



Online Exam Portal with AI Proctoring

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Abstract: In today's world, as Covid-19 pandemic has made everyone stay at home, it has impacted education sector a lot. Students now have to attend classes online and many software were introduced to enable online teaching. Similarly, for taking exams there were many technologies introduced, but students are able to cheat in the exam. This type of practice needs to be stopped. The project aims to provide the solutions to catch the students and avoid the cheating during exams. I have created an Online Examination Portal for giving exams. It can be used by students to give exams and track their progress, and used by institutions to conduct examinations. I have used HTML, CSS for layout of the portal; JavaScript to decide what action will happen on user's inputs to the portal; and MySQL to store the question and answers for the test and Artificial Intelligence to track the face of the student.

Keywords: Artificial Intelligence, Covid-19, HyperText Markup Language, Image processing, JavaScript, Online Examination Portal.

INTRODUCTION

The online Examination portal is a web-based platform which can be used by administrator, students and teachers from any remote location. It is a fully developed automated system which is used to efficiently evaluate the candidate progress which saves the time of Examination Controller and also gives fast result. The Administrator of the system has the full authority to create or propose tests or papers. Teachers have the authority to create a question bank for the test. It is cost and time effective. The candidate can login through computer with their enrollment number, email id and a password which should match with the details in the student's database, and then they can take the exam. Candidates can give their course examination in a specific duration and in specific number of questions as specified by the administrator. The questions can appear in both mode MCQ (Multiple Choice Questions) and subjective mode i.e., answers in paragraph. The questions are arranged in a random order so that possibilities for getting same questions in the same order for the students are less.

Due to the Covid-19 pandemic, everything is shifted towards online like meetings and classes happening on different video platforms. There is still a need for a platform to conduct exams as the exams are also being conducted virtually. The proctoring of the exams is a major concern for the teachers as the exams are happening online the rate of cheating has increased a lot and invigilators are unable to catch the defaulters. Rather than giving exams offline, it is much more beneficial to conduct online exams. It replaced the paperwork and overcame the outcomes of traditional way of examinations using paper and pen to laptops and software.

Scope:

1. **Economic Feasibility:** Economic analysis is used frequently for evaluation of the effectiveness of the system. Its use is to determine the benefits and savings that are expected from a system/ site and compare its costs, decisions which are made to design and implement the system. In this system, the organization is mostly satisfied by economic feasibility because, if the organization implements this system, it does not require any workforce for invigilation and resources to carry out examination like electricity, paper, invigilators.
2. **Technical Feasibility:** Technical feasibility centers on the existing manual system of the test management process and to what extent it can support the system. It is also one of the important phases of the system development activities. The system is user friendly and offers high processing speed which will enhance the working. Therefore, the cost of maintenance can be reduced a lot. Since, the processing speed is high and the work is reduced in the maintenance point of view, thus management will be convinced that the project is operationally feasible.
3. **Behavioral Feasibility:** People by nature/ inherently are resistant to change and computer has been known to facilitate changes. There are various levels of users and in order to ensure proper authentication, authorization and security of sensitive data of the organization, highly skilled workforce will be needed to monitor the exam portal.

Contribution of the project towards the society

In the existing system, the whole process of assigning test and evaluating their scores after the test is done manually. Processing the answer sheet/ test paper i.e., checking and distributing respective scores uses lot of time thus delaying the results. The online examination system will decrease the time for the results to be declared because calculation and evaluations are done by the simulator itself. Results are not precise as calculation and evaluations are done manually and

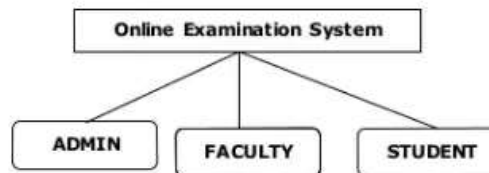


errors while checking by teachers are a main concern which will be reduced to nil in the online examination system. To conduct exam invigilators are required, but through this system AI proctoring be invigilating the students. The chances of paper leaks are more in the current system as compared to proposed system. The logs of appeared candidates and their marks are stored and kept as a backup for future use.

METHODOLOGY

Project Description

This project has three modules which are as follows:



Module Design of System

The processes to design the described modules of system involved are:

- **Admit Card**

- Student ID card use as an admit card. The student ID card will function as a proof that the registered person is giving the exam.

- **Announcement**

- Examination Announcement such as notification for exams start or end can be seen.

- **Schedule**

- The schedule for the examination is made here. The administrator has the rights to change the timings of the test. During the test he can modify the timings.

Description of Project Module

There are 4 types of modules:

a. Student Module:

- Login to the online examination system.
- There is a personal window because in this window, person can only enter by login by entering credentials which they entered while registering.
- Enrollment ID of student is user id and password by which a student can enter the system.

b. Exam Module

- Login to the online examination system
- Browse the test
- Attend Test
- Submit the responses
- Wait for the result
- Check the result

c. Test Pages

This is the most creative and important pages in this project. Here all the questions will appear. This test pages includes:

- Timer
- Next
- Previous
- Submit

The form of question in test pages:

- Multiple Choice Questions
- The questions are selected at random.
- Paragraph based Questions

d. Administrative Module

This module is protected by user id and password. Ordinary users of the software will not be permitted to enter the



administrative module of the application. Only Examination Controller (Admin) and Academic Director of any the institute has authority to access this module of application.

e. Staff Module

This model will be used by staff to add questions for the exam. The module will be only accessible by staff only. Question bank will have a feature to add, modify and delete questions from subject. Here Examiner can upload questions and set marking schemes and test duration. The questions have different attributes like subject, topic, marks, question type (multiple choice or true / false or subjective), question text, options and the answer. The question as well as options can be image or text.

f. Result Module

In this module students and examiners will get instant results if the feature is allowed by the institution. Results can also be printed as soon as the test finishes if the feature is allowed by the institution.

g. Dashboard Module

All the users can access this module. Here administrator or examiner can view profile, personal information/ student details, Marks report, examination report, etc. It has a facility to add student's details, view Student List as well as edit student details. Also, administrator can manage users' details, course and subject details. Students can see what exam they have and start to give exam from that page.

h. Account Module

The module maintains the details for each student like name, class, enrollment no, phone number etc. It also provides the facility to edit student's details. The students can also change their own passwords in this module if required.

Designing

Use Case Diagram: Its purpose is to present a graphical overview of the functions provided by a system in terms of actors, their goals. Also, its purpose is to show how system functions work, and who are the ones to perform i.e., actors. Roles of the actors in the system can be seen through the Use case diagram.

Fig. 1. Use Case Diagram for Administrator

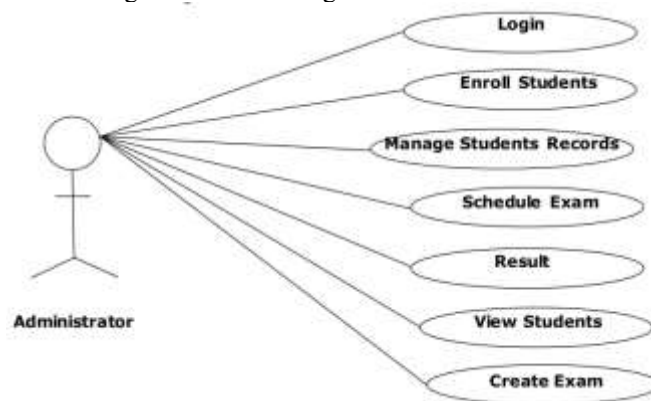


Fig. 2. Use Case Diagram for Student

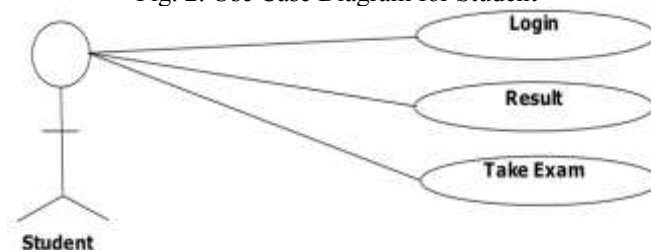




Fig. 3. Use Case Diagram for Faculty

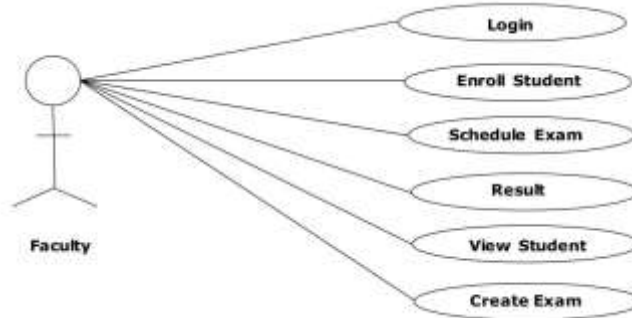


Fig. 4. Data Flow Diagram

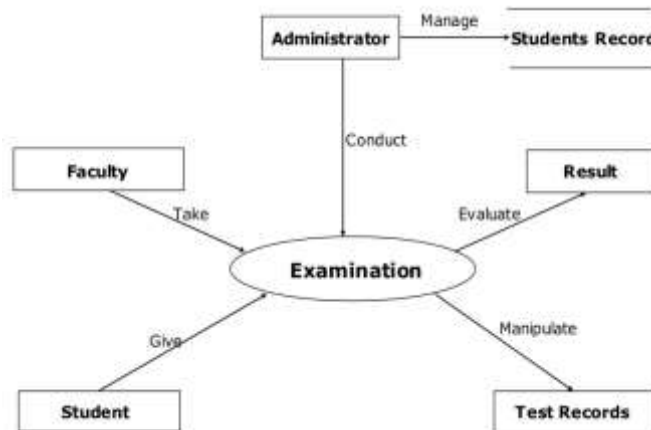
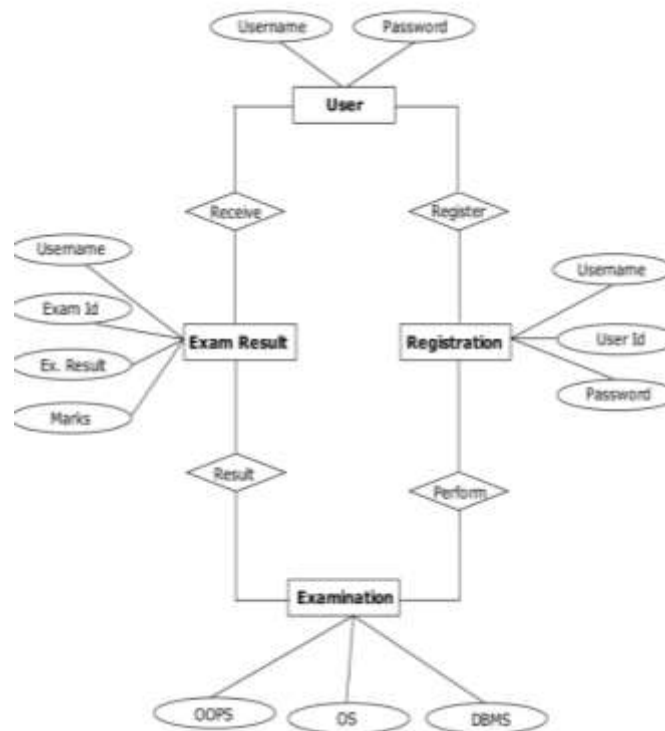


Fig. 5. ER Diagram



**HARDWARE & SOFTWARE TO BE USED****Front End Technology**

- **HTML:** Hyper Text Markup Language is used to create static websites.
- **CSS:** Cascading Style Sheet creates attractive layout and design.
- **JavaScript:** It is a programming which makes the website dynamic i.e., website becomes user interactive.

Back End Technology

- **PHP:** It is Hypertext Pre-processor which is widely used in open-source. It is a general-purpose scripting language that is especially suited for dynamic websites.
- **MySQL:** MySQL is an open-source database. MySQL is the most popular database system used with PHP language.
- **Browser:** Google Chrome (latest version should be installed).

Hardware Specifications

- **Operating System:** Windows 7 or above
- **Processor:** Intel core I5 or above
- **RAM:** 8 GB or above
- **Hard Disk Space:** 500 GB or more

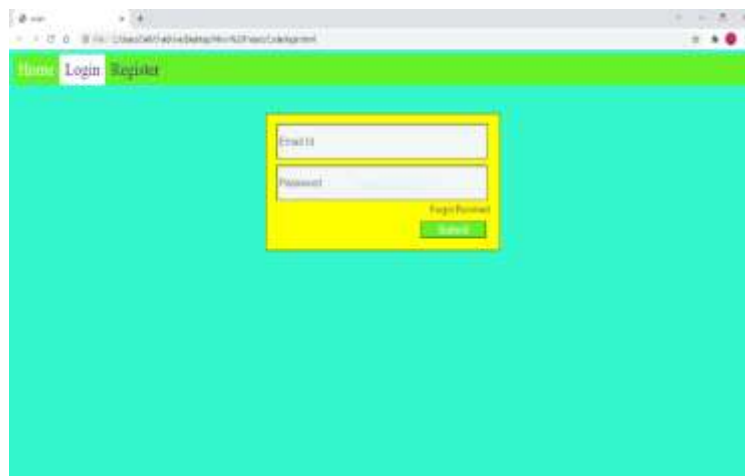
RESULTS

Fig. 6. Login Page

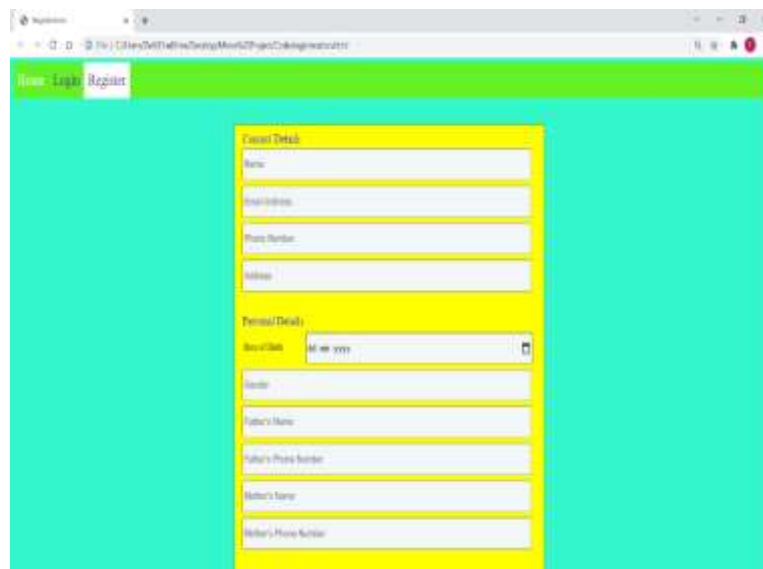


Fig. 7. Registration Page 1

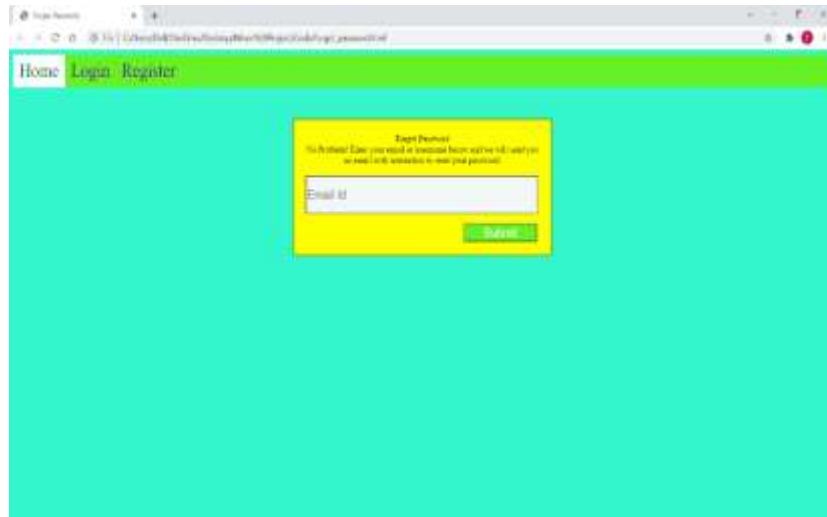


Fig. 8. Registration Page 2

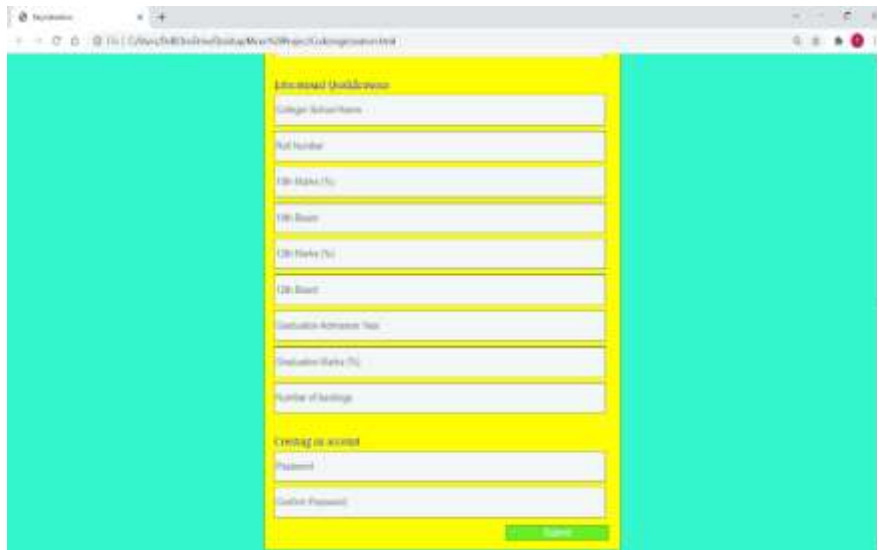


Fig. 9. Forgot Password Page

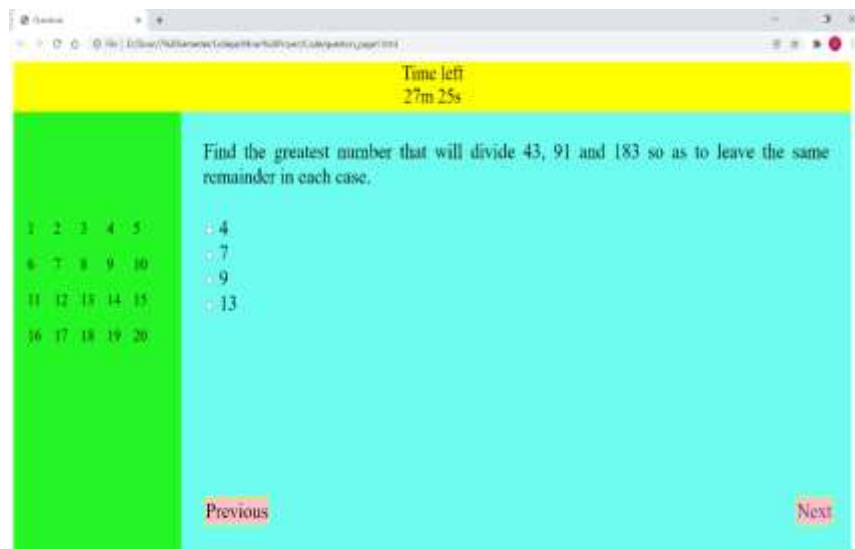


Fig. 10. Question Paper Page

**CONCLUSION**

The project is in its development phase. Till now webpages are ready. Next work is to connect the database with the webpages to store the information of the user. The questions will be stored in database. Questions are now being collected too.

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