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An automated examination system using cloud computing technology

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ABSTRACT

Traditional Exam cell activity mostly includes a lot of manual paper work. The aim of the project is to build a centralized system so that all the examination activities can be done effectively and efficiently for both students and staff. The final system would constitute a computerized module aimed at replicating offline exam cell process. The system is a new concept which came into existence because of a large amount of data being on paper. The automated system for exam cell department will benefit both the students as well as exam cell department staff to easily handle the entire task related to exam cell in contrast to the existing manual system. This system will make the procedure of exam cell in an organized manner. Using this, paperwork and confusions can be reduced and the rate of work done can be increased. All the activities such as Exam form filling, ATKT form filling, photocopy and revaluation form filling, Form filling for RLE, Form LOR, MOI, Name Correction form etc. can be executed properly and easily using this automated system. With the help of this system, students can submit their forms online and will have no need to stand in a long queue waiting to submit their forms. The admin can also generate the Transcripts and Letter of Recommendation, and can also verify, confirm the photocopy and revaluation of each applied student by using the CLOUD COMPUTING Technology.

Keywords: *ATKT (Allowed to keep terms), Automation, Exam form, Revaluation, Photocopy, LOR, RLE, MOI, Cloud computing technology etc.*

1. INTRODUCTION

This system emphasis on to overcome the drawbacks of traditional paper work for exam form filling by implementing an automated examination system. The centralized automated system is efficient as it overcomes important manual system drawbacks namely speed, precision, and simplicity. This system is like a common bridge between staff and students, thus making the activities convenient for each regarding examination. It is a system that will make the exam cell process much organized. The system can be customized based on the requirement of College. This System allows students to access required information regarding various exam forms, services and notifications of the college and submit the form online thus reducing processing time.

The main goal of the system is to make the system available for students anytime, anywhere and on any device and students will have remote access to the website where they can fill their exam form and other forms and the task of admins will be given to the exam cell staff where they can verify the students details by accessing their forms and check their details from database.

Students can fill the following types of forms:-

- Exam form

- KT Form
- Photocopy Form
- Revaluation Form
- Transcript Form
- LOR Form
- MOI Form
- RLE Form
- Name Correction Form
- Duplicate Marksheet Form

These forms are made using the Google forms. Thus, they are highly secured.

1.1 CLOUD COMPUTING

A. What is a cloud?

A cloud refers to a network or internet that can be accessed from a remote location. It provides services over a public or private network and can be accessible from anywhere.

B. What is Cloud Computing?

Cloud Computing is a networking paradigm which involves the concept of sharing computing resources, by providing dynamically scalable infrastructure capable of hosting end-user applications, data and file storage rather than a local server or a personal computer.

C. Cloud Service Models:

- Software As A Service (SAAS)

SAAS is a one-to-many-computing model where Software is delivered to the customer either as a service on demand or it can also be a pay-as-you-go model hosted by the vendor or the internet service provider over a network, typically internet.

- Infrastructure As A Service (IAAS)

Infrastructure as a service provides basic storage and computing capabilities as standardized services over the network. Servers, storage systems (databases) and networking equipment are pooled and made available to users to manage heavy workloads.

- Platform as a Service (PAAS)

Platform as a Service benefits the software development world rather than the customer. It provides a computing platform for the quick and easy development of software web applications, development, and deployment of tools without the necessity of purchasing and maintaining the requirements underneath it.

D. Public, Private and Hybrid Clouds:

There is a necessity to develop and deploy applications on the public, private and hybrid cloud.

- Public Cloud:

Public Cloud is owned and it is operated by third parties where delivering of superior economies of scale is made to the customers, as the infrastructure maintenance and costs are spread among the various users.

- Private Cloud:

Private cloud pertains to a single enterprise or organization. Private cloud vendor mainly focuses on data security and provides a great control which mostly lacks in the public cloud.

- Hybrid Cloud:

Hybrid cloud is a combination of public and private cloud models. Hybrid cloud model increases the flexibility of computing. Using hybrid cloud model, service providers can utilize third-party cloud providers in a partial or full manner thereby increasing its scalability.

2. EXISTING SYSTEM

Currently, the entire exam cell activities are done manually and because of this manual process, the entire task becomes very difficult and time-consuming. The students need to fill offline forms and submit the forms to the exam cell along with the exam fees by standing in a long queue wasting a lot of time for verification purpose. Then, the exam cell staff needs to make an entry of the exam details in the system manually of each and every student. All the details related to exam form filling such as student's details, semester, department, subject and in case of KT specifying the subjects need to be filled manually in the system by the exam cell staff members and requires manual calculations. The staff members of exam cell also have to fill all the details of students personally for record keeping purpose. The students in the existing system are required to fill all the forms manually and to submit the forms by standing in a long queue wasting a lot of time for verification purpose. Once the form is verified, again the form has

to be submitted to the office. Due to all these reasons, there is a need to develop a better system, which will overcome all these problems easily and efficiently.

3. PROBLEM STATEMENT

Most of the colleges are maintaining student information in records and hence a lot of paperwork goes into it. When the number of records increases the precipice, it becomes difficult to maintain the information of each student in the antiquated system. Maintaining the records manually makes the system prone to errors and requires more labor and time for processing the records. The existence of a large amount of data being on paper makes the analysis of results a tedious task, apart from the unmanageable amount of data that is generated in an institution from various departments. In a manual system as the information is scattered, it is redundant and collecting relevant information is very time-consuming. Most of the colleges do their exam cell activity manually, where students collect various forms such as Exam form, Revaluation form, ATKT form, Photocopy form and many other forms. Each student faces the same problem of standing in queues and leaving their lectures to do their exam form verification and submission.

4. PROPOSED SYSTEM

4.1 Working of the System

This system comprises of the student's information and admin of exam cell who will be handling the system. Thus the main actors of the system are students and exam cell department.

a. Students

When the students need to fill an exam form, the students need to go to the college website, select the exam forms menu and from it select the appropriate branch and semester. An exam form would appear, the student needs to fill the form with correct details, then via an email, the student would receive the acknowledgment receipt. Then the students need to take print of the acknowledgment receipt and along with the exam fees directly submit it to the exam cell without any need of waiting in a long queue for verification. Also, the students can get an update of the college notifications via website i.e., dates of release of exam forms or services[1].

b. Exam Cell Department

The exam cell department needs to upload the exam forms and the other service forms on the website. When the students submit their forms, all their data is stored in the form of Google sheets on the cloud. The staff just needs to collect the college copy of the acknowledgment receipt and exam fees from the students. When any student fills the service form, the exam cell needs to be ready with service letters on time. The department needs to be alert in analyzing the database for which student needs which service and provide them with the particular service[1].

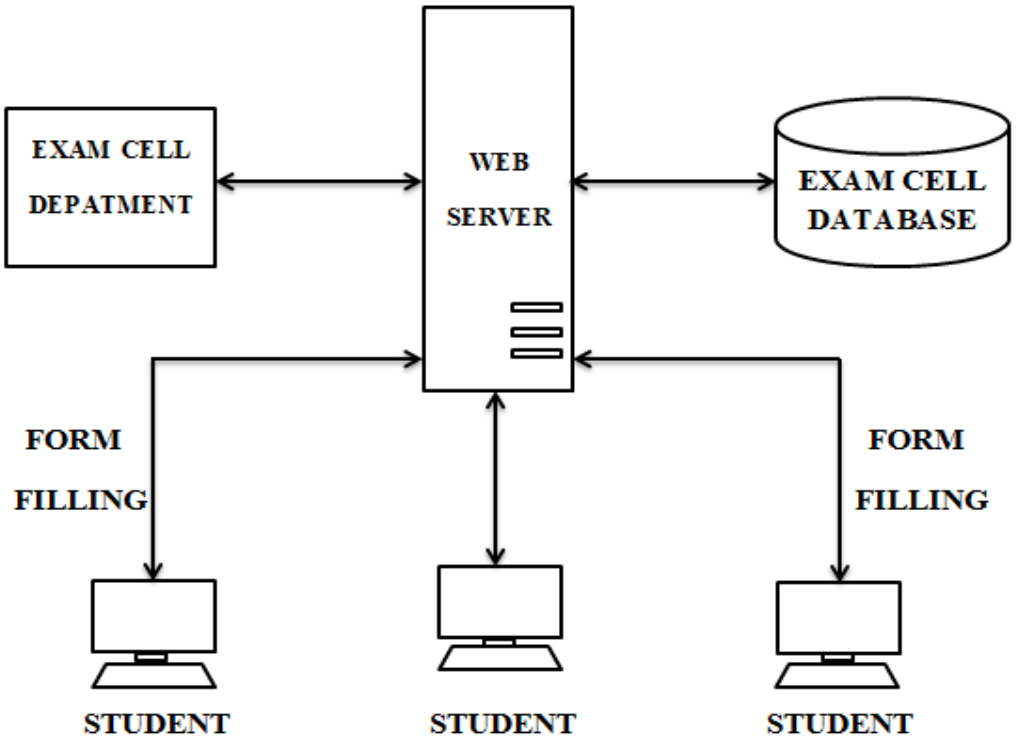


Figure 4.2.1. Block diagram of E-Exam cell

4.2 Google Add-ons

Add-ons run inside Google Sheets, Docs, Slides, and Forms. Add-on is either a hardware unit that can be added to a computer to increase its capabilities or a program utility that enhances a primary program. Examples of add-ons for a computer include cards for sound, graphics acceleration, modem capability, and memory. Software add-ons are common for games, word processors, and accounting programs. An add-on is a software extension that adds extra features to a program. It may extend certain functions within the program, add new items to the program's interface, or give the program additional capabilities. For example, Mozilla Firefox, a popular Web browser supports add-ons such as the Google toolbar ad blockers and Web developer tools.

4.2.1 E-mail Notification

By default, Google Forms will save form responses in its Responses tab. For configuring email notifications click the three-dot menu button on the right, and select Get email notifications for all new responses. That will give us simple notification emails like the one below each time when the form is filled out. If we want to share a form through a chat or email message, we can get a link to the form. The Email Notification add-on for Google Forms will send email messages every time when a Google form is submitted.

4.2.2 Document Studio

Use Document Studio to create professional looking and sophisticated documents including personalized business letters, student test results, customer invoices, event tickets, vendor contracts, purchase orders, sales pitches and any other type of document that we need to generate on a repetitive basis. We'll never have to copy-paste data again. The documents can be generated in a range of formats including PDF, Microsoft Word, and Excel, PowerPoint presentations, Open Office formats, HTML web pages or plain text. We can also include Google Maps images, QR Code images and PayPal payment links in our generated documents and emails using the built-in spreadsheet functions that become available once we install Document Studio.

5. IMPLEMENTATION

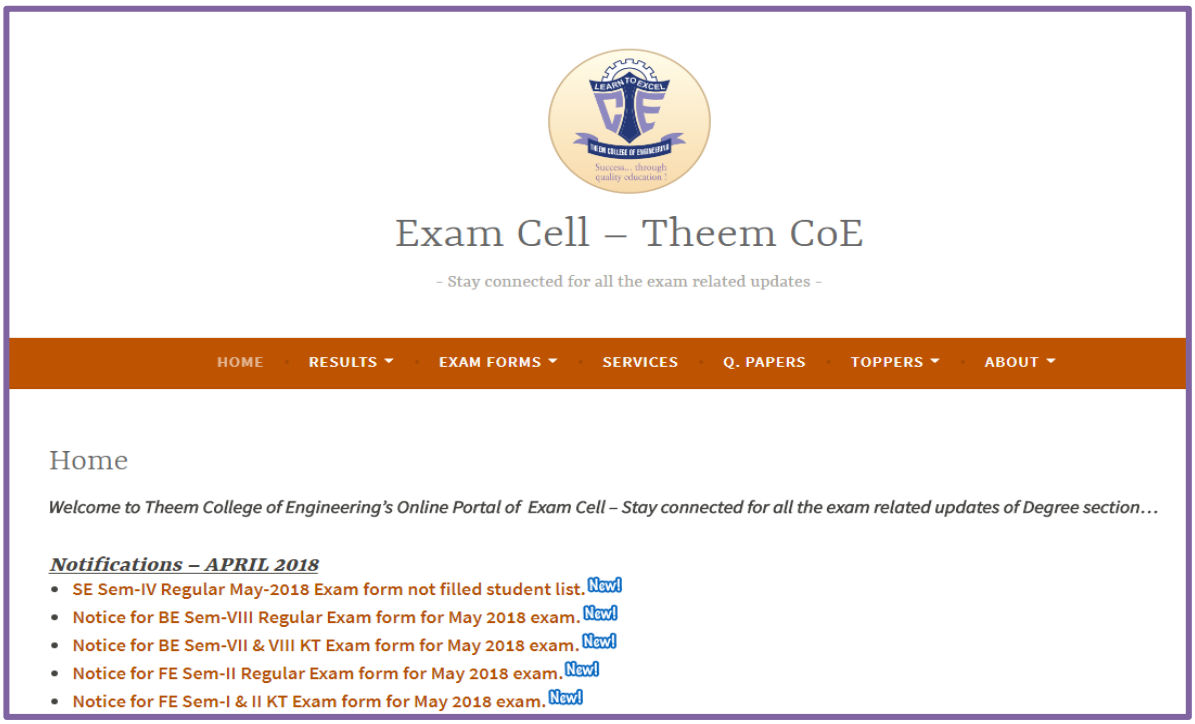


Figure 5.1 College Website (Home page)

Figure 5.2 College Website (Exam forms)

Figure 5.3 College Website (Services)

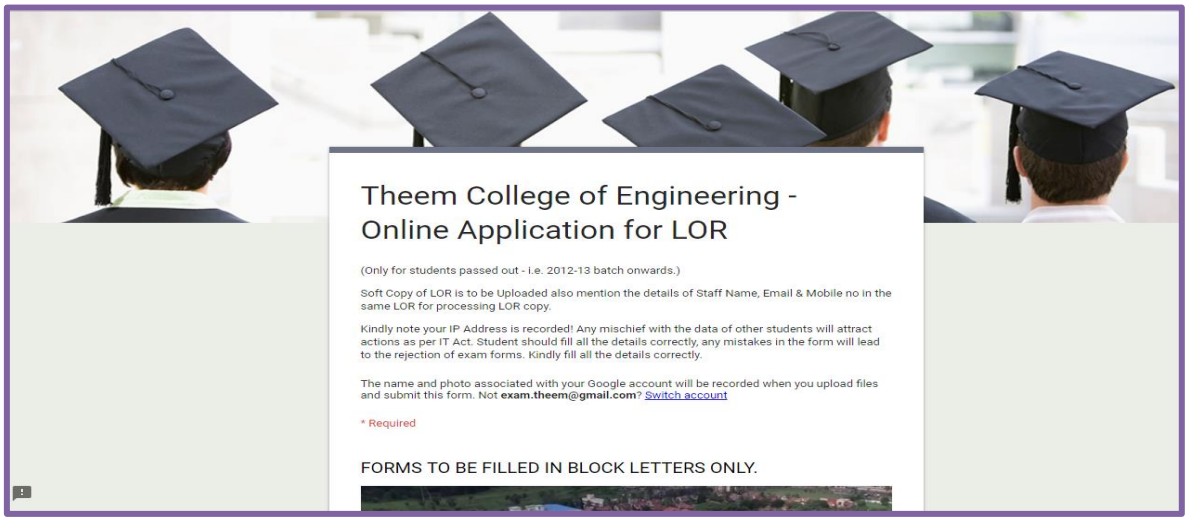
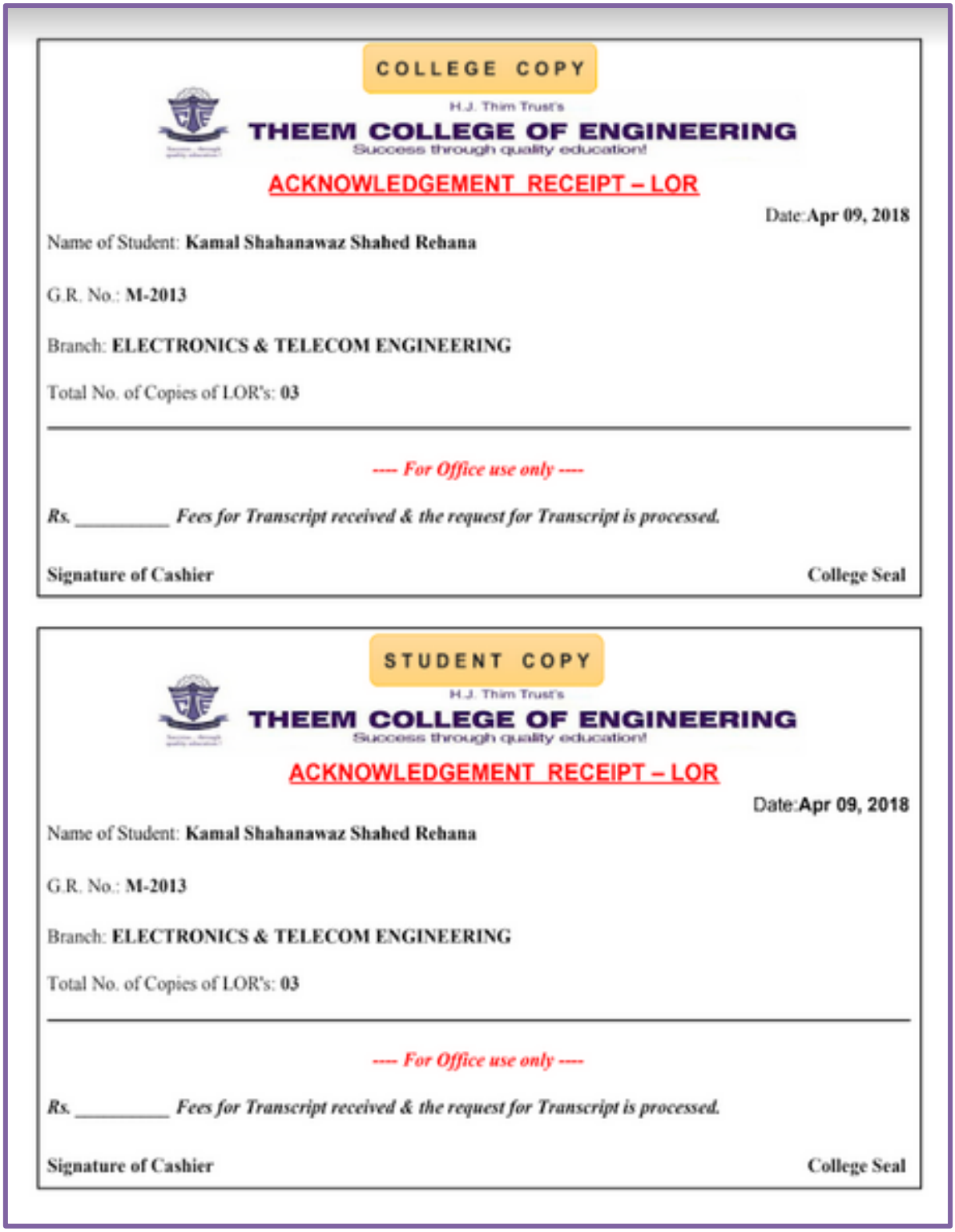


Figure 5.4 LOR Form



COLLEGE COPY

H.J. Thim Trust's

THEEM COLLEGE OF ENGINEERING

Success through quality education!

ACKNOWLEDGEMENT RECEIPT – LOR

Date:**Apr 09, 2018**

Name of Student: **Kamal Shahanawaz Shahed Rehana**

G.R. No.: **M-2013**

Branch: **ELECTRONICS & TELECOM ENGINEERING**

Total No. of Copies of LOR's: **03**

---- For Office use only ----

Rs. _____ Fees for Transcript received & the request for Transcript is processed.

Signature of Cashier **College Seal**

STUDENT COPY

H.J. Thim Trust's

THEEM COLLEGE OF ENGINEERING

Success through quality education!

ACKNOWLEDGEMENT RECEIPT – LOR

Date:**Apr 09, 2018**

Name of Student: **Kamal Shahanawaz Shahed Rehana**

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Branch: **ELECTRONICS & TELECOM ENGINEERING**

Total No. of Copies of LOR's: **03**

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Rs. _____ Fees for Transcript received & the request for Transcript is processed.

Signature of Cashier **College Seal**

Figure 5.4 Acknowledgement Receipt of LOR

6. FUTURE SCOPE

A website is never said to be complete there is always room for improvement and enhancement as the technology improves website need to be updated. E-Exam Cell is made specifically for Students and Admins of the college, in this project the new feature such as NBA system can be implemented which will make the task easy for faculty members where they will have direct access towards students marks. We have developed this project in the form of a website, which can also be viewed in a mobile format. In future, a mobile application can be built for various smart phones such as Android, IOS, and Windows etc.

7. CONCLUSION

This is an automated approach towards Examination department which will ease the work of Students by filling the forms online instead of manual form submitting, No more standing in the queue for Exam form filling. This Automated Examination system is based on cloud computing. As Cloud computing is becoming powerful network architecture to perform large-scale and complex computing implementing an Automated Examination System will prove to be very beneficial. This Automated Examination System

will be a faster and easier system for both the students as well as admins and students will be able to utilize their time in understanding lectures instead of standing in long queues for applying for revaluation, photocopy, Transcript, LOR etc. Students and admins will even have remote access to the system where the student can apply for revaluation, photocopy, Transcript, LOR etc. from home or whenever he/she will be free. We have been successful in deploying the entire form filling module on the intranet. The deployment of form filling module saw a drastic reduction in the amount of time which was taken to fill up the exam form and then submitting it. Students just have to fill the form through the college website. Earlier they had to manually write all those information hence it was a burden for students and exam cell. For the exam cell, they have to manually go through each and every form and cross-check each form. All the students can easily download their acknowledgment receipt and then later they just have to take a print of it and submit it to the exam cell.

8. ACKNOWLEDGEMENT

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