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Online Examination Portal

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ABSTRACT

Online Examination Portal (OEP) is an electronic assessment system in which examinations are given on the web, either over the internet or via a mobile device. Using the computer framework to create an intranet. The primary goal of the online test device is to accurately evaluate pupils using a computerized technology that saves time and provides quick and accurate results. Advances in innovation currently have maintained the sustainability of an online assessment and have refreshed the cycle of an online exam throughout time. In developing countries, however, many institutes, particularly in better institutional organizations, have standardized written examination gizmo procedures. The online assessment framework improves the way toward leading tests and compellingly preparing the outcomes. This work talks about the electronic online assessment framework and a safer instrument to lead an assessment. An OEP is a viable and great answer for a mass training assessment. An online examination portal is a web-based platform that enables remote exam-taking. It includes features like user authentication, scheduling, question bank management, exam paper generation, delivery, and result processing.

1. INTRODUCTION

The online assessments, which are also called assessments, are the web-based assessments given through the web [1]. Today numerous associations, schools, colleges are taking assessments on this web-based system and pronouncing online outcomes. In these coronavirus circumstances [2], such a popular framework will decently help to take the web assessments.

An online test has numerous advantages and disadvantages. It is very well suited for remote understudies who are essentially advantageous. The inability to invigilate is one of the risks of this online exam. Another annoyance is that the online assessment framework's user verification uses a login username and a secret word [3], which is not secure. As a result, this work opts to use safer confirmation approaches to increase the security of the online evaluation system [4].

OEP is now regarded as a quick-creating assessment approach because to its precision and speed. This web project required a smaller team [5]. In the modern era, practically all businesses use an online evaluation framework, which shortens an understudy's time in examinations. Organizations could also appropriately monitor the

development of the understudy to whom they give thorough examination. As a result, the outcome is determined in a short period of time. It also aids in reducing paper demand, resulting in fewer trees being damaged. A PHP-based online evaluation project is incredibly useful for learning [6].

According to the current mandatory online assessment framework, the educational establishment must put up the exams, manage the time, check test copies, and build up end results [7]. An online evaluation system allows educational organizations to screen their students and keep track of their progress. Institutes make excellent use of this framework, which aids in dealing with examinations and obtaining results in a simple and productive manner. Until recently, test planning and outcome setup were done physically, which required more time and effort to execute the process.

This study focuses on the need for and expanding demand for OEP employed by various enterprises, professional training firms, and universities for exam taking. The remainder of this work is structured as follows. Section 2 examines various investigations conducted in relation to an OEP. Section 3 discusses the various methodologies employed in an OEP. It is separated into two stages: the first is the arrangement stage, and the second is the testing step. Section 4 describes the current issue statement generated by offline exam administration. Section 5 describes the OEP's planned system. This section also discusses the advantages of an online exam system versus an offline exam system. Section 6 discusses why people use the internet.

2. RELATED WORK

Various investigates been done regarding the matter of an online assessment framework which can be addressed as given points:

Fabel et al. [8] proposed the Computer Based System (CBS). CBS is a web-based Online Exam System (OES) designed to assist an examination process and address challenges such as lack of scheduling adaptability for automation, an applicant log-off after a permission period, outcome integrity, assurance, independent execution, need for adaptability, robustness, built to support examination process and address challenges such as exam behavior, auto checking, auto accommodation, and exam report generation.

Ayo et al. [9] suggested an E-examination implementation approach. The program was developed at a private university in Nigeria. The purpose of creating such software is to administer the Joint Admission Matriculation Board admission exam to all Nigerian universities. Convent University, a private Nigerian university, oversaw creating and testing this programmer. They thought the programmer was useful for programming and general investigation.

Wei et al. [10] created the Online Assessment Framework (OEF). OEF supports several extraordinary essential features, for example, auto-generation of rank and outcomes, auto-generation of questions, functioning inquiries such as programming, changing MS Word, PowerPoint, MS Windows, Excel, and so on. Rashad et al. [11] presented Exam Management Assessment (EMA), a web-based system. MA provides all necessary features, for example, overseeing assessment, assessing understudy answers, executing the assessment, and incorporating auto imprint for the accommodation, secure login.

Arvind Singh, Niraj Shrike, and Kiran Shetty [12] proposed the OES system. OES is a system that can be customized replies of students are checked automatically and quickly.

Guzan and Conejo et al. [13] presented SITTIE Automatic Assessment Environment as an OES. SITTIE is a web-based application for designing and modifying adaptive experiments. By integrating self-evaluation exam questions with feedback and hints, it can be used to fulfil instructional goals. Other elements include the option to resume, the use of several invigilators, the collecting of random questions, the circulation of irregular inquiries, and the random distribution of choice.

Muna R. Hameed et al. [14] proposed the OES Systems was created with PHP and MySQL. Using open-source technologies allows for greater software flexibility. Many technologies, training companies, and other organizations use it. The goal of developing the framework is not only to save the required time, but also to obtain quick and precise results.

3. METHODOLOGY

This work plan will create a framework for identifying a wide range of unfair practices throughout the web evaluation and directing a fair exam. Our proposed online assessment system is divided into two stages: the preparation stage and the test stage. During the preparation stage, the competitor must validate themselves before beginning the test by using a login username and password together with an OTP [15]. This phase entails screen sharing and recording the full assessment measure to ensure that the applicant is not allowed to switch between tabs throughout the assessment. During the whole assessment period, no subsequent participant is permitted to visit a similar room. The candidate takes an exam under constant monitoring in the second portion, which is the test stage. The proposed framework has the advantage of carrying the safety in the new framework. The new proposed structure is simple to grasp, and short entries can be made in it. There is no need for manual integration in a complete cycle [16]. Understudy can test from any location in the world 24 hours a day, seven days a week; there are no geographical boundaries-100% correctness in mark computation and result confirmation. The numerous inquiries set for various applicants.

SSADM stands for Structured Systems Analysis and Design Methodology. This study was carried out using it. This method is also used for persuasive reasons in this paper. The SSADM approach is commonly utilized in the system growth analysis and design phases. It is given a prescriptive approach to dealing with data framework improvement. It predetermines the modules, stages, and undertakings that must be completed, as well as the expectations to be established and the tactics to be employed to build the expectations.

4. PROBLEM STATEMENT

As the offline examination procedure has various drawbacks, for example, difficulties in physically investigating the exam, additional invigilators are required to take an assessment of numerous understudies. Exam results are not precise since calculating is done physically, the danger of losing test results is high in current frameworks, result verification is time-consuming because it is done physically, and a limited number of students can participate for the exam at one time. The evolution of data technology and its systematic and proper use will overcome the current error in the manual

framework. The web-based test gadget saves the checked records in a directory [17] and makes it easier to administer an examination. Faculty can provide their tested rules, and students can provide an entirely mechanical device.

Manually authenticating a candidate is a time-consuming and demanding process that frequently needs more staff. It is also easily controlled by unethical ways. A printed admit card is also required for manual verification of an application, which involves the usage of a lot of paper. In an OMR-based examination, each page must be individually scanned, which is a time-consuming process. Due to doodling on the page, OMR Reader is often unable to correctly classify OMR response papers. Furthermore, this operation is expensive.

5. PROPOSED SYSTEM

The test data is kept in the data set via the online assessment framework. Instructors can add/remove questions, determine right answers, select the test duration, register students, remove students, show inquiries for students randomly, and determine and display the results for students [18].

The proposed system which is accessed by the user is categorized as: -

Admin- They are the ones who operate the whole system. They can create exams for students for specific Subjects. They can add, delete and update the question from the system. Admin can also check the list of students whose name is approved for the exam. They can also manage the results and rank the students according to their marks.

Student-They have given privileges only for registering themselves into the system. Students can also check their results and see their ranks once the exam is over.

5.1.1 System Design

The OEP makes advantage of client/user design. The client connects to the server side via the internet or localhost using an internet browser. MySQL and PHP are server-side applications that prepare the examination process and save the information returned from the database.

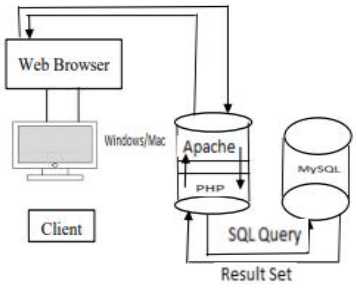

Figure 1: System design overview of Online Examination Portal

5.1.2 Database Design

The database's design, on the other hand, guarantees that MySQL [19] server technology is fully utilized. The initial step in creating the database was to finalize specifications and requirements based on the project, such as what type of information the table should contain.

5.1.3 System Implementation

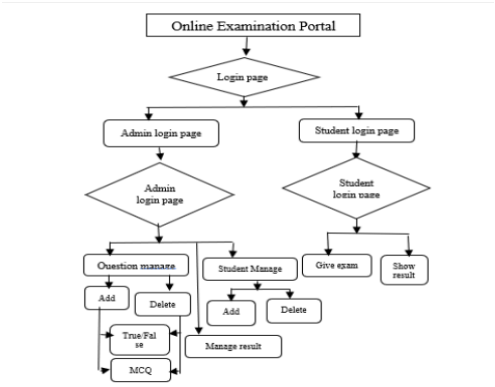

Figure 3: System implementation of Online Exam Portal

- The implementation of OEP is explained in Figure 3.

5.2. Design of the Proposed Model

- Here are some of the designs of the proposed model

5.2.1 Sequence Diagram

The Sequence diagram is also known as the Interaction diagram. This type of diagram is used to depict sequences that flow from one object to the next. It is critical to remember that the relationship between the system's modules is vital when it comes to implementation and execution.

The OEP login sequence diagram depicts how administrators can access their accounts by utilizing their credentials. After logging in, Admin will manage all activities on students, courses, papers, tests, and marks. All pages, including papers, examinations, and grades, are secure and can be accessed after logging in depicts the login page of an Online Examination Portal.

5.2.2 Use Case Diagram

A use case diagram is a form of behavioral diagram that results from a use-case study in the Unified Modelling Language (UML). Its goal is to offer a graphical representation of a system's functioning in terms of actors and their goals (expressed as use cases). Its primary goal is to demonstrate which actor performs which machine functions. The system's actors' roles can be portrayed.

The use case diagram portrays a single actor, a student. Figure 5 depicts how the user interacts with this test system to achieve his goals, which include registering and logging into the system, answering true/false questions, responding option-based questions, viewing results, and logging out of the system.

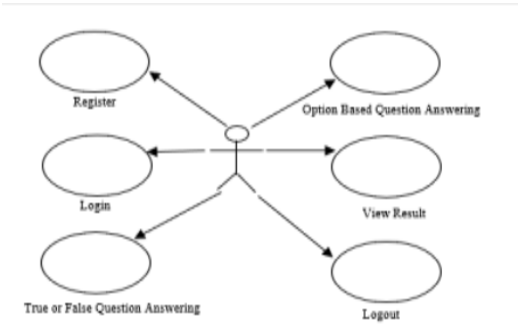

Figure 5: Use case diagram of Online Exam Portal

6. RESULTS AND DISSCUSION

Previously, the information of the student who has previously registered was manually entered. Furthermore, it is difficult for each student to travel to the examination site and appear for the exam. Earlier in the online assessment framework, there is a need to create a registration or application structure; physically creating and printing question sheets [20] is a challenging operation. Furthermore, manually calculating the number of pupils registered and checking the details of every single understudy in a month is difficult and time-consuming.

It takes a long time and a lot of money because it utilizes all human resources. Another issue is the

possibility of inaccuracies. The downside of the current framework is that it requires more time to create question papers and wastes time checking good and bad answers, which can now be done easily in an online framework. Manually calculating grades for many students is likewise a difficult undertaking. There is the possibility of human error. The number of students who can appear for papers at the same time is also counted.

7. FUTURE SCOPE

Consistent advancement in innovation has resulted in the rapid growth of the evaluation industry. Many training organizations and colleges are developing an interest in web exams using online assessment programming for their students rather than pen and paper-based tests. It demonstrates that online assessment software is the evaluation technique of the future. We created an online assessment system, and we will be working with it in the future, making significant improvements such as: -

1. Voice acknowledgment.
2. Fingerprint validation [21]
3. Facial recognition acknowledgement.

8. CONCLUSION

This research study presents a safe system for internet-based exam invigilation, the work of which preserves academic integrity in e-learning. From the candidate's standpoint, this web-based system is convenient and user-friendly to use because it just requires one laptop with a webcam and microphone. From the recorded movies and audio, we can extract six crucial components: speech detection, user verification, phone detection, and gaze estimation. Furthermore, we can extract active window detection using screen sharing. These aspects aid in the administration of a fair online assessment. Using publicly available language gives us greater flexibility, but it also requires more time to code. The future of OEP could effectively include institutes and foundations to make the test safer and more adaptable. The framework is divided into two fundamental modules (student or supervisor), creating the framework most extreme by cautiously displaying every module service. The admin capabilities are plainly differentiated by the ability to manipulate client data such as add (register), act on the test such as add, delete the question.

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