

Online Examination Portal

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Abstract -Online Examination Portal (OEP) is an electronic assessment framework where assessments are given on the web either through the internet or intranet utilizing the pc framework. The fundamental aim of the online exam device is to correctly evaluate the students very well via a computerized device that saves the desired time and gives rapid and accurate outcomes. Advances in innovation in these days and age have upheld the viability of an online assessment and have refreshed the cycle of an online assessment throughout the long term. However, many institutes, particularly in better institutional firms, have standardized written examination gadget methods in growing countries. 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.

Key Words Hypertext Preprocessor (PHP), Web Applications, Assessment Frameworks, Database, Web Server Component.

1. INTRODUCTION

The online assessments, which are also called e-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.

There are numerous benefits and disservices of an online test. It is very well directed for distant understudies that are primarily beneficial. The risks of this online exam are the incapacity of invigilating. The other inconvenience is that the user verification in the online assessment framework utilizes login username and secret phrase [3], which isn't secure. In this way, this work chooses to utilize other safer confirmation techniques to improve the security of the online assessment framework [4].

Today, OEP is viewed as a quick-creating assessment strategy based on its exactness and speed. It required

less workforce to deals with this web project [5]. In a recent era, almost all firms take an assessment by an online assessment framework, which diminishes an understudy's period in assessments. Organizations could likewise adequately screen the advancement of the understudy that they give thorough examination. Subsequently, the outcome is determined in a limited time. It likewise helps in reducing the requirements of a paper, which results in damaging fewer trees. An online assessment project build in PHP is extremely helpful to learn [6].

As per the present pre-requisite online assessment framework, the instructive establishment needs to set up the tests, manage the time, check test copies, and set up outcome results [7]. An online assessment framework encourages instructive establishments to screen their understudies, keep monitoring on their advancement. Institutes perfectly utilize this framework which helps in dealing with the tests and gets the outcomes simply and productively. Until the present time, the planning for tests and setting up the outcomes was performed physically, requiring more time and effort to complete the task.

This paper mainly focuses on the need and growing demand for OEP used by various firms, professional training firms, universities for taking exams. The remainder of this paper is organized in the following ways. Section 2 reviews a various investigation which has been done regarding an OEP. Section 3 describes the various methodology used in an OEP. It is divided into two stages; the first one is the arrangement stage second one is the test stage. Section 4 outlines the current problem statement created by offline exam conduction. Section 5 discusses the proposed system of the OEP This section also reviews the need for an online exam system over an offline exam system is. In section 6 discussion is made about that why the online exam system came into existence. Some future scopes are examined in section 7, whereas section 8 concludes a summary of this paper.

2. RELATED WORK

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

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

Ayo et al. [9] proposed a model called E-examination implementation. The software was created at a Nigerian private university. Developing such software is to conduct the Joint Admission Matriculation Board (JAMB) entrance exam for all Nigerian universities. Convent University, a private university in Nigeria, was responsible for developing and testing this program. They considered the program to be instrumental in programming and ordinary investigation.

Wei et al. [10] built a framework called Online Assessment Framework (OEF). OEF upholds some exceptional fundamental features like auto-generation of rank and results, auto-generation of questions, working inquiries like programming, altering MS Word, PowerPoint, MS Windows, Excel, and so on.

Rashad et al. [11] proposed a web-based framework named Exam Management Assessment (EMA). EMA has all essential highlights like overseeing assessment, assessing understudy's answers, conducting the assessment, and incorporating auto imprint for the accommodation, secure login.

Arvind Singh, Niraj Shrike, Kiran Shetty [12] proposed a system called OES. OES is a customizable system. Students' answers are checked automatically and fastly.

Guzan and Conejo et al. [13] proposed OES called SITTIE Automatic Assessment Environment. SITTIE is a web-based tool for creating and modifying adaptive experiments. It can be used to achieve instructional goals by combining self-evaluation test questions with feedback and hints. Other features include resumption ability, multi- invigilators, random question collection, irregular inquiries circulation, random distribution of choice.

Muna R. Hameed et al. [14] proposed a system called OES. OES has been built using Php and MySQL. Using

open-source technologies gives more flexibility to the software's. It is used by many technologies, training firms, etc. The principle to construct the framework isn't just to decrease the necessary time yet additionally to acquire quick and exact outcomes.

3. METHODOLOGY

This work plan to build up a framework to identify a wide assortment of unfair practices during the web assessment and lead a fair test. Our proposed online assessment framework has two stages, the initial one is the preparation stage, and the second one is the test stage. In the preparation stage, the competitor needs to verify himself before beginning the test by utilizing login username and password with OTP [15]. This phase includes screen sharing and recording the entire assessment measure to ensure that the applicant is not permitted to change to different tabs during the assessment. No subsequent individual is permitted to enter into a similar room during the entire term of assessment. In the second section that's the test stage, the candidate gives an exam under non-stop monitoring. The advantages of the proposed framework are that the safety carries in the new framework. The new proposed framework is easy to understand, and quick entries can be made in this framework. In a complete cycle, no manual integration is required [16]. Understudy can test from any spot of the world 24x7; there are no topographical boundaries—100% rightness in marks computation and result affirmation. The diverse inquiry set for various applicants.

Structured Systems Analysis and Design Methodology (SSADM). It was used to conduct this study. This work also has compelling reasons for using this approach. The SSADM approach is widely used in the analysis and design phases of system growth. It receives a prescriptive way to deal with data framework improvement. It determines ahead of time the modules, stages, and undertaking which must be done, the expectations to be created, and the strategies used to create the expectations.

4. PROBLEM STATEMENT

Since the offline examination system has numerous downsides, for example, trouble in investigating the exam physically, more invigilators are needed to take a test of numerous understudies. Exam results are not precise since figuring's are executed physically, the possibility of losing test's results is excessive in present frameworks, result checking is time-consuming as it was physically done, at one time counted number of students can appear for the exam. The advancement in

data technology and using it systematically and appropriately will overcome the current mistake in the manual framework. Web-based exam gadget stores the checked records in a directory [17] and makes it less complicated to provide an examination. Faculties can upload their checked guidelines, and the scholar can provide an entirely mechanical gadget.

Manually verifying an applicant is a time-consuming and stressful procedure that often necessitates more workforce. It can also be easily manipulated by unethical means. A printed admit card is also needed for manual verification of an applicant, which necessitates extensive paper use. Each sheet must be manually scanned in an OMR-based inspection, which is a time-consuming operation. In some instances, OMR Reader is unable to correctly classify OMR answer sheets due to scribbling on the page. Furthermore, this procedure is costly.

5. PROPOSED SYSTEM

The online assessment framework keeps the test data in the data set. Instructors have options to add/erase questions, conclude the correct answers, set the test timespan, register understudies, erase understudies, show inquiries for understudies randomly, ascertain and show the eventual outcomes for understudies [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 utilizes client/user design. By utilizing an internet browser, the client connects with the server-side via the internet or localhost. MySQL and PHP reside on server-side, for preparing the examination process and saves the information that are returned from the database.

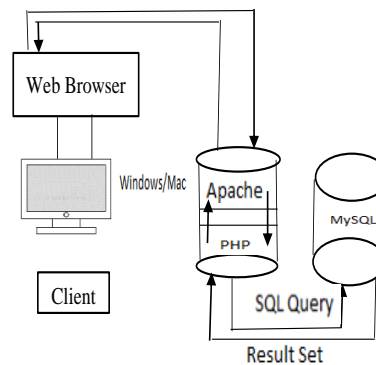


Figure 1: System design overview of Online Examination Portal

5.1.2 Database Design

Well, the design of the database ensures the full use of MySQL [19] server technology. The first step in building the database was to conclude specifications and requirements according to the project, which type of information the table should contain.

Table	Rows	Type	Collation	Size
Admin_selector	1	InnoDB	Utf8_general_ci	16 KB
Admin login	1	InnoDB	Utf8_general_ci	16 KB
Student login	1	InnoDB	Utf8_general_ci	7 KB
Questions	14	InnoDB	Utf8_general_ci	16 KB
MCQ's	4	InnoDB	Utf8_general_ci	7 KB
Result	16	InnoDB	Utf8_general_ci	16 KB
Rank	4	InnoDB	Utf8_general_ci	16 KB
Feedback	14	InnoDB	Utf8_general_ci	8KB
Marks	1	InnoDB	Utf8_general_ci	6KB

Figure 2: Database design of Online Examination Portal

5.1.3 System Implementation

The implementation of OEP is explained in Figure 3.

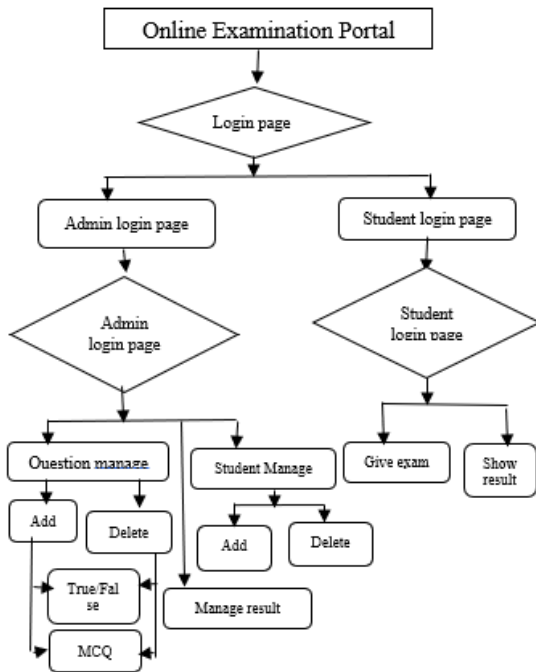


Figure 3: System implementation of Online Exam Portal

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 usually referred to the Interaction diagram. This form of diagram generally deals with sequences that flow from one object to the next. It is important to remember that the relationship between the modules of the system matters when it comes to implementation and execution.

This is the OEP login sequence diagram, which shows how administrators can access their accounts using their credentials. Admin will handle all operations on students, courses, papers, exams, and marks after logging in. All pages, including papers, exams, and marks, are safe, and users can access them after logging in. Figure 4. demonstrates how an Online Examination Portal’s login page operates.

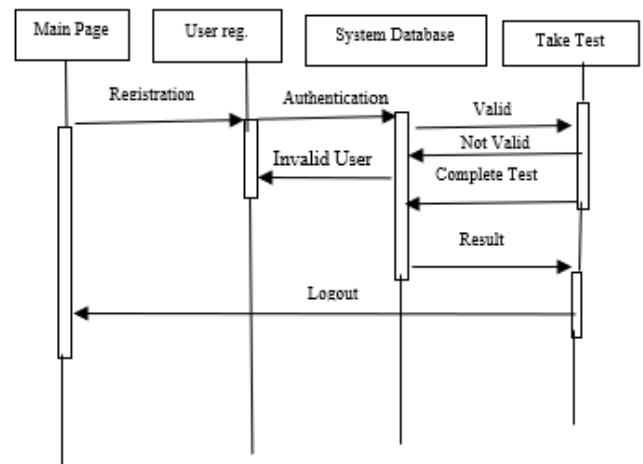


Figure 4: Sequence diagram of Online Exam Portal

5.2.2 Use Case Diagram

A Use case diagram is a type of behavioral diagram identified and developed from a Use-case analysis in the Unified Modelling Language (UML). It aims to provide a graphical summary of a system's functionality in terms of actors and their objectives (represented as use cases). Its main objective is to show which actor performs which machine functions. The roles of the system's actors can be portrayed.

The Use case diagram depicts one actor that is student. The Figure 5. shows that how the user engages with this test system to accomplish his goals, which includes registering and logging into the system, answering true/false questions, answering option-based question, result viewing, logging out from system.

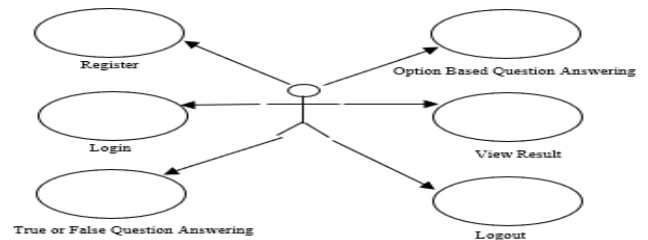


Figure 5: Use case diagram of Online Exam Portal

6. RESULTS AND DISCUSSION

Earlier there has been a manual entry of the information of the student who has registered already. Furthermore, it is hard for each understudy to go to the

examination place and show up for the exam. Earlier in the online assessment framework, there is a need to make registration or application structure; making and printing question papers [20] physically is a difficult task. What is more, computing the number of students enrolled and checking the details of every single understudy in a month physically is troublesome and tedious. It requires lots of time and wastage of cash as it requires every part of human assets to do that. Another issue is that the chance of errors. The disadvantage of the existing framework is that additional time needs for making question paper and wastage of time to check good and wrong answers, which can now be done effectively in an online framework. Manually calculation of marks for a significant number of understudies is also a challenging task. There is an opportunity for human mistakeness. There is likewise counted the number of students who can show up for papers at the same time.

7. FUTURE SCOPE

Steady improvement in innovation has prompted a fast development of the evaluation business. Large numbers of the training organizations and colleges are building up their interest in web tests through online assessment programming for their understudies rather than pen and paper-based test. It demonstrates that online assessment software is the future of evaluation techniques. We have made an online assessment framework, and we will be dealing with it in the future and will make a great deal of improvement like-

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

8. CONCLUSION

This research paper introduces a secure system for internet-based exam invigilation, whose work maintains academic integrity in e-learning. This web-based system is convenient and user-friendly for utilizing, from the candidate's perspective, as it only needs one laptop which contains a webcam and microphone. We can extract six essential components from the recorded videos and audio: speech detection, user verification, phone detection, and gaze estimation. Moreover, with screen sharing, we can extract active window detection. These features help in conducting a fair online examination. Utilizing publicly available language offers us more suppleness, and yet more opportunity is required to coded. The prospective of

OEP could effectively embrace institutes and foundations for making the test safer and more malleable. The framework is partitioned into two primary modules (understudy or overseer), making the framework most extreme by cautiously showing every module service. The admin capacities are unmistakably distinguished to have the option for controlling client's data like add (register), acting on the test like add, delete the question.

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