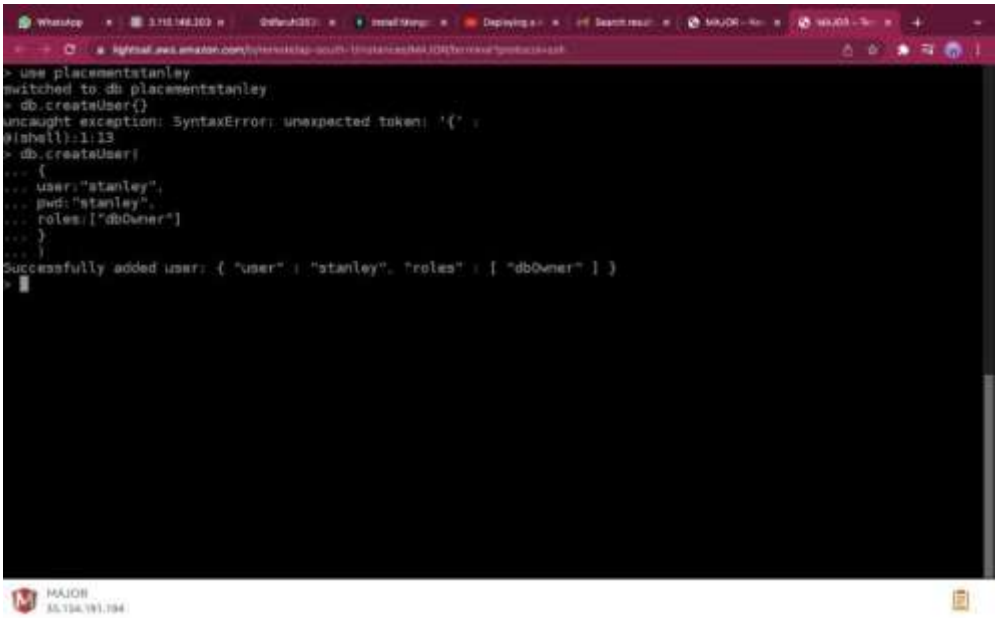

Fig 5.3 Creating the Database

The two users are created

1. Admin
2. Student

Since this dB is No SQL database we can't view the data. So as to view the data we have used Robo 3T. Robo 3T is made for growing professional teams, offering a variety of ways to view and interrogate data collections, including sophisticated aggregations, native Mongo JSON extensions, traditional SQL queries, and a drag and drop query builder.

CHAPTER 6
RESULTS

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As soon as we host the portal using the light sail service we can click on the link below or provide the instance URL in the browser so that we can access the portal on that particular port.

Click on the LightSail port http://3.108.92.198 which will redirect us to the portal

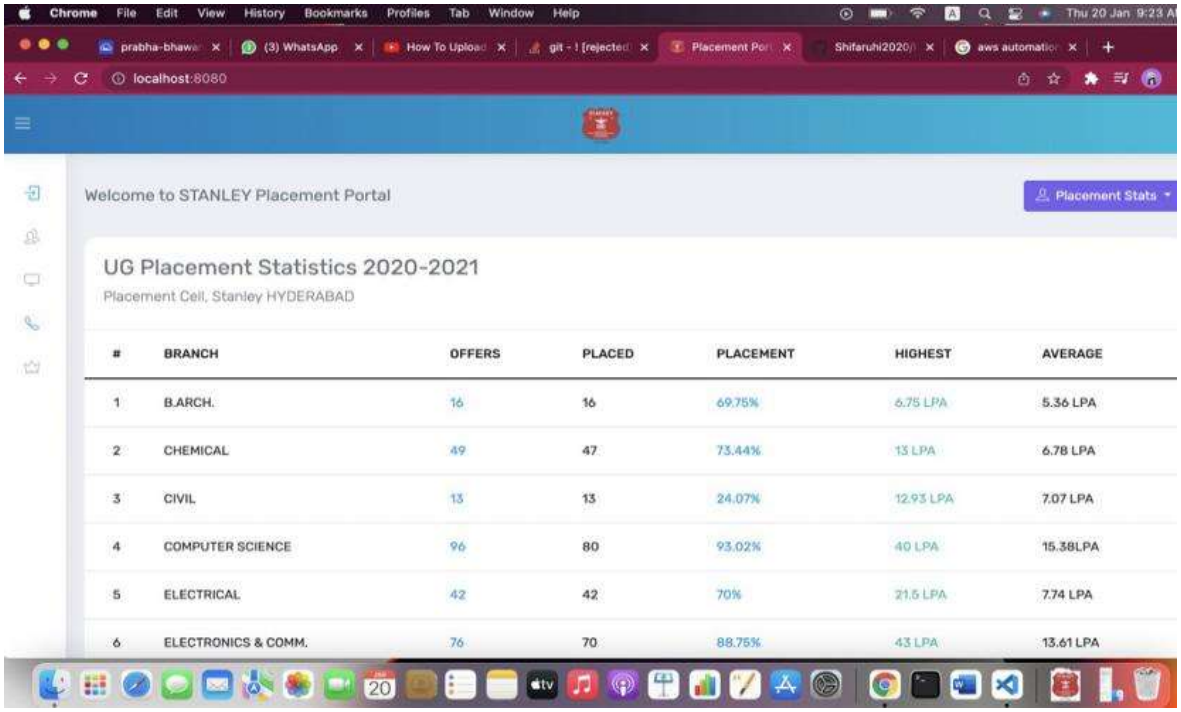

Fig 6.1 Final View of Portal

The above picture shows what our final portal looks like.

We can go to the login page and login with the credentials provided in the database. After successfully entering the right credentials, we will send an otp or a code via the mail we have provided in the database. These are as specified earlier in the database.

Our portal as of now has only login functionality. After the user has logged in he can view many other pages like the profile page where the user can upload resume and update the credentials. The admin user has extra benefits unlike the student's user.

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The admin has access to the company updates and can update which company is upcoming to the college for the students.

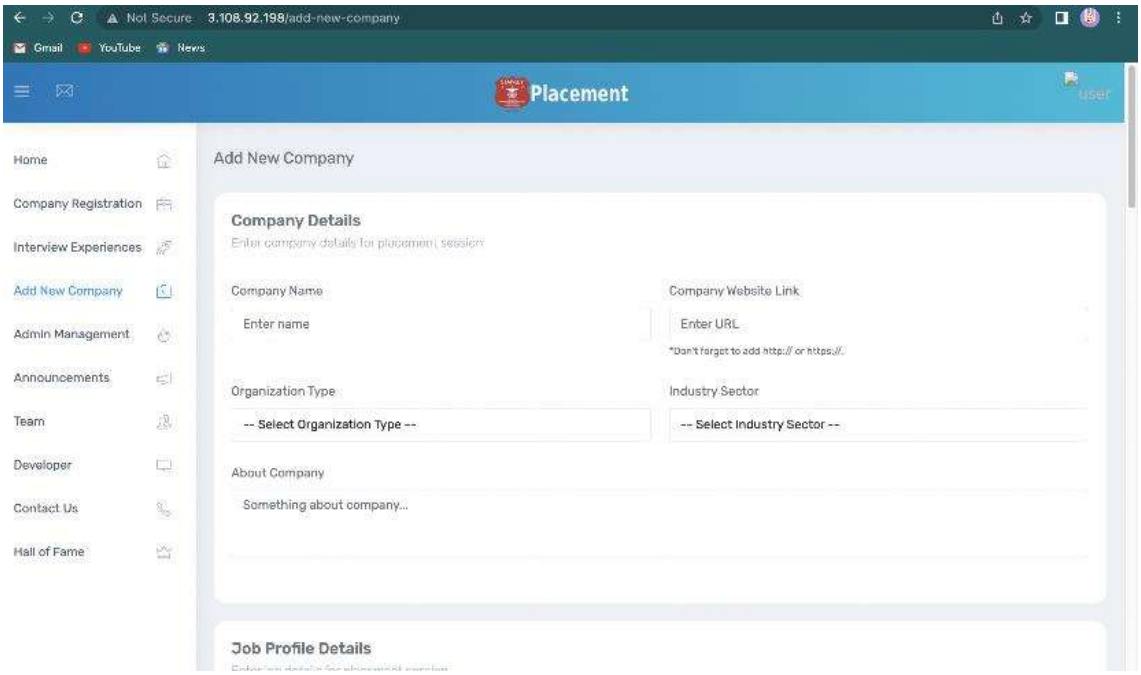

Fig 6.2 Admin add new company page

This dashboard allows the user to view new companies with the college's placement office.

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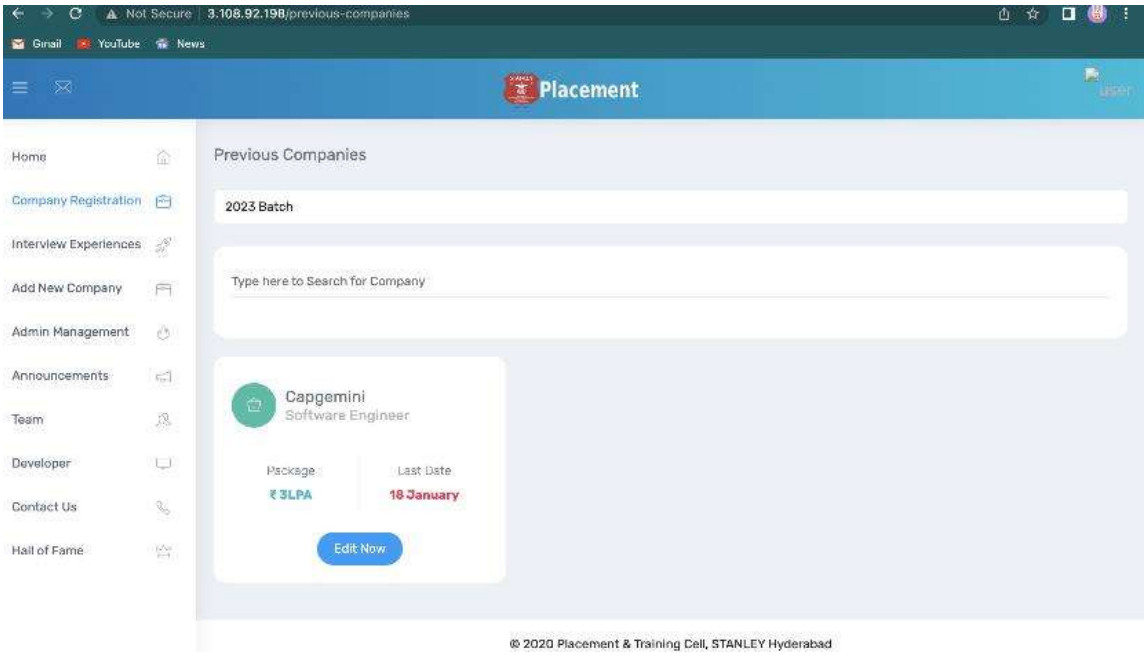

Fig 6.3 Checking for new Company

The admin can view the user or the student experience through the user experience page.

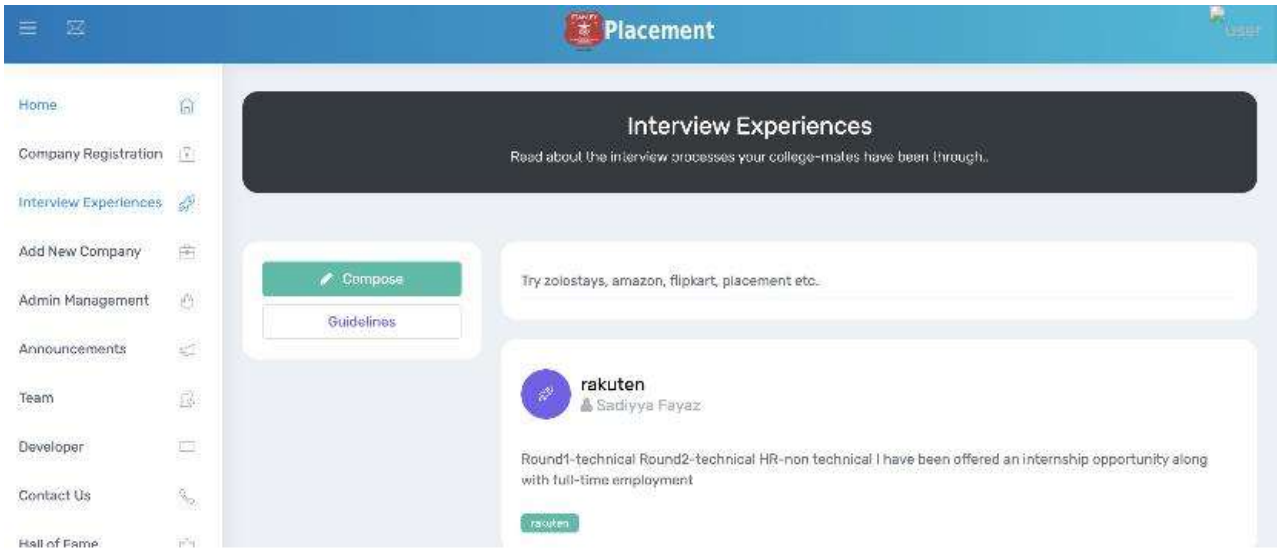

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Fig 6.4 Past Interview Experience Page

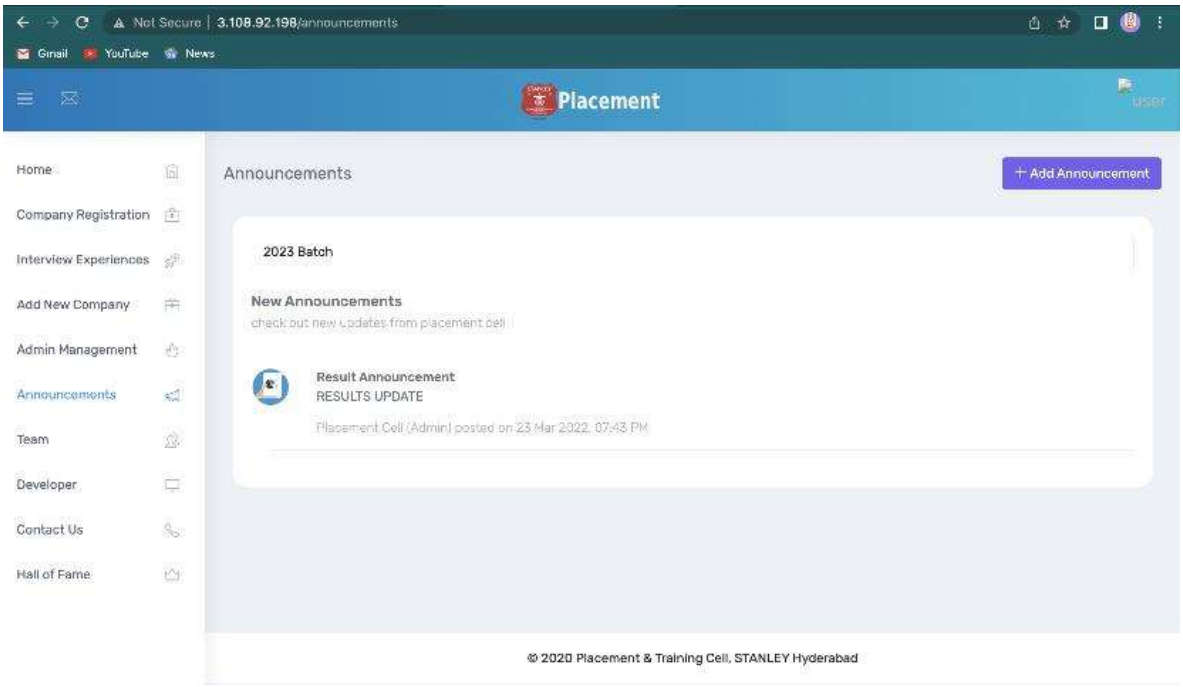

Fig 6.5 Announcement Page

The admin can also put up announcements as required.Checking the Interview Experiences of the candidates page

The portal also allows users to reset the password of any account as authorized.

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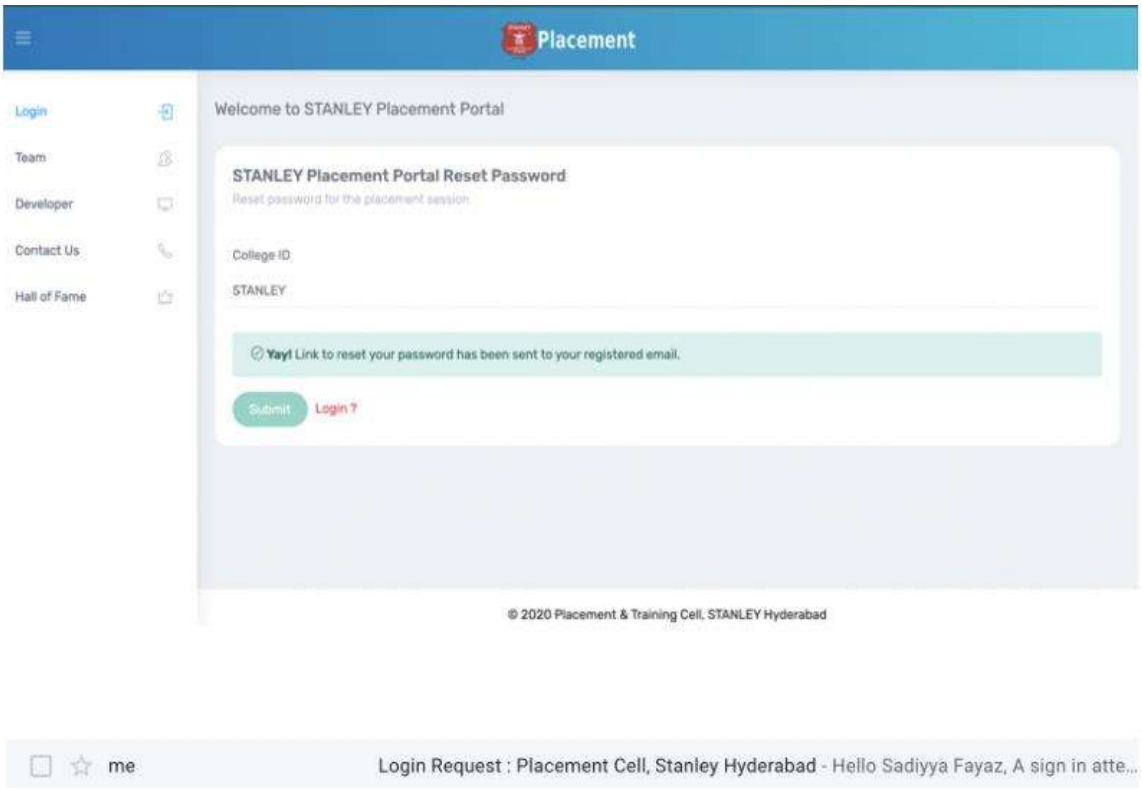

Fig 6.6 Password Reset Page

As we reset the password, we get a reset mail where we can reset the password and login again. The above picture shows the login mail we get as soon as we login. The mail consists of the otp to login.

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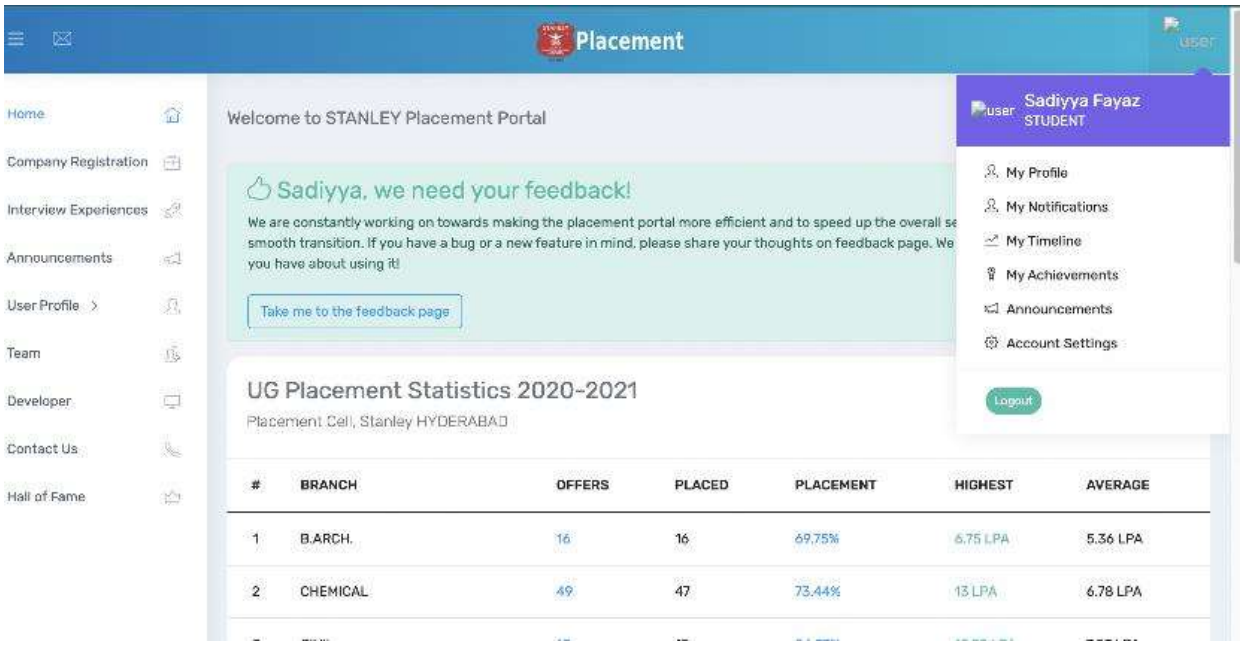

Fig 6.7 Profile view Page

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CHAPTER 6
CONCLUSION

This project is expected to provide a solution to the hectic schedule during the placement season in colleges. This also is an opportunity for us as a team to explore different computer science technologies that can be applied in various regular uses and learn to deliver the very same to many more important the current technologies can make easier.

With the continuous deepening of the reform of modern education, the traditional way of artificial management has not met the requirements of the modern laboratory. Based on the analysis of the existing problems in laboratory management in Colleges and universities, this paper puts forward the construction scheme of intelligent cloud laboratory information management systems. The purpose is to form a new management mode on the basis of campus network, Internet of things technology and cloud computing platform, so as to realize the intelligent management of laboratories.

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CHAPTER 7

FUTURE SCOPE

Over 30% of enterprise IT decision-makers identified public cloud as their top priority in 2019, according to the "RightScale 2019 State of the Cloud Report." Still, enterprise adoption of the public cloud, especially for mission-critical applications, hasn't been happening as quickly as many experts predicted.

The system is designed after taking into consideration all the requirements of students and faculty and placement and training department but there can be improvements in some areas and we accept the drawbacks of our system.

Overall the evaluation confirms that the system has the po-tential to improve the teaching delivery method. It enhances student engagement, increases teacher-to-student interaction and is effective for flip teaching. It helps the teacher to demonstrate, communicate with the students via chat sessions, and keep the students on-task. It is perfect in saving teachers' time and reducing workload, allows group learning and collaboration, and promotes knowledge sharing. Also, students can communicate with the instructor without interrupting other students. It is recom-mended to expand the computer lab management system to other disciplinary laboratories and establish combined management in all laboratories through the IT management department. Also it allows IT staff to install software and solve any particular problem without moving to the class and interrupt the educational process.

This system can be extended further to provide a forum in order to discuss the disadvantages of the system and in the way in which it can be solved. The Exam cell of the college can also be linked with our system so that there is no need to keep two separate systems and the database of the exam cell can be connected with the college database which will help in double verification of marks and other important details. Recommendation can be implemented in the system which will help the student to increase their academic performance and also help them in extra curricular activities.

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CHAPTER 8

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