



Automated Online Subjective Evaluation Using PHP

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Abstract: Automatic answer evaluator is a procedure used to automatically evaluate the solutions for students. Numerous automation tools called Automated Programming Assessment Systems have been developed and examined over the decades to achieve Automatic programming assessment with solid results. Certainly, the need to decrease teacher's workload, student feedback and reliable assessment results are natural motive supporting the demand for Automated Programming Assessment System. To achieve testing in Automatic Programming Assessment, it is important to prepare a relevant and appropriate test data set to assess the correctness of student software decisions in terms of functional and structural testing. Manually developing quality test data is becoming a complicated, time-consuming, and viable responsibility in Automatic Programming Assessment software and testing. Hence, it is extremely beneficial to generate automated test data to make it more comfortable for people to accomplish tedious tasks. This practice allows students to engage in online exams, automatically assess results and create records for administrators. This article concentrates on obtaining improvements based on some of the keywords that will be included in each answer and determining the student grade for keyword presence in the answer and helps to simplify the system by reducing the abundance of human flaws.

Index Terms - Automatic Programming assessment, Result history, XAMPP, AJAX, JSON, Online Examinations.

I. INTRODUCTION

Online analysis is extremely beneficial for students. The objective of this project is to implement a fast, secure and manageable approach to partake in the examination. Its function is that students enroll for the examination and the teacher allow enrolling the students for attending the exam. This will proceed to grow and will conclusively accommodate a broad range of student services. Random tests can be generated for an individual student. The online exam practice can automatically add grades for every question to determine the overall grade of the exam. The online exam practice restricts the number of times a student can write an exam. Students may be required to solve all questions at least once before leaving the exam. The intention is to authenticate and judge the written answers similar to human beings. This software is designed to check subjective answers in online, and score users after checking the answers. This practice demands you to save the fundamental key for the system. When the user enters an answer, the system compares the answer to the fundamental key in the database and assigns an appropriate mark. Both the responses need not be exactly identical, word to word. Since it is tiresome for inspectors to examine various solution sheets, this practice diminishes the workload by precisely automating the hand-operated review process to achieve objective results.

II. WHY DID WE CHOOSE ONLINE SUBJECTIVE EVALUATION?

1. Interpreting and evaluation results

You can instantly and efficiently examine online examination results. Online tests can implement a detailed summary of the part, website, topic, or subject-specific analysis. This is beneficial for obtaining decisions or added interest lists. The results in a traditional test have a tremendous hand-operated administrative task.

2. Examination supervision flexibleness

Online exams permit the teacher to design, grade the work. Students may be asked the same or different questions. However, the traditional examinations have no adaptability, and last-minute corrections or changes are not possible.

3. Generation of question paper

Designing a questionnaire for a digital exam is relatively easy, it also reduces the chances of paper leakage. Producing a questionnaire for a paper-based exam is an intimidating task. From manual inquiry selection, paper design, and printing, to safe distribution of questionnaires, to various inspection centers, the logistics work is endless in the paper-based exam.

4. Remote administration

Online examinations can be proctored in automated inspection methods. when a webcam connected to the system takes a picture of the student for the examination and acts as an observer/spectator. This allows the same student to attend the exam and the system can track the student during the exam. The paper-delivered exam requires hiring observers for a specific quantity of students.

5. Immediate results processing

In the online test, the results are determined instantly and precisely. The paper-based examination requires many levels, so the evaluation process is time-consuming and likely to human flaws.

6. Exam security

Online testing presents adaptability and assurance in the examination. After all the questions have been stored in the system, the system can mix and ask questions to various students in diverse order. This reduces the probability of cheating. However, this is not reasonable on paper tests, and paper cannot be printed separately from student to student. There is also the probability of a paper leakage when transferring to a different examination center, and this jeopardy is overcome by using an online test system.

7. Get relieved of exam centers

The online exam method enables candidates to take the examination from wherever they are. When tests are managed remotely, hundreds of thousands of students can demonstrate the tests without incurring travel and accommodation costs. It also resolves obstacles such as scheduling exams at several centers, hiring observers, ensuring the security of these centers, and more.

8. Overcome logistics charges

Using an online exam reduces logistics costs. Technology regulates the inspection process. This is useful if we want to test multiple candidates in various places. Result evaluation is also made online, limiting logistics costs. When we write the exam in offline mode, logistics costs are high because there are many factors to consider, such as examination centers, hiring observers, etc. The answer sheets need to be sent to the designated test center on time. We also need a system that assembles the answer sheets from individual examination centers to a central location for further processing.

III. TECHNOLOGY STACK

3.1 SQL: Structured Query Language is used to perform operations on the records stored in the database such as updating records, deleting records, creating and modifying tables, views [1].

3.2 PHP: The PHP Hypertext Preprocessor is a programming language that allows web developers to create dynamic content that interacts with databases. PHP is basically used for developing web-based software applications. Using PHP, we can restrict users to access some pages in the website [2].

3.3 XAMPP: XAMPP is one of the widely used cross-platform web servers, which helps developers to create and test their programs on a local webserver. It consists of Apache HTTP Server, MariaDB, and interpreter for the different programming languages like PHP and Perl [3].

3.4 AJAX: AJAX is an acronym for Asynchronous JavaScript and XML. It can send and receive information in various formats, including JSON, XML, HTML and text files. AJAX's most appealing characteristic is its "asynchronous" nature, which means it can communicate with the sever, exchange data, and update the page without having to refresh the page [4].

3.5 JSON: JSON stands for JavaScript Object Notation. It is lightweight data-interchange format and is easy to read and write than XML. JSON is language independent it supports array, object, string, number and values [5].

3.6 CSS: CSS stands for Cascading Style Sheet. It is used to describe the presentation of a document written in HTML or XML. CSS describes how elements should be rendered on screen, on paper, in speech, or on other media. It is among the core languages of the open web and is standardized across web browsers according to W3C specifications [6].

3.7 HTML: HTML stands for Hyper Text Markup Language. It is the standard markup language for creating webpages. HTML describes the structure of a web page and it consists of a series of elements. HTML elements tell the browser how to display the content [7].

3.8 ATOM APPLICATION FRAME WORK: Atom is a free, open-source, and multi-platform text editor or IDE which supports NodeJS developed packages and embedded Git control. Most of the extending packages are freely available and developed by open-source communities Aton IDE is based on Electron Framework (previously called atom shell). The electron frame work allows the developer to use the desktop application on multiple platforms such as Linux, MacOS, and Windows with the help of NodeJS and Chromium. Atom IDE is written in less and Coffee script, developed and maintained by GitHub [8].

IV. PROPOSED SYSTEM [9]

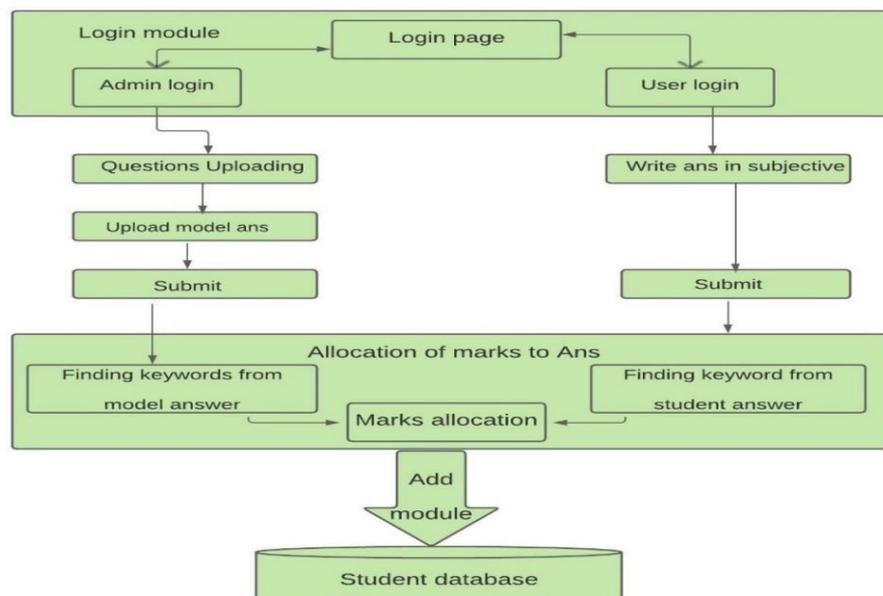
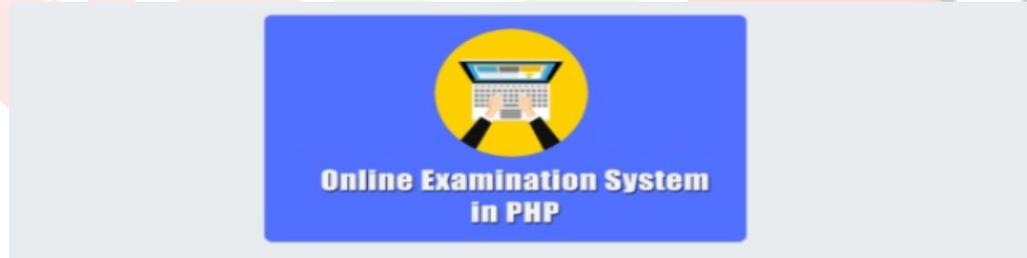


Fig.1 Steps involved in the Subjective Evaluation

1. **USER LOGIN:**
Users taking the test must first register and then login to their account and take the test.
2. **ADMIN LOGIN:**
The administrator will possess a login account. He can add corresponding question and answers. Answers are saved as the reason for the system which is used for validation.
3. **CHECKING THE ANSWER:**
The system verifies the answer by matching keywords in the fundamental key and the user answer.
4. **ALLOCATION OF MARKS TO THE ANSWER:**
The evaluation standards are established by the administrator and saved in a reference system. The system uses these sources and assigns the corresponding result to the user.
5. **ADDITION OF QUESTION AND ANSWER:**
Administrator can manipulate questions and answers in the system.



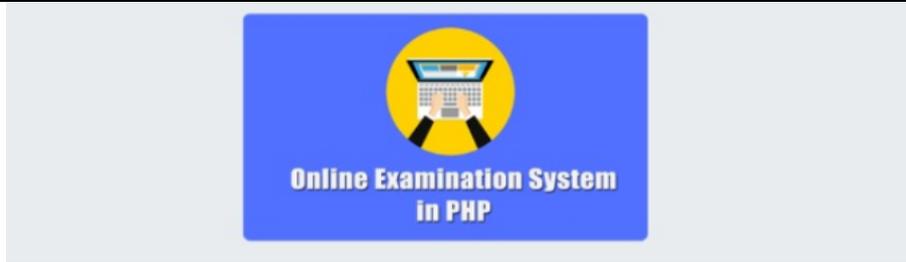
User Login

Enter Email Address

Enter Password

[Register](#)

Fig.2 Screenshot of the User Login



Admin Registration

Enter Email Address

Enter Password

Enter Confirm Password

[Register](#)

[Login](#)

Fig.3 Screenshot of the Admin Registration

Basic CSE Questions

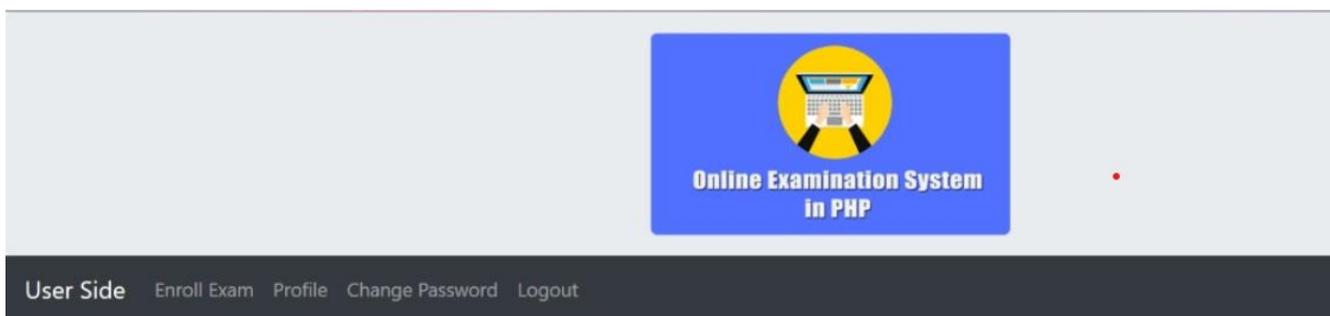
Exam Details

Exam Title	Basic CSE Questions
Exam Date & Time	2021-03-30 10:55:00
Exam Duration	5 Minute
Exam Total Question	10
Marks Per Right Answer	2 Mark
Marks Per Wrong Answer	-1 Mark

[You Already Enroll it](#)

Fig.4 Screenshot of exam details

To write a test student's first need to enroll in it. User should select the desired exam and should click on the enroll button. If the student is already enrolled for the exam, it will display as "You already enroll it" as shown in the above figure.



Over here only the exams that are created by the admin are available. Students can select the exams from the list and write the test.

4.1 ADVANTAGES OF THE PROPOSED SYSTEM

- If user changes the order of the points marks will not be deducted.
- System allocates full marks even if the sentence is re-arranged and written.
- System also identifies the synonyms of a given particular word.
- Examiner gets bored by checking many answers scripts; hence our system reduces their work load by automating the manual evaluation process accurately.
- System calculates the score and provides the results instantly.
- It removes the human errors that commonly occur during the manual checking.
- System provides an unbiased result, thus excludes human efforts and saves time and resources.

V. CONCLUSION AND FUTURE WORK

Automated assessment is usually analysed faster, consistent, and contribute continuous support for teacher, student evaluations and feedback. The various task designs and evaluation parameters can implement a variety of learning possibilities even when utilizing automated tools for real-time evaluation. The System is free from flaws, robust, and at the same time, it is efficient and less time-consuming. Also, provision is provided for later advancements in the practise i.e., adding payment methods for the examinations can also be introduced.

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