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Write Rule Breaker

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Abstract:- Online examination will slowly become an important form of examination with the combination of Information technology and Online teaching in both schools and colleges. Online exam is a web-based examination system where examinations are conducted online, either through the internet or intranet using a computer system. The main aim of the online examination system is the effective thorough evaluation of the student through an automated system that reduces the required time and obtains fast and accurate results. This technology can make use of the biometric systems that are highly developed for use in various applications. Biometric systems are usually used for the identification and analysis of the characteristics of the human body such as fingerprints, sound patterns, facial patterns, retina and other body structures that can be used for system authentication. Web Real Time Communication (WebRTC) is a networking technology which is used in this project to enable real time video, audio and transmission of data across the web. The main aim is to develop a prototype of a face-based online exam application to detect student attendance and behaviour during the exam.

Keywords:- *WebRTC*

I. INTRODUCTION

An online examination system is a platform which provides online based exams that are having multiple features and functionalities. It uses an online platform to conduct exams and also the evaluation is done through this same platform. Such types of online exam platforms are having some advantages and disadvantages. Some of the advantages include it eliminates the dependency on paper for question and answer sheets, and eliminates manual work load which is too much in case of an offline test. By integrating computer science and online teaching, online examination will slowly become the leading form of college examination. Various technologies are usually used for the identification of the characteristics of the human body such as retina, fingerprints, sound patterns, facial patterns and other body structures that can be used for system authentication. So we try to exploit that opportunity to implement an efficient examination system just as we write an exam but as an online one where the student and faculty are at two different places but it feels like a real examination.

II. RELATED WORK

A. Mobile Examination System

The Mobile examination system proposed by Prashant K Gupta[1] is a method of conducting the examination without the employment of pen and paper. According to this method, the student writing the exam requires a mobile device which helps them to take the examination. Immediately after the ending of the examinations, the results will be displayed. The system designed was incorporated with all the technological advancements in mobile device design & wireless technology which was available then. The inspiration behind this design of the system was to find an alternative to the traditional method of conducting the examination where there is a lot of headache involved for both the students as well as examiners. This system was fundamentally an addition to the online examination system. This system was created under the Qt SDK, a freeware IDE provided by Forum Nokia. SQLite is the backend database used here . This paper has brought out the detailed technical design of the mobile examination system along with the workflow between various modules of the system.

B. An online examination system supporting user-defined question type

This examination system was proposed and designed by SHAN Wei-Feng, HUANG Meng, Lijun [2]. The online examination system not only mirrors the justification but also objectivity of examination, but also releases the amount of work of teachers, which is accepted by more schools, certification organizations, and training organizations. Most

online examination systems don't allow users to define their own question types and only support many fixed question types, so they have pool scalability. This paper suggests a new online examination system, which allows users to define their new question types (user-defined question type) through composing of basic question types and user-defined question types and also provide several basic questions.This user defined question type is realized based on the object-oriented conception and composite design pattern. This new online examination system has overcome the drawbacks of old online examination systems and has better elasticity and flexibility.

III. PROPOSED SYSTEM

This is an online examination system that supports both the traditional ways of writing an examination and Multiple choice question type examination. The person writing the exam is monitored through a camera in order to prevent cheating during the exam. Face detection is also done in order to ensure the same. An upgrade given to a traditional way of writing the exam is that the person can type the words using a keyboard instead of writing them down. If the question requires diagrams as a part of the answer then he/she can draw it on any android device such as a smartphone or tablet which has the required application and is paired prior to the examination.

The front end of the website is made using HTML, CSS, and javascript. The backend of the application is made using the python language. The interface is made such that the student and teacher sit at two different places and the student writes examinations and the answer sheet gets directly stored as pdf to the database and the admin can directly access the answer sheet from there. The admins can directly upload marks and question papers to the student page. Here the student is monitored using face recognition techniques and if more than one face is detected the question paper will not be displayed.

IV. METHODOLOGY

We have used a simple combination of different technologies to implement a unique and innovative product which doesn't seem to be a big deal when it comes to the technologies used but shows and produces maximum output.

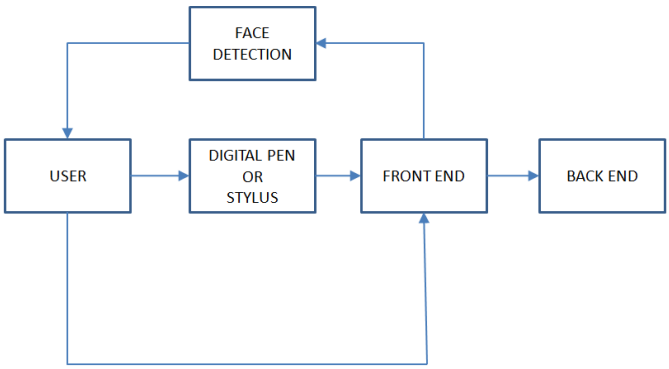

Fig.1 Architecture Diagram

A. *Front End*

Hypertext Markup Language (HTML) along with cascading style sheets (CSS) and JavaScript (JS) is used to create the front end of our project. HTML is a conventional markup language for documents created for the web browser shows which is supported by technologies like CSS and scripting languages. With the help of HTML and CSS-based design, the images and other objects such as interactive forms may be connected to the rendered page. HTML is a way to create structured documents that specify the structure and semantics of the text, such as headings, paragraphs, lists, links, quotes and other items.

Cascading style sheets (CSS) is a style sheet language used for decorating the presentation of a document written in a language such as HTML. CSS is designed for the division of presentation and content, including layout, colors, and fonts. This division can improve content material attainability, offer extra flexibility and manipulate within the specification of presentation attributes, allow a couple of internet pages to percentage formatting with the aid of using specifying the applicable CSS in a separate .css document which reduces intricacy and recurrence within the structural content material in addition to allowing the .css document to be cached to enhance the web page load pace among the pages that percentage the document and its formatting.

JavaScript, often abbreviated as JS, is a programming language that is consistent with the ECMAScript specification. JavaScript is a high-level, often at a time of lack, as well as a multi-paradigm language. One of the functions of JavaScript here is to set the timer and do the functions related to that such as ending the exam and so on. JavaScript is the leading client-side scripting language of the Web, with 97% of internet sites using it for this purpose. Scripts are embedded in or enclosed from hypertext markup language documents and move with the DOM. All vital web browsers have an integral JavaScript engine that executes the code on the user's device. JavaScript is used to create the canvas on which the student or the user is writing their exam. JavaScript also supports WebRTC which is used for monitoring the user who is writing the exam.

B. *Framework*

Flask is used in the back end together with python managing the database and its related activities. Flask is a web framework, a module of Python that lets anyone do web applications easily. It has a little and extendable core which is a microframework that doesn't include an Object Relational Manager or such features.

C. *Back end*

Python is an interpreted high-level programming language. Python's design ideology provides the ability to read the code with its remarkable use of indentation. Its language constructs and its object-oriented approach targets to assist programmers write uncomplicated, intelligent code for little and extensive projects. Python is dynamically typed and garbage-collected. Multiple programming paradigms, such as structured, object-oriented and functional programming are supported by Python. Python is additionally referred to as a

batteries included language thanks to its all-inclusive standard library.

D. Face Detection Algorithm-Haar Cascade

Haar Cascade is an Object Detection Algorithm which is used for the identification of faces in an image or a real-time video. This model has the best possible accuracy and was created from this training. The storehouse in github provides many models stored in XML files and can be read with the OpenCV methods. The models for face detection, eye detection, upper body, and lower body detection, etc are included in these XML files.

V. RESULT

These are the test results shown when we enter into the write rule breaker. The general aim of our project was to change the current manual system into an online one. This project would be of much use for educational institutions where the regular assessment of students is necessary. Our objective proved to be successful as we were able to implement our ideas to complete the project with an efficiency of almost 95% accuracy and the test scenarios of the various modules in our project is shown below:

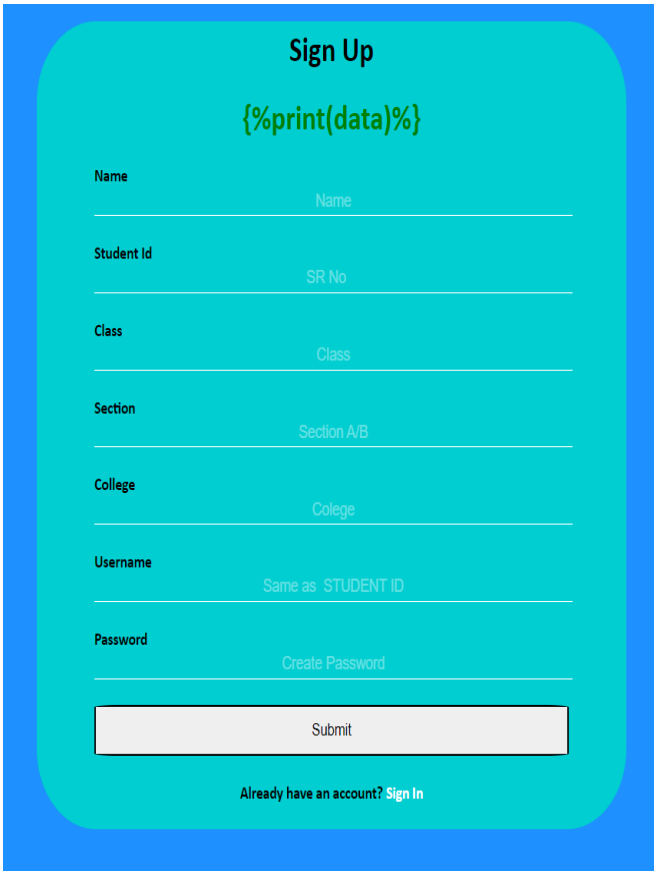

Fig 2 Signup page

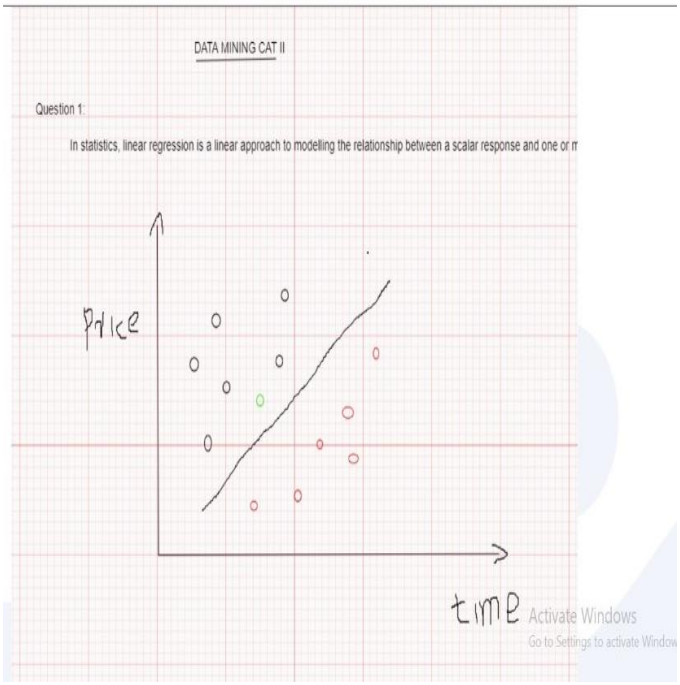

Fig.3 Canvas of the examination

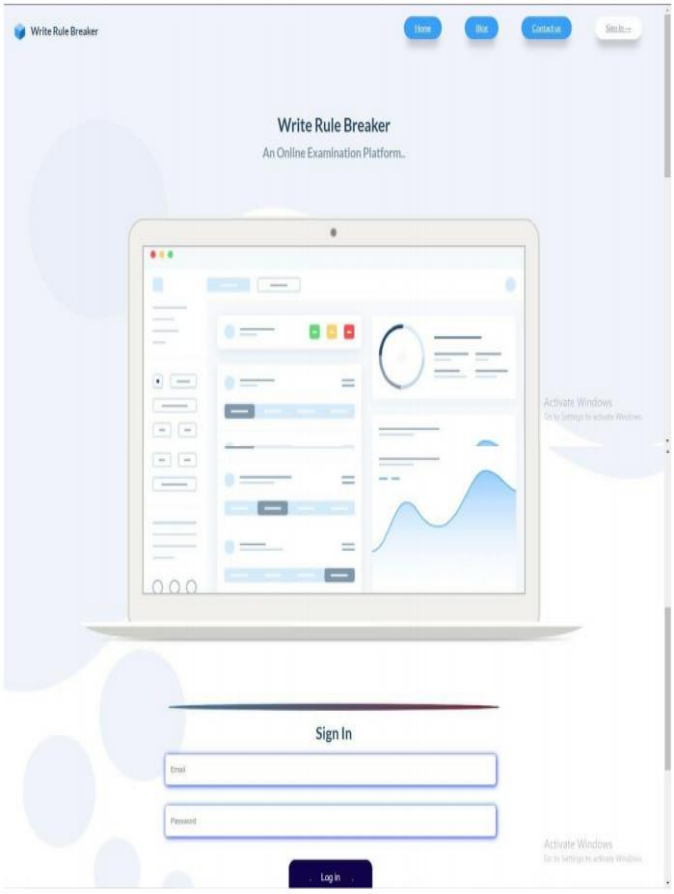

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Fig.4 Welcome Page

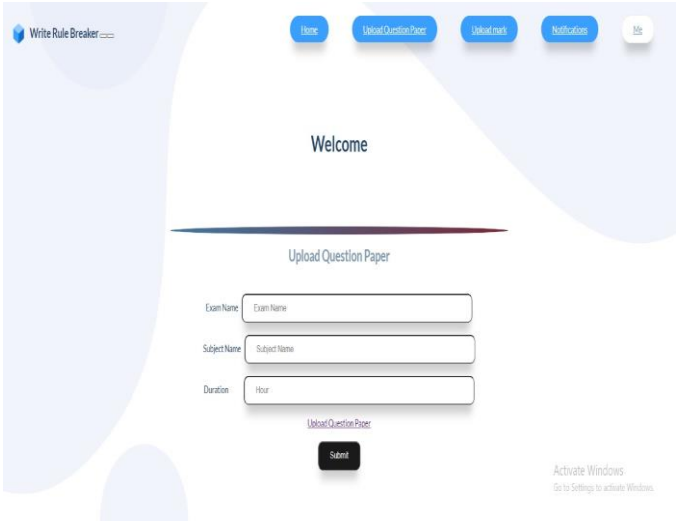

Fig.5 Question paper upload page

Fig.6 Mark upload page

VI. CONCLUSION

Most universities, during the initial phases of the pandemic, made the choice to temporarily avoid all in-person contact and shut their campuses completely. This was done to avoid spreading of the disease and due to the limited knowledge about the coronavirus. Several education institutions had to cancel their upcoming examinations due to the sudden attack of the virus. Because there was no proper understanding of the best measures to stop the virus's spread, collecting students into one room for a protracted period was not considered safe. Examinations are a pivotal part of the upper education mechanism and an obligatory step in providing students with accurate scores. Canceling pivotal education examinations entirely was simply not an alternative according to the University Grants Commission (UGC) of India. The UGC stated: that the Academic evaluation of scholars may be a vital milestone in any education system. The performance in examinations gives confidence and satisfaction to the scholars and reflects competence, performance, and credibility for global acceptability. So, with the importance of those examinations acknowledged, we attempt to exploit that chance to implement an efficient examination system even as we write an exam but as a web one where the scholar and school are at two different places but seems like a true examination.

FUTURE WORK

The present Covid situation demands a much more reliable online examination system that reduces malpractice and thereby improves the quality of education. Many governments and competitive exams such as SSC, CGL, CHSL, have started to follow online mode for conducting tests. In the current scenario, the online examination system is developing with leaps and bounds. The examination managing agencies have started preferring computer-based tests over the offline test to instill their lost faith in the method of conducting an evaluation. So our project will be the next step in the conduction of examinations or tests in the future.

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