Research Paper on Online Examination System

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Abstract - **A method for administering tests online is known as an online examination system. Either utilising a computer system connected to an intranet or the internet. In the present individual field, study and comparison for several web examination systems were conducted. A collection of guidelines for creating an environment for universal exams that could be utilised at educational institutions and colleges were also offered as being flawless.**

Keywords- **PHP, Web Applications, Examination Systems, Database, Web Server.**

INTRODUCTION

The internet-based assessment procedure is currently recognised as an assessment method that is continually developing. Less personnel are needed to run the exam as well. It is used to administer assessments tests, evaluations, psychological assessments, assessments of personality, tests for admission, and college finals. Organisations can easily monitor a student's progress while an assessment is given to them. The computation of the outcome is quicker as a result. Additionally, it helps to lessen the need for papers. For students to get ready for tests and save precious hours on reviewing tests and creating results reports, educational institutions must now consider an online testing system to be extremely crucial. A PHP web-based assessment project is really helpful for learning.

The objectively organised clinical exams (OSCE), which involve physical tests on dummies and brief-answer written replies to situations, are conducted using several workstations (Turner & Dankoski, 2008). There are parallels between the OSCE and a clinical simulator test used by certain medical schools (Botezatu et al., 2010). For educational and recreational reasons, passports are used to assess and record learning (Wasley, 2008).

Online tests, f l-examinations, and bringing your personal device models have all taken the place of large exam rooms with written material for watched exams. All of these offers novel opportunities for incorporating cutting-edge pedagogic and assessment techniques where assessments are viewed as being crucial. Additionally, a few studies suggests that online tests can distinguish between a true pass and an accurate fail with a high degree of precision (Ardid et al., 2015), but there hasn't been a systematic review of the literature. We think that this timely evaluation is essential for the field's advancement in taking a step back and solidifying the current practises in order to enable future innovation and dissemination. Although the goals of such structures might be to evaluate the results of learning and provide formative feedback, the main purpose of final exams is to validate learning. The purpose of this is to confirm that the pupil that is listed in the pupil registration is the learner whom is doing the evaluated work. Higher education institutions are creating answers to an expanding via the internet lessons announcing and this includes developing digitalized examination pilot studies and case studies (e.g., Al- Hakeem & Abdulrahman, the year 2017; Alzu'bi, 2015; Anderson al., 2005; Fluck et al., 2009; Fluck et al., 2017; Fluck, 2019; Seow & Soong, 2014; Sindre & Vegendla, 2015; Steel et al.

Stealing is a common aspect of the educational journey of today's pupil, notwithstanding the reality that it probably shouldn't be (Jordan, 2001; Rettinger & Kramer, 2009). Some have suggested enhancing the ability of pupils for integrity (Crawford, 2015; Wright, 2011), strengthening deceit detection (Dawson & Sutherland-Smith, 2018-2019), and passing legislation to forbid bribery (Amigud & Dawson, 2020) as remedies to the unavoidable instances of fraudWe believe there is merit in looking for techniques which may promote the validity of learner evaluation, even when the curriculum is rapidly changing. This essay's goal is to provide an overview of the most recent research on digital testing techniques, in addition to academic answers related to authenticating and cheater prevention, and everything in the context of assessments which encourages education and because to the ongoing changes in student demographics and profiles (General et al., 2013; Hainline et al., 2010)

LITERATURE REVIEW

One technique of taking tests that doesn't require a piece of paper or a pen is the online examination system. Online exam taking is the rapidly expanding method. Because speed and precision are the foundation of this approach, speed and accuracy are what made this method renowned. To maintain track of the investigations, we designed an online examination system based on the findings of several researchers who have already studied online examination systems. In 2003 Zhenming et al. created an online examination system based on a web browser/server framework, which conducts exams, offers an automatic grading system for objective questions, and handles operating questions like programming, editing MS Word, MS PowerPoint, MS Windows, Excel, etc. These are the actual keywords that any built system needs. Guzman and Cenejo's 2005 SIETTE: The SIETTE (System of intelligent Evaluation using Tests for Tele education) online examination system was created by them. The system described above supports login and a few other essential functions, but not premium ones like random question generation, random choice distribution, resume capability, or random question distribution. Ayo et al. (2007): They provided an e-examination paradigm. The software was created in a Nigerian private university. The purpose of developing such software is to carry out the JAMB (Joint Admission Matriculation Board) entrance examination for all Nigerian universities. Covenant University, a private university in Nigeria, was where this programme was created and tested. They discovered the programme to be quite

useful for organising an entrance examination that was both orderly and accurate. It does away with the issues that are related to the conventional entrance test procedures. Sean and Jim (2006): They explained that the assessment may be interpreted in several ways. They originally developed an online e-assessment before coming up with the concept to transform it into a virtual testing system. They also thought there were would be a variety of alternatives for completing the assessment and exam. They continued to accumulate data until they eventually took on the shape of an e-examination system. because it differs greatly from the traditional method of completing any sort of assessment or inspection and is considerably more precise.

S. No.	Paper	Techniques	Advantages	Disadvantages
1	Studying and developing a web-based testing method	HTML JSP JavaScript	Internet-based test administration, paper creation, and problem administration.	Susceptible to cheating Not secure
2	A platform on the internet for assessment in computing	PHP JQuery AJAX	Weaknesses of each student can be identified according to levels of blooms taxonomy	Transitioning to Open-Book Exams
3	Online Examination System	PHP HTML CSS SQL Server Pentium IV Processor	It enables investigators to review the examination in an organised and self-policing manner. The creation of forms for feedback by users is possible to proceed either Susceptible to cheating Not secure system/question paper design or format.	Neither all students get access to laptops, iPads, or an adequate connection to the internet.
4	Web based online examination system	Object-oriented methodology	Auto grading	Chances of Cheating Technical glitches
5	Online Exam Invigilation System	ASP.NET HTML	It will save the time of exam conductor No wastage of paper.	Lack of proctoring
6	Online Examination System	HTML JSP Tomcat Server Random Number Generator Algorithm	Useful for all over the educational and corporate sector Auto Question Generator System	Susceptible to cheating
7	A thorough analysis of online tests: A creative teaching strategy for scalability authenticity and reliability	PRISMA approach	Review Paper	Review Paper

8	Online Examination System	PHP HTML	Simply approved by organisations like colleges Minimise physical and material labour.	Not Secure Lack of proctoring
9	Online Examination System in the Times of COVID-19: A Case Study of Pakistan	KMO and Bartlett's test Cronbach's alpha test	Case Study	The Case Study is only limited to Lahore in Pakistan and is based on only three variables, importance, responsiveness, and attitude
10	Web Based Online Examination System		The loss, alteration, or fraud of test or presence registrations is not a concern for the government.	The test-giver must be there while the learner takes it. security risks identified in an online site assessment.

SYSTEM DESIGN

A web-based application system called the Online Examination System is used to design and assess exams. There are three parts to this system architecture: the front end, the back end, and the database server. We utilised the relational database management system Mysql, the interpreted programming language javascript, client side Ajax methods to transmit and retrieve data from the server, and CSS to style the web pages.

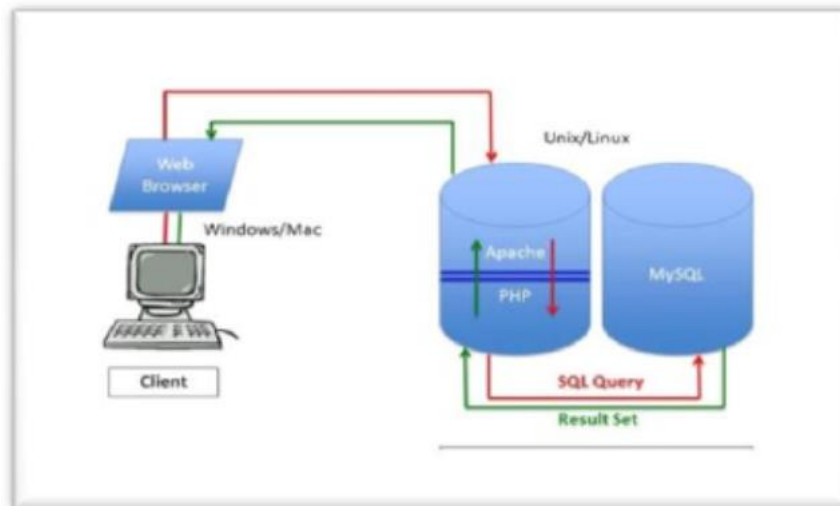Figure 1 represent an overview of online examination system

Fig 1. System Overview Design

Three components make up the entire system: an administrator module, a teaching module, and a student module.
- **Administrator module**: The administrator module performs system management tasks, including adding the user registration data to the system data base.
- **Teacher module**: The teacher module contains test management functionality, automatic examination paper organisation, administration of examination papers, paper analysis, result, and other features.
- **Student module**: After finishing and submitting the exam, the student module allows students to log in to take the test, and the results are generated instantly.

THE SYSTEM'S USABILITY:

Login: Students must register in order to be eligible to take the test. When registering, students fill out a form and receive login information, including a username and password.

After finishing the exam, the student can log out to return to the login page.

Generate Questions: The administrator is given the ability to generate questions. The administrator enters the inquiry, selects the alternatives, enters the right response, and then clicks submit.

Examine Result: After submitting the test, the student can examine the score sheet that contains the results.

Database Design

It is crucial to ensure that the database is adequately constructed in order to utilise MySQL server technology to its best potential. All of the database's tables were established using file names that attempted to represent the tables' purposes and, as a result, support well-designed systems. The first stage in designing was to choose which tables should be built and what kind of information each one should contain based on the project's requirements and standards.

CONCLUSION

The most recent research on internet-based testing and its counterparts was taken into account in this comprehensive evaluation of the available research. We addressed technical, professional, and educational research that was found in our sample. Initial assessments regarding implementation continue to be the primary focus of the literature. These consist of the technologically altered processes and how pupils as well as employees rated their choices. Early investigations of the impact of online exams on pupil success and happiness as well as whether modifications impact employee productivity were made.In order to grasp the obstacles and how to get beyond them, higher learning needs this concise survey of research on online exams. This will promote increased use of online exams in secondary school. Another of the biggest obstacles is how people perceive taking exams internet. Once they finished a test online, pupils favour this method because of how simple it can be use. According to the research, there was no discernible distinction between online as well as conventional testing modes in terms of pupil achievement as measured by the final test results. Once they had tried the internet-based testing applications, students' anxiety levels reduced. Learners must be given this knowledge in order to alter their views and reduce stress if a testing platform is used. The statistics relating to fraud, the dependability of the exam the internet, its usability, and the decrease of time needed for creating and assessing exams are just a few examples of the facts that has to be presented to employees. Universities ought to search for an apparatus that has precise fingerprints, such as identification of users, motion, sound, and keyboard tracking (such as submitting anomalies so the record may be studied), when choosing a system. These characteristics lessen the requirement for invigilating online exams. In addition to system functions ought to involve web page or structure locking, technology powered by the cloud so that local refreshes are not necessary, and a user- friendly interface for the virtual test. Organisations need to think about how they will deal with technical shortcomings and digital inequalities, such as knowledge and entry to technologies.

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