Campus Examination System Automation

Sourabh Rathor[1], Nikhil J U[1], Srinivasa H P[2]
[1]UG Students, [2]Associate Professor
[1,2]Department of Computer Science, T John Institute of Technology, Gottigere, Bengaluru, Karnataka, India
Email: sourabhrathor20@gmail.com
DOI:

Abstract

To develop a creative software solution which automates manual assessment and help organizations to limit the cost, time, exertion and human errors in the whole valuation process. The software solution is structured so that it tends to all exemptions and help organization to oversee valuation process easily. Exam scheduling is a relentless and tedious job and requires much planning. Additionally, exam seating plan must be made to alongside invigilation (supervision) duties to be set during exam. Descriptive examinations have been best evaluated as appraisals that can quantify learning results most ideal in the conditions. The conceivable outcomes of postponements and errors have been a perpetual challenge in successful administration of a descriptive examination at a large scale.

Keywords: Administration, Evaluation, Exam Scheduling, Invigilation

INTRODUCTION

There is tremendous change in educational field ranging from online conduction of exam to digital evaluation. Each application improves educational quality and removes flaws. There are many examples of digitization available. Online examination system is an efficient manner to conduct an examination. Online examination system also saves or reduces time required for paper checking as well as it saves paper thus saving environment. The paper-based evaluation system can cause errors and difficulty of evaluation data analysis because the raw data of evaluation must be imported into computer system manually. Our examination process is very tiresome. Most of the colleges are maintaining examination information in records and hence a lot of paperwork goes into it. When number of records increases, it becomes difficult to maintain the information in the system. Automated software solutions using this system will help exam conducting activities to be done in more efficient way, by covering for the most important flaws in manual exam system, namely speed, accuracy and simplicity. A centralized system will make sure that the activities done in an examination can be managed efficiently. This has minimum paperwork, which leads to ease of managing, reducing confusions and increase efficiency. The project will also address access to various users including students, staff and admin. Most of the important processes in the institutes are carried out manually such as the registration of the students, managing huge information about students, faculty members, i.e., the teaching and non-teaching staff, managing documents for different entities which lead to enormous bulk of work. This results in poor efficiency, lots of documentation which again leads to unmanageable data, tedious process and requires a lot of time and human resource.

The main goal of the campus examination system automation is to minimize these workloads and make the exam cell management process much more convenient. The exam cell process consists

of the managing of student's academic details differentiated by the year, the departments, and the classes and also with respect to subjects of the student. The exam cell processes also include the generation of hall tickets, exam forms, results, gazette copies etc. These all processes are carried out either manually or with the help of some third-party software. The use of multiple software to carry out a process is never considered efficient. Moreover, most of the people do not want to do the evaluation for some reasons, for example, do not want to reveal their identities, do not see any improvement regarding their feedback in the past evaluation etc. There is an online evaluation web-based application for our faculty in order to analyze the data conveniently and accurately because there are many events or activities which are created, need evaluation and suggestion to know what to be improved and what to be kept doing.

Motivation of the Project

This project idea basically came from above mentioned software solutions. This is an innovative software solution which automates examination related processes and help institutions to minimize the cost, time, effort and human errors in the entire valuation process. The software solution is structured so that it tends to all exemptions and help organization to oversee valuation process easily.

RELATED WORK

Web based learning or e-learning is growing day by day, but the assessment framework is constantly addressed by the expert on the off chance that it is conducted remotely. The inquiries for the most part emerge about the legitimacy of the examinee and fairness during the assessment. In the paper, a biometric validation and tracking system has been proposed. Here, iris recognition is utilized as biometric validation device. The proposed arrangement is cost efficient and partially automatic. This arrangement will assist the manager with authenticating the examinee as well as to track the examinee during assessment [1]. In view of the exploration of local and outside research situation, the paper analyses the significance of assessment framework in college and advances the improvement of assessment that depends on .net technology. The framework can set various specialists for various client groups by different college requirements. It understands automatically on paper setting and exam totally. Additionally, the framework receives systematic chain of command procedure to distribute problem coefficient and picks questions arbitrarily which makes the test standard and scientific. The framework incorporates exam library gathering subsystem, paper generating subsystem, online assessment subsystem and test producing consequently subsystem. In addition to the fact that it completes the entire assessment process which incorporates setting exam papers, online test, checking exam papers and analyzing, the framework additionally simplifies the current examination process and advances the effectiveness of it. Therefore, this system can separate teaching from exam and is able to be widely used to investigate teaching and studying effect and separating teaching from exam [2]. BeEvaluator was acquainted and created with given an easy to use assessment framework, for producing an assessment and proposing questions which are identified with KPIs of the event by means of web-based framework. It makes a powerful assessment structure; it needs to be approved by the administrative team before the framework creates the assessment structure [3]. In the period of globalization and the internet, the universities must reshape educational plans, to incorporate non concurrent e-learning advances so as to stay focused and draw in the best students and educators. In the paper, the advancement of an all-out

online customized assessment course of action of computerized circuits is analyzed. Specifically, open source writing computer programs was used to build up a dynamic site for mechanized student assessment in order to help offbeat e-learning, supported by a RDBMS (Relational Database Management System). The application development language is the dynamic programming language for web applications PHP (recursive acronym for *PHP: Hypertext Preprocessor)*, while we utilize the PDO (PHP Data Objects) expansion for a protected and secure association with the database. The framework supports different classes and numerous classifications for every exercise, which thus can contain various tests, which are all overseen by the administrator (professor) through the web application. Also, questions and answers are built randomly by a generator program created in C language. The professor can regulate a functioning test continuously, and change the time span of the submission for every student. After the accommodation of a test, he has the choices to review the content and document type answers that were incorporated into it, to administer a systematic rundown of the appropriate responses given by every student lastly to deliver PDFs with those answers and view different graphs about the outcomes. The tests are open either by confirmed students or by students who have gotten an individual distinguishing proof number (token) or by free clients with constrained benefits [4]. Online education has turned into a critical strategy in learning advancement, spread and application with the improvement of web and system database. The target of this work is to build up a superior, faster and progressively dependable of student evaluation. The extent of this work is exceptionally intended for medical instrumentation, (ESE 624) student to understand any inquiries identified with the subjects in the course. The system was developed by using PHP

programming and Adobe Dreamweaver to design the website. The WampServer software was used to develop a database for the system. With the online education and assessment framework, the procedure can have limited the work for instructor and educator to marking a paper and the use of paper can be decreased in college and school [5].

EXISTING SYSTEM
Traditional evaluation systems are paper based and may cause errors. The results are delayed due to manual evaluation. The existing systems have few features like only evaluation and publishing of results. The cost of implementing a solution is very high. Existing framework is moderate and inefficient. Report generation is likewise not a simple task in the present circumstance. Likewise, in the event that the report is produced, at that point computations are done physically that prompts more mistakes. There is a great deal of manual work engaged with current framework and mix-up in one detail can prompt wrong generation of page. No legitimate gathering of prerequisites leads to a tremendous issue for this framework. This framework is to upgrade manual work and furthermore more energy is spent to distribute the seating arrangements. Most of the existing software's require client-side installations and scanning of answer books require high hardware cost. Therefore, the fundamental knowledge of the existing evaluation system was analyzed and researched.

Disadvantages of the Existing System
- Existing system was not user-friendly.
- System was not well organized and precise.
- It was time-consuming.
- Information was redundant and inconsistent.
- It didn't integrate all the modules.

PROPOSED SYSTEM
The design of this project is based on web application framework. It is convenient for

the users to access from any locations. The individual installations of software can be eliminated. This project also aims to bring in a centralized system that will ensure the tasks and activities related with examination can be effectively managed. Also, the proposed solutions result in faster completion of examination related works for timely publishing of results. The solution is secure, reliable, cost-effective and user friendly.

Advantages

- Individual installation of software is eliminated.
- Compatible with low configuration systems.
- Easier to conduct and manage examinations in institutions.
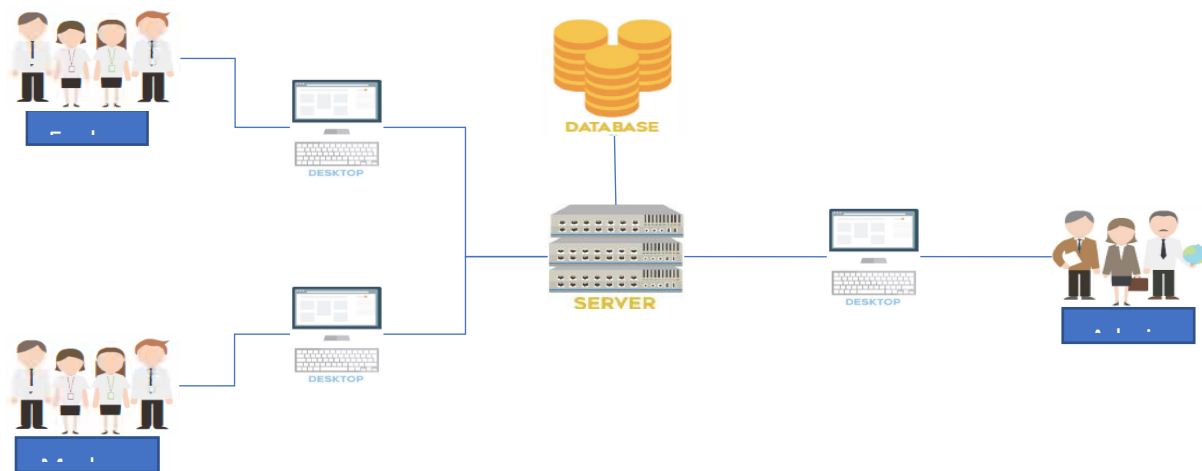- Hashing techniques are used which are more secure.

Figure 1: System architecture.

DESIGN AND IMPLEMENTATION

The software development is divided into module wise. There are 3 modules in the Project as shown in Fig. 1. The flow of the system architecture in all the modules are connected to the server which has the project installed and that server is internally connected to the database. System Architecture is as follows:

Evaluator: First module is for the "evaluator" in which the main task is evaluation, but along with this, it also contains some features to update personal details of the current evaluator. The evaluator will evaluate those booklets which are allocated by the controller. The identity of the student's booklet will not be known to the evaluator, this is known only to the controller. The evaluators can choose the booklets based on the allocated subject and proceed for evaluation. The booklets will be having an encoded format name which will only be known to the administrator.

Moderator: Second module is for the "moderator" in which the moderator is already assigned with few evaluators, among the evaluator's corrected scripts, the moderator will choose some random scripts and evaluate the same, and the maximum of those two evaluation marks will be assigned to the candidate. The allotted marks by the evaluator will be visible to the moderator during correction. "Moderator" module will also have the features to update the details of the current moderator. In other words, Moderator and Evaluator module are more common other than moderation scripts which are assigned to a specific moderator.

Admin/Controller: Third module is for the "admin" in which the admin will have the access to update or change details of college, department, courses, subjects, faculty etc. The admin can insert or update the question papers, scheme of evaluation and other details relevant to evaluation system. The admin is responsible for assigning answer scripts to evaluators and moderators. Also, the admin will assign the evaluators to the moderators. One of the main features of "admin" module is that, the digitization of candidate's answer scripts through web application and desktop application. The admin can access the feature from anywhere in that network and he/she can scan the answer scripts, question papers, scheme of evaluation where scanners are attached. Also, admin will be overseeing the exam cell management system which is used for conducting the examination in the institution, this involves various processes such as room allotment, booklet verification, time table scheduling etc. This module is controlled by "exam-cell administrator". In room allocation process, the details of the room number and the students will be provided to the admin and then the rooms are allocated. Based on the allocated rooms, the time table scheduling is done. Booklet processing is also done in this module. Admin can generate report based on the dates. Swapping of the duties allotted to the faculties is also done but it should be approved by the admin. The design of the project is based on web application framework meaning that it can be accessed from anywhere and even the system is having low configuration. It is convenient for the evaluators and admin to access from their locations. The individual installations of software can be eliminated. Also, the proposed solutions result in faster completion of evaluation work for timely publishing of results.

Software Framework
In the proposed software, we are using Microsoft .NET framework for developing the features. It includes ASP.NET, C#, jQuery, AJAX, JavaScript and Microsoft SQL Server.

CONCLUSION
The innovative windows solution is useful in examination related processes efficiently. Considering the incredibly interlaced nature of exam cell activities, a computerized solution for significant exercises like result generation and form filling would enormously give profit to the institution. The utilization of up-to-date open-source software guarantees an incredible money saving advantage while looking after profitability, along these lines improving the student understanding and estimation of education. As colleges/ universities assess a huge number of answer contents per semester and the measure of effort and cost is immense if in case of physical valuation, this software solution will resolve these problems. All the appropriate answer scripts will be scanned by scanners and transferred to the server. Approved evaluators gain admittance to the transferred answer scripts for assessment and the marks are entered on the framework and the total marks are determined automatically, thus eliminating any possibility of tabulation errors. The UI (User Interface) is basic and straightforward. Evaluator can gently complete the valuation on-schedule.

FUTURE ENHANCEMENT
The online evaluation system for campus may be further enhanced to recognize handwriting and matched with key answers for automatic evaluation of answer scripts as well as to develop Mobile App for evaluation process.

REFERENCES
1. Aditi Bal, Arunasish Acharya (2011), "Biometric authentication and tracking system for online examination system",

International Conference on Recent Trends in Information Systems, E-ISBN: 978-1-4577-0792-6.

2. Nan Yang, Xie Chenguang, Gao Weiwei, Ma Xianmin (2012), "The design of exam system on the basis of .net technology", *IEEE Symposium on Robotics and Applications (ISRA)*, E-ISBN: 978-1-4673-2207-2.

3. Nutnapin Suwattananon, Nuttira Thongliam, Nuttamon Wongwachirawanich, Pawitra Chiravirakul (2016), "BeEvaluator: An online evaluation system with KPIs matching", *Fifth ICT International Student Project Conference (ICT-ISPC)*, E-ISBN: 978-1-5090-1125-4.

4. Catherine Vafeiadou, Pantelis Vasiloudis (2016), Minas Dasygenis, "Online automatic examination system for digital circuits", *5th International Conference on Modern Circuits and Systems Technologies (MOCAST)*, E-ISBN: 978-1-4673-9680-6.

5. Muhammad Azim Bin Azman, Nina Korlina Madzhi1, Juliana Johari, Norlida Buniyamin (2017), "Design and implementation of an online education and evaluation system", *2017 IEEE 9th International Conference on Engineering Education (ICEED)*, E-ISBN: 978-1-4673-6956-5.

6. YS Evangelos Grigoroudis (2009), "Customer satisfaction evaluation: methods for measuring and implementing service quality", *Springer Science & Business Media,* New York, E-ISBN: 978-1-4419-1640-2.

7. K Hurt (2012), "Let's grow leaders", Volume 12, [Online]. Available: http://letsgrowleaders.com/res u Its-execution/the problem- with-kp-is/. [Accessed 11 03 16].

8. S PriyaDharshini, M Selva Sudha, Mrs. V Anithalakshmi (2017),, "Exam cell automation system", *International Journal of Engineering Science and Computing,* Volume 7, Issue 3.

9. Dayan and G Savakar, Ravi Hosur (November 2015), "Automation of examination system", *International Journal of Science and Research,* Volume 4 Issue 11.

10. Bondre Rutuja Avinash, Durgi Varsha Vijaykumar, Mohite Pradnesh Rajeev, Parkar Vishal V (February 2015), "Automated examination support system" *International Journal of Current Engineering and Technology,* Volume 5, Issue 1, E-ISSN 2277–4106, P-ISSN 2347–5161.

11. SS Aravinth, G Pavithra, M Myvizhimalar, D Divya, M Rathinakrithika (2014), "Exam hall seating arrangement system using PHP", *International Journal of Innovative Research and Technology,* Volume 1, Issue 11, ISSN: 2349–6002.

Cite this article as: