

# ANDROID BASED EXAMINATION SYSTEM USING CLOUD COMPUTING

<sup>1</sup>Prof. A.R. Gadekar, <sup>2</sup>Jayesh Pawar, <sup>3</sup>Pooja Patil, <sup>4</sup>Pallavi Pawar, <sup>5</sup>Mrunal Ahire

<sup>1</sup>Assistant Professor, <sup>2, 5</sup>Final Year Student

<sup>1</sup>Department of Computer Engineering,

<sup>1</sup>Sandip Institute of Technology & Research Centre, Nashik, India

**Abstract:** Cloud computing is becoming a powerful network architecture to perform large-scale and complex computing and android simplifies such tasks. Android simplifies everyday life. As there has been a vast advancement in information and communication technology, there is a need for change in traditional examination system. Traditional examination system is being replaced by online examination system. The paper introduces thumb verification device which is used for user's verification and his/her attendance. Cloud Computing along with android is used for storing of questions, answers and result in encrypted form. Android simplifies everyday life.

**IndexTerms – Android, Cloud Computing, Data Encryption, Security.**

## I. INTRODUCTION

Present system of examination is based on Paper which requires large amount money. Their collection, printing, transportation and maintenance are time consuming. Many students attend the examination and give the exam over papers. To simplify the examination procedure, cloud computing along with android can be used to upgrade the present examination system. Cloud computing can be used to simplify complex tasks and android provides a simple user interface to perform those tasks, so our proposed system will integrate both of these technologies together and will simplify the current examination system. The concept is based on an android application and cloud computing. Android simplifies everyday life with easy to understand interface while cloud computing is for performing complex tasks and provide security. In this proposed system we have used an android application to provide a simple user interface for performing different tasks related to examination system point of view.

- RC4 encryption and decryption
- Thumb verification device
- Android Application

Here cloud computing is used for storing of data in encrypted form by using the RC4 encryption algorithm on the cloud server. A thumb verification device is used for marking attendance of students using their thumb print. Many solutions have been proposed for inefficiency of the traditional examination system. The lack of faster complex calculations and simple user interface requires implementation of cloud computing and android based examination system. The complex calculations and storage needs will be done using cloud computing and the simple user interface will be provided by android. Using all the above technologies together we will be able to increase the efficiency of the traditional examination system.

1. **Multi-Core Computing:** The multi-core system will be used for running the examination system android application.
2. **Embedded Computing:** The thumb verification device will act as an embedded system for verifying the student and marking the attendance before the examination begins.
3. **Distributed Computing:** The distributed computing will be used as cloud computing for storing the data on cloud servers.

## 1.1 LITERATURE SURVEY

Aslihan Tufekci, et al, 2013[5] have developed an online exam system, in which students can give exam from computers and other mobile environments. This system provides the user with an electronic environment that can be used easily, quickly and effectively. Via this system students can give exam by using their mobile devices whenever and wherever they wish. Samir A. El-Seoud, et al, 2010[6] aimed to include Semantic Web technologies in the E-learning process, as new components. They used Semantic Web (SW) to:

- 1) Support the evaluation of open questions in e-learning courses,
- 2) Support the creation of questions and exams automatically,
- 3) Support the evaluation of exams created by the system. Their goal was to use Semantic Web and Wireless technologies to design and implement the assessment system that allows the students, to take: web based tutorials, quizzes, free exercises, and

exams, to download: course reviews, previous exams and their model answers, to access the system through the Mobile and take quick quizzes and exercise.

Dr.Kurt C.Gramoll, et al, 2015[7] Student have to access the online text in the first app 'examApp' and it records the students choices. It had numerous security features that limit access to the exam only on the tablets provided to them during the exam. All graphics are vector-based so they are crisp on high resolution screens. Included in the examApp was an admin page that provides the instructor information about the exam while in progress. This includes scores, for a given problem, student's activity, graphs, and direct communications to all students. The second app, "eBookApp", allows the student access to the online eBook used for the class. However, it blocks the student from other online web site or material.

Divya R, et al, 2014[8] A system was developed which processed manual evaluation and was digitized. This system allowed random generation of question paper, enhanced evaluation and reevaluation and online compilation for laboratory exams. They aimed to automate the entire process of examination assessment by enabling correction on PC using both online or offline mode, by human. Security was enhanced by applying cryptographic techniques thereby avoiding the leakage of questions prior to the examination and prevents the manipulation of critical data involved in the process. Repository of all the data involved in the process was available for future use. A high level of accuracy was obtained in grading the students. Thus the system optimized the human effort involved and also reduced the overall time consumed in the process of conducting and evaluating examinations.

Sattar J. Aboud, et al,2012 [9] They proposed that educational university should involve different security techniques that should be used to protect the exam characteristics in e-exam. Their approach targets to secure e-exam scheme with all of its information in digital form. Their main aim was to focus towards high standard security

Sungkur, et al, 2013[10] proposed a method to reduce the cost of exam by avoiding the physical based examination. This system took less time to view the results of the exam they appeared for. Security was also seen into consideration. Methods of authentication and its strength/weakness were described

## II. OBJECTIVES

- To make it easier for student to appear for examinations for objective as well as subjective type questions.
- The questions will be selected randomly from a question bank.
- Auto marking of the objective answers will be done.
- For subjective type of answers, manual checking by exam department will take place.
- To facilitate the use of thumb print system for students authentication.
- To reduce cost required for producing papers.
- To make it easier for paper checkers for allotting the marks.

## III. STATEMENT OF SCOPE

- Android based examination system is developed for educational institutes like schools, colleges, training centers etc.
- The system controls all the operations and then generates reports just as the testing is finished.
- The type of question is only multiple choices and encrypted data is uploaded to cloud.

## IV. HARDWARE AND SOFTWARE REQUIREMENTS

### 4.1 Hardware Requirements

1	Portable Android Device	1 GHz
2	RAM	512 MB
3	Thumb verification device	-
4	Cloud Server for storage	500 GB

### 4.2 Software Requirements

1	Operating System	Windows XP(or above) and Android(4.1 or above)
2	IDE	NetBeans 8.1
3	Programming Language	JAVA (jdk 1.7.0 and above)
4	Database	MySQL 5.5 and above

## V. PROPOSED SYSTEM

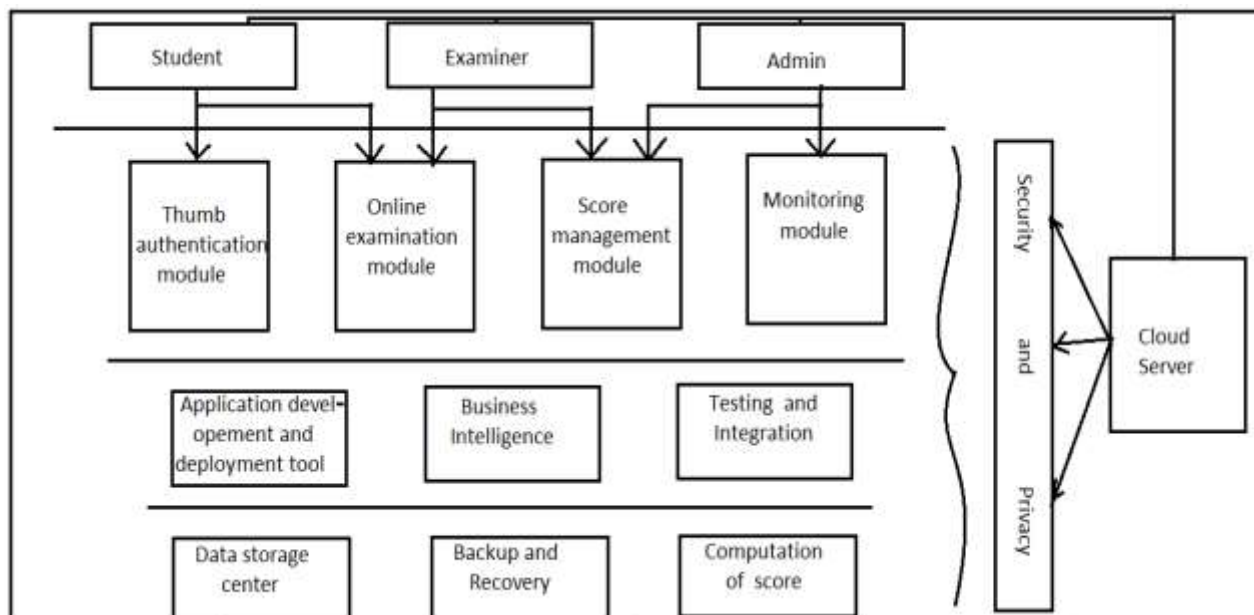


Fig.1 Architecture Diagram

### SOFTWARE CONSTRAINS

- Android application will be used.
- Answers will be uploaded on the cloud in encrypted format and decrypted over to paper checker's device

### MAJOR CONSTRAINS

- Android application is to be designed in such manner that no external application can be installed.
- No other application can be accessed during the duration of exam.
- The android application will upload the encrypted data to validate online server and decrypted only to paper checker device.

### OUTCOME

- Students will able to write exam efficiently.
- Paper management and production cost will be reduced.
- More secured marking procedure will be conducted.

### ADVANTAGES

The traditional examination system required a lot of paper consumption that ultimately resulted in cutting down of trees. Our examination system eliminates this major drawback and helps in preserving the environment. This would indirectly reduce the cost of examination. The traditional paper pen method of exam conduction is inefficient, tiresome and less reliable. Our Examination system completely eliminates the drawbacks of traditional examination system and has an edge over the online examination system implemented on Desktops and PCs because of the fact that there is a wide range of availability of mobiles as compared to computers. The human interaction required in case of traditional examination method is very high, since faculty is required to set the examination and evaluate the paper due to which the traditional examination method is highly erroneous, unreliable and leaves ground for mal practices in education industry. The system is reliable since only the authenticated users can take the examination and strong safety checks have been incorporated in our registration and login modules to serve the purpose. Using the impeccable UI functionalities that have been provided using the Android Development Kit we have designed and implemented our system.

### APPLICATIONS

- Examination Systems
- Competitive Examination.

## VI. CONCLUSION AND FUTURE ENHANCEMENT

This application provides an efficient way of conducting examinations. For secured authentication, we have included thumb print authentication system to detect valid students. It will save time and money required for many different tasks such as paper printing, maintenance, and transportation. The students will be able to view the result online over the application. It is uploaded by the system administrator. Administrator can create the question paper, modify the paper or questions or delete questions if needed. Users can register and login to give the test with his specific ID, he/she can also see his/her results as well.

The proposed work can be extended with the provision of intelligent high-resolution camera, GPS and big data for the higher accuracy and performance of the system. Camera can be installed and configured in the necessary premises. These cameras can take over the supervisor role. GPS enabled tablets can be incorporated in the proposed project to trace the location of a given student having the tablet. Pune University will have a large amount of information to process so we can provide Big Data concept to store the information in the database

## VII. ACKNOWLEDGMENT

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