



## Reva Parikshak Online Examination System

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 29 Nov 2023	<i>With the current situation of the coronavirus pandemic constantly rising, Universities and schools must allow flexibility when it comes to conducting exams. This is where our online examination portal comes into picture. It is a web-based application used for conducting exams online which replaces traditional paperwork exams. It is implemented using PHP and SQL. Online MCQs based exams can be conducted with proctoring which results in less workload for faculties and also students can give exams without the need of going to college. Teachers can add or delete questions and can also mark the correct answers for each of them. The admin maintains the faculty and student's database and helps in allocating students and teachers of respective branches together. The teacher/students can check the student's results as soon as they complete their exam. Thus, the main purpose of this system is to save time, work of the faculty and to go environmentally friendly without using paper.</i>
CC License CC-BY-NC-SA 4.0	<b>Keywords:</b> PHP, MYSQL.

### 1. Introduction

Online Examination system has become one of the fast-growing methods because of its pace and precision. Many organizations, recruitment firms and coaching centers are implementing this technique. It is a MCQ's based examination system. The assessment is more reliable, accurate and fast compared to the traditional examination system because it reduces workload and time of a faculty. It provides an easy environment for all the users (faculty/students). The response given by a student will be calculated automatically based on the correct answers set by the faculty. The faculty can add/delete questions and also set the correct answers for all of them. The whole process is proctored by the faculty. It can also be used to upload question banks. When the Student starts the exam, the timer will monitor the remaining time left.

The questions will be randomized for each student from a set of questions provided by the faculty. The Objective Questions will be checked by the system automatically from the correct answers stored in the database. The Administrator manages students/faculties by assigning the faculty to respective branches and sections to which they belong. Admin maintains a student/faculty database and also checks for any irregularities in the system. Only the admin has the authority to delete the records or to add new records. Admin has all the access to exam details. Thus, it helps students to take up exams from far distance and reduces workload of faculty, saves time and a lot of paper.

#### I. objective

It is a web-based application used for conducting exams online which replaces traditional paperwork exams. It is implemented using PHP and SQL. The assessment is more reliable, accurate and fast compared to traditional examinations.

- Students can take up their exams from home.
- Responses are checked immediately.
- Feedback and results are given instantaneously.

- Being an Online examination system reduces paperwork.
- Students can generate the report in a simple way.

## II. application modules

The design is divided into 3 parts:

- A. Student section
- B. Faculty section
- C. Admin section

### A. *Student section:*

Students can login to their respective accounts and take up the exams. If account is not present, they can contact the admin for the new account. They've to reset the password once logging in for the first-time using default password provided by the admin. Once logging in, they have the access to study materials provided by the faculty and also option from which they can take up the exam. As the exam ends, results are auto generated. They can view the feedbacks given by the faculty after the exams. They are proctored for the whole time by the faculty.

### B. *Faculty section:*

Faculty module is where staff can login to their respective accounts. Based on the sections allotted by the admin to the faculty, they can set the questions for the students of respective class and branch. They've the authority to add, update, view or delete the questions. Once exams are completed, they give their feedbacks. They'll monitor the students throughout the exam.

### C. *Admin section:*

Admin plays the crucial part in this system. He handles the complete system handling the database. He checks for the authentication of every user present and also handles the account errors. He also helps keeping track of all the records present. He can add, delete or update the user information according to branch and sections.



Fig. 1 Online Examination Module.

## 2. Materials And Methods

As discussed in the above section, the application is divided into three modules. Each of the modules is designed in a flexible manner.

Making use of open-source is more convenient but also requires more time to code. The proposed system (OES) can be easily deployed by the institutions to conduct exam in a more secure and accurate manner. The design is divided into 3 parts – (Student, Faculty and Admin section). All 3 modules are designed to bring out the maximum utilization of the system by deploying all 3 modules correctly. The admin section gives the authority to manipulate user info by adding/deleting users and also maintains database. Thus, OES module is easy, secure, flexible and user friendly. It is easy to deploy and maintain.

It saves more time and money compared to traditional exam practices and helps in generating results within a second which reduces work.

The 3-Module architecture gives the visual framework for all the Database applications. HTTP and HTTPS are the components that binds together the 3-module architecture together.

For implementation of the project, we have used 3-tier architecture.

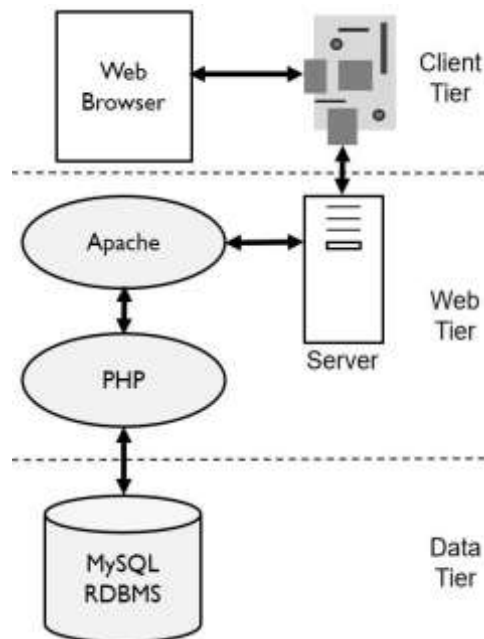


Fig. 2 Three-tier architecture

The above figure shows an illustration of the 3-tier architecture.

**Client Tier:** The Client side is basically an internet browser. The web browser is typically used to load the HTML resources from the server side. HTTP and HTTPS requests are made to access particular resources. Http response is given by the server part based on resources we ask for. Web browser is used because of easy deployment and supports many numbers of platforms.

**Web Tier:** This tier in the architecture brings all other tiers in conjunction, runs the structure and the data content which is displayed to the user. It provides security by authorization of the user and also provides flexibility. This is the tier which binds web and its database server together. PHP which is dynamic in nature is used for web application. The application layer is used for application server platform and application programs.

**Data Tier:** The tier in the architecture loads and recovers the data. It is also responsible for managing the updates, allowing parallel access from the web servers, providing security, responsible for data integrity by providing support like data backup. Importantly, a structured data tier should allow fast and versatile access to millions of users. Managing the data within this tier requires complex software, conveniently more DBMS or servers are designed to cope up with the complexities of the software. To use the DBMS in a proficient manner, skills are required to design and create the database and to query for each problem. A persistence layer is used under this tier.

The application design and implementation are divided into frontend part and the backend part. They both are most favored terminologies employed in web development process. Those terms are very pivotal for web development process and are different from one another. Both are connected together and acts as one. They communicate with each other to enhance the website's working procedure.

The frontend is a part of website's functionality which directly interacts with the user. It is the client side of the web application. Backend part is called the server side of the web application which stores, retrieves and manages the data of the frontend resources. Server side is the one which we can't see and also can't interact directly, we can use frontend to interact with the backend part.

The frontend is developed using the following:

- HTML stands for hypertext markup language which is the standard markup language for the creation of webpages which will be displayed on the web browser. It is not case sensitive; everything is built with the help of tags and all tags have pre-defined meaning.
- CSS stands for Cascading Style Sheets which is used for the styling the sheet i.e. The html documents are designed using CSS using various styles which will be displayed on the web browser
- BOOTSTRAP, Bootstrap is an open source, design framework to build static webpages and dynamic web applications. It is the most prominent framework used for developing responsive webpages using HTML and CSS.
- PHP stands for Hypertext Preprocessor which is a scripting language and works in the server part. It is used to generate dynamic webpage content. It is used to store, retrieve, delete or modify the data in the database.
- MySQL is a relational database system which is structured query language. It is used for web databases by adding, deleting and accessing the data in a database.



### III. flowchart

The working of examination module is shown in flowchart as follows:

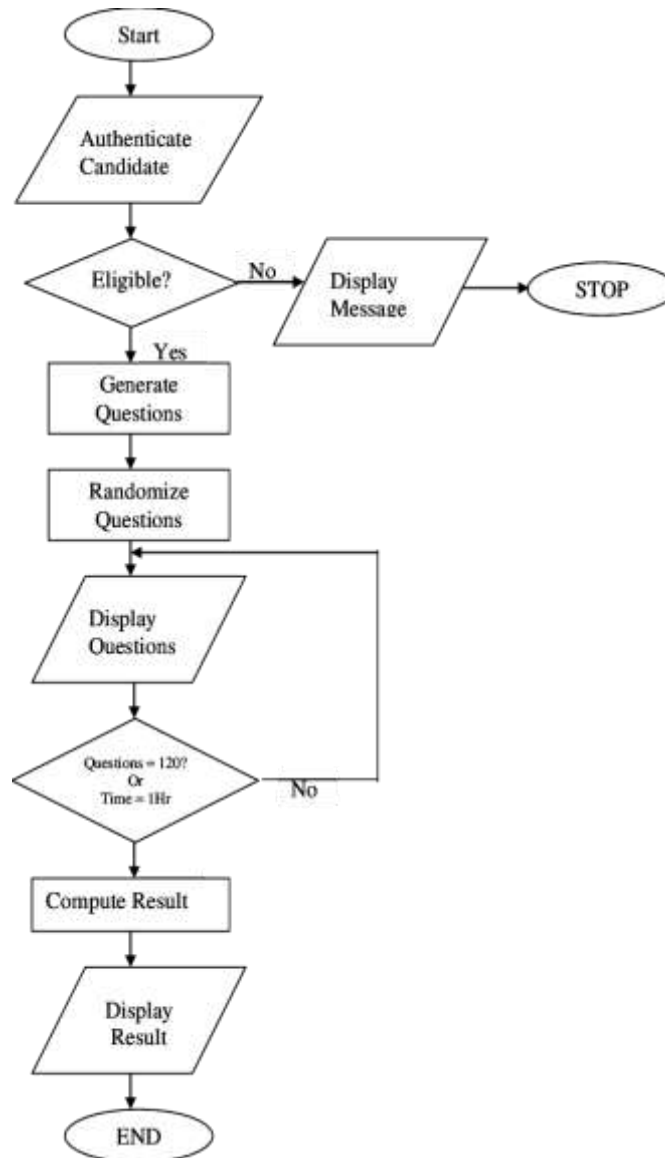


Fig. 3 Flow Chart

Once a student logs in to their respective accounts, we will be checking for eligibility based on the attendance count and also the fee status. If he/she is not eligible for the exam, Display the message “NOT ELIGIBLE, please contact the office” else take him/her to a new window where they can take up the exam.

The questions present in the database will be randomized and displayed for each individual for uniqueness of the question paper and also to avoid malpractice. A timer is set by the faculty which helps in tracking the remaining time left to attend next questions for the students and it also keep tracks of number of questions attended. If they complete the time/questions, further attending will be stopped and the results are generated instantly on the new window. Else, we will keep decrementing the time until it reaches the threshold frequency set by the faculty and also displaying the new questions for the students.

### 3. Results and Discussion

#### IV. experimental results

- I) Login Page: The user having their account created can login to using their respective Logins. The page for admin, faculty and student which will take student ID, Faculty ID, Admin ID and password as input.

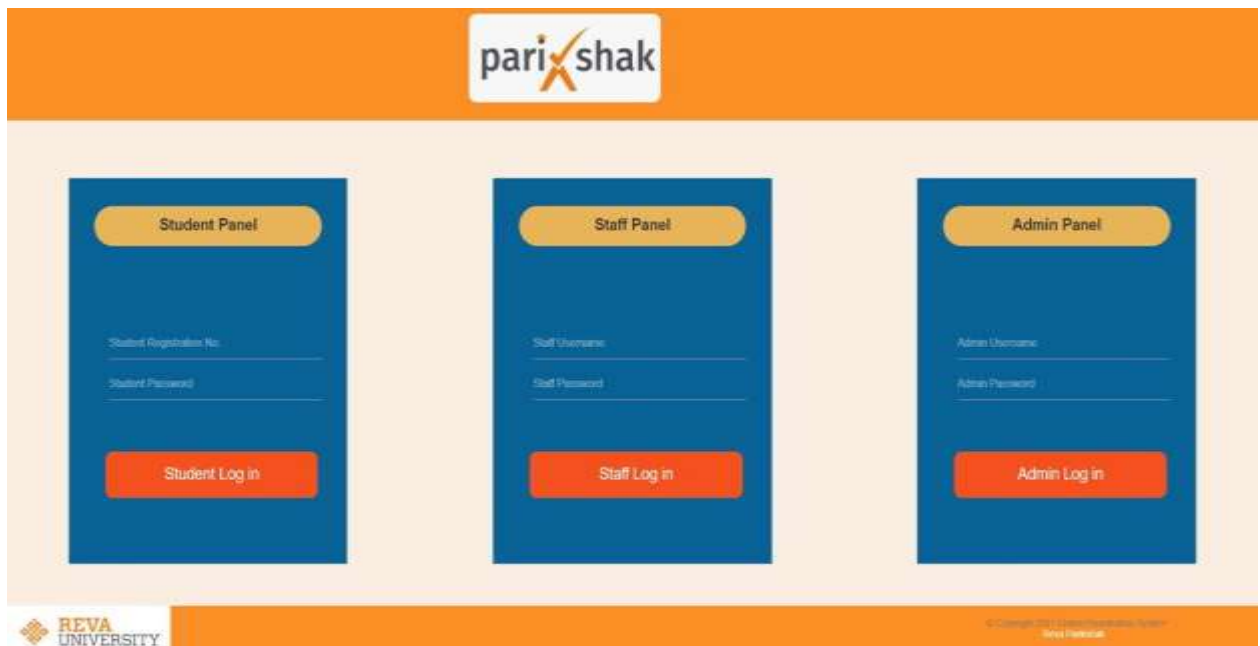


Fig. 4 Login page

II) Dashboard: Each user has a dashboard of their own.

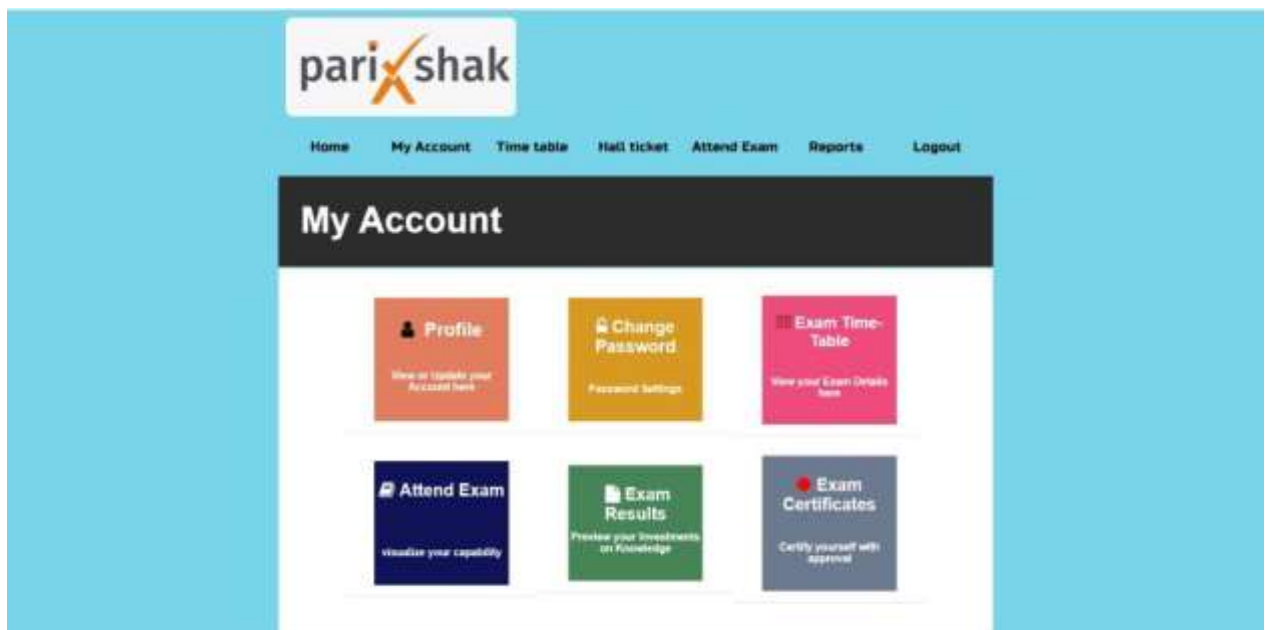


Fig. 5 Dashboard.

III) Schedule Exam: The admin/ teacher can be able to schedule examinations for the candidate by selecting the required subject, date, time.

Home Users Settings Students Exam Reports Logout

## ADD Teacher / Administrator

Name	<input type="text" value="Enter Name"/>
Course	<input type="text" value="Select"/>
Designation	<input type="text" value="Select designation"/>
User Type	<input type="text" value="Select"/>
User Name	<input type="text" value="Enter User Name"/>
Password	<input type="text" value="Enter Password"/>
Confirm Password	<input type="text" value="Enter Password"/>
Status	<input type="text" value="Select"/>

Fig. 6 Scheduling exam

- IV) Attending Exam: The candidate can attend the exam at the mentioned time. The candidate can navigate through the questions and should finish the exam with the specified time.

parikshak

Home My Account Time table Hall ticket Attend Exam Reports Logout

Time remaining: 00:58:13

Question No	1
Question	C++ is
Option A	<input type="radio"/> object oriented
Option B	<input type="radio"/> on oriented
Option C	<input type="radio"/> object or
Option D	<input type="radio"/> oral orient
	test desc

<< Previous Next >>

Hints or Description

Total Questions: 0

1 2 3 4 5 6 7 8 9

**FINISH EXAM**

REVA UNIVERSITY

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Fig. 7 Attending Exam

- V) Adding Users: The admin has the authority to add and edit the users such as teachers and candidates in the database. The below figure shows the addition of teachers in the model.



Fig. 8 Adding users to database.

- VI) View Results: The Candidate can view his/her results, whereas teachers can view all the results of their respective students.

Name	Registration number	Course	Subject	Datetime	Result	Certificate
Anand	1001	BBM	Business Law	2020-06-27 07:21:00	Click here	Click here
anson	2014400	SCA	Computer science	2014-03-22 12:59:00	Click here	Click here
anun	2014128	SCA	Software Programming	2020-07-20 20:45:00	Click here	Click here
ayan	2014305	SCA	Software Programming	2020-07-20 20:45:00	Click here	Click here
Garish kumar S	7894566	BBM	Business Law	2020-06-27 07:21:00	Click here	Click here
harshiya	2014458	SCA	Software Programming	2020-07-20 20:45:00	Click here	Click here
Jack	2014126	SCA	Software Programming	2014-03-27 12:00:00	Click here	Click here
jahfar	2014456	SCA	Software Programming	2020-07-20 20:45:00	Click here	Click here
mayur	2014111	BSC	Data Structure	2014-03-18 12:00:00	Click here	Click here

Fig. 9 View Exam Results.

#### 4. Conclusion

The concept of REVA PARIKSHAK (online examination system) is to minimize usage of paper and transform all data into digital form and to bring change in existing traditional examinations. It is also observed that all the information required can easily be obtained and results are calculated spontaneously. It saves a lot of time compared to the traditional examination system and also helpful in saving the environment by saving the papers.

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