# iStudent Management System – "Isms"

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**Abstract—** *The impact of computers on our lives today it's probably much more than we are actually known to getting good information and transforming it quickly into products that consumers want to buy essential key to staying in business and this is all done nowadays using computers and application software Since most of the academic institutions face difficulty in managing records of student's attendance, exam marks and their other personal details as they still have to rely on the traditional record maintenance methods by manually writing and keeping records as hard copies. An online personalized website for managing the student records and everything else will reduce the manual work by deploying centralized software incorporated with various loosely coupled services which interact with each other to address the abovementioned issues and improve the communication between management and the student or the guardian through notification via email SMS and push messages as it is a server-side application it is designed to support the text of browser and mobile browser.*

**Keywords: Student management system, online face recognition attendance system, Proctored Exam System, Online Classroom.**

## I. INTRODUCTION

Attendance is a crucial a part of daily classroom evaluation. Face recognition-based attendance system may be a process of recognizing face for taking attendance by using face recognition technology.

As all the lectures are online nowadays, attendance is also taken online thus that leads to various proxies in the attendance, our facial attendance system will help in reducing those proxies and also the workload of teacher of manually taking the attendance.

Moreover, we will also be adding an Exam Giving platform in the portal that will continuously monitor the student via Webcam and Microphone installed on the system.

There would be many more features build in our portal.

## II. EXISTING SYSTEM

Some of the existing methodologies for the student management system are described as below, In India there are many academic institutions. But only a few institutions are modernized and use software to manage their day-to-day work. In a city like Bengaluru there are around 1000 schools, quite 300 pre-university colleges and degree colleges. Most of those academic institutions still relay on traditional way of management which mainly involves paper-work, much of human effort.

The students, who are admitted to those institutions which are hooked in to traditional way of managing things. have to struggle tons just to urge a certificate or the other documents. Also, the administrations face difficulty in maintaining all the records, tracking the records and fetching the record of their interest in time. The administrations of these institutions even have to use variety of employees just to take care of the records required to manage and support their daily work.

## III. PROPOSED SYSTEM

Now a days for online teaching, managing attendance and online exam form generation, teachers have to use various different applications and again use another application to inform students about the same. These records might have a possibility of getting misplaced or causing redundancy of work and data. During the examination time, when the student starts the exams, the lecture goes to the students one by one to check his information in id card and his signature which causes confusion, tension, delay in answering question and anxiety of the scholar . We are providing a solution, that will make use of only one Web Application to get all of the above-mentioned work done. Thus, minimizing the hassle of teachers to use different applications for different uses. The interconnectivity among modules reduces the time to perform different operational task. This software manages the knowledge about various users including faculties, information about subjects offered in various semesters; marks obtained by Students in several semesters. The objective of our system

is to reduce hassle of using various different application for different uses and to save significant staff time. IStudent management system tends to solve the attendance problem online quiz assignment online proctored exam and many more such things.

These days there are different methods used for the attendance system applications that are utilized in schools and better institutions. Among the methods used the traditional way of using paper and pen that looks nonproductive and which takes the time of the lecturer and the time of the student specially during the examination. This project will handle whole the activities of the school. SMS has most of the facilities that a contemporary school requires to computerize its day-to-day jobs. It provides facilities to stay the records of student, fees, teaching and non-teaching staff with all their required details along side all required transaction handling. It has facilities to get various sorts of reports, which are required by the management during normal business operations to work the business effectively.

Our iSMS System will include features:

1. Facial Attendance
2. Task Reminder for Students.
3. Exam Form generator.
4. Online Exam system. (Proctored System)
5. View College Schedules (Class Timetable, Exam timetable etc.)

There are three main entities involved in this Student Management Portal (ISMS):

1. Student User
2. Teacher User
3. Admin User
This represents the set of students or users, which are the clients Who will be using this application? The students are for Whom the system is being designed.

## IV. TIMETABLE MODULE

This module provides the functionality for student to view their Class Timetable and join directly the Online lecture on Zoom/ Google Meet/ Microsoft teams by clicking on the link provided in the timetable.

## V. PROFILE MANAGEMENT MODULE

This module is made for the students where, they will be able to update their profile.

- Update the profile.
- Add the Resume on the Web Application.
- View Branch of Student, Studying Year, Semester details.
- Fee Payment Details i.e., whether the fee is due or not. If due a Direct Payment link will be displayed to Pay the required fees.

## VI. CLASSROOM MODULE

This module provides functionality to the student to get all the necessary academic related updates and also to submit their assignments.

-Students will be joined in the classroom of the specific subjects for the specific year and semester automatically. Also, as the student moves a class higher the subjects will be automatically changed as well. No Specific Code will be required to join the classroom.
- Students can view any Announcement made by the teacher in the classroom itself.
- Students can view and download the notes uploaded by the teacher whenever required.
- Students will be assigned to do the assignments from the classroom and will be required to submit them in PDF or word format in the classroom itself.

This module's major functions will be controlled by the teacher entity.
- Teacher will have the access to add or delete any new notes in the classroom.
- The teacher can also make an announcement in the classroom the students will directly be notified via email.
- The teacher will generate an exam from the web app and will enable it in the classroom for the students to attempt that exam.
- Teacher can assign various assignments to the students and there will an upload button for students to upload the assignment so that the teacher can review the assignment and grade the student on the Web App itself.

## VII. ATTENDANCE MODULE

This module is the most important and main part of our system. It is because of this Unique facial attendance system; our system is unique to any other traditional student management system.

Having this type of feature in the systems has a lot of advantages like

1. It is Cost Effective
**2.** It is a Touchless Attendance System: A Post Pandemic Requirement
3. It is more accurate and works better than any traditional attendance systems.
4. The ubiquity of camera on mobile/laptop devices implies that there is no special hardware requirement for this system.
5. It is easy to manage.

These systems make students attendance tracking accurate while saving costs. Such a system also adds a layer of security in the organization. Facial recognition attendance systems are the best modern-day solution for tracking student lecture attendance.

Use case for students:

- Students/user can mark the attendance using their face for any specific subject from the portal whenever the attendance marker is enabled by that specific subject teacher.

Apart from this student can also review their previous attendance. Which will help them to maintain the minimum requirement of 75% attendance stated by organization.

The Teacher for that specific subject can also view the attendance record, can also edit the record if required and directly export that record in Excel form or even print the record from the Web App itself.

## VIII. PROCTORED EXAM MODULE

This module is also an integral part of our project. In this module the student will be continuously monitored via webcam by the AI software for any movements in the various points set by the software. Those points are his eyes, lips, face direction. Any Sudden face movement or even a lip movement will immediately indicate the specified proctored of the exam and then that proctored can take necessary actions.

- The Teacher will generate the exam from the system in any form whether it be an MCQ exam or a Long/Short answer Exam. After the generation the teacher will make the exam online and immediately for the branch and year

students, that exam was generated will receive a notification in the classroom module of the system and can appear for the exam.

- Once the Student then clicks on to give the exam, the Attendance of the student will be taken by the Attendance module of the system and student will be asked to grant access for the Camera and Mic in order for the Proctored module to work.

## IX. PAYMENT SYSTEM MODULE

This module will be used by students to pay their college Fees directly from this system.

1. Here the traditional payment gateways will be used
2. Click on payment button
3. Enter the details
4. Allow the transaction
5. Transaction would be completed

## X. ACCOUNT MANAGEMENT MODULE

This module will be solely managed by the admin of the system.

1. Create account
2. Log in/log out
3. Reset the password
4. Verification of email account
5. OTP system for the Resetting the password

## XI. IMPLEMENTATION

Hardware/Software Interface: This area shows the minimum hardware and software requirements needed to run the system efficiently.

### A. Hardware Interface –

• GPU: Nvidia GeForce MX270 with 2GB GDDR5 graphics memory
• HDD: 128GB or above
• RAM: 4GB or above
• CPU: Intel Core i3 8th gen or above
• Web Cam (min 720p resolution)
• Microphone

**B. Software Interface -** CSS, Bootstrap, Php, JavaScript - Ajax (For Filtration)

C. PHPMAILER-Many PHP developers utilize email in their code. Formatting email correctly is surprisingly difficult. The PHP mail() function usually sends via a neighborhood mail server, typically fronted by a send mail binary on Linux, BSD and OS X platforms, however, Windows usually doesn't include an area mail server; PHPMailer integrated SMTP implementation allows email sending on Windows platforms without an area mail server

D. Database - SQL is used as the database. Easy to use and work with along the sql the Php 7.0 is employed to retrieve or set the info . The Php 7.0 has the myqli_query () .it is pretty convenient to use the sql with the MySQLI rather than using myqli_query in otp.

## XII. METHODOLOGY

A Convolutional Neural Network (ConvNet/CNN) may be a Deep Learning algorithm which may absorb an input image, assign importance (learnable weights and biases) to varied aspects/objects within the image and be able to differentiate one from the other. The pre-processing required during a ConvNet is far lower as compared to other classification algorithms. While in primitive methods filters are hand-engineered, with enough training, ConvNets have the facility to seek out out these filters/characteristics.

The architecture of a ConvNet is analogous thereto of the connectivity pattern of Neurons within the Human Brain and was inspired by the organization of the visual area . Individual neurons answer stimuli only during a restricted region of the field of vision referred to as the Receptive Field. A collection of such fields overlaps to hide the whole visual cortex .

## XIII. WORKING

Model training –
Gathering required data (Faces Stored in Dataset for recognition and Attendance Marking)
Labeling and tagging all the student images
Building a dataset of student images for model training
Deploying the model in the system –
Creating a user-friendly interface for the students to register their faces, view classroom-related notes, assignments, etc., submit the assignments, give online exams and to give attendance
Creating a user-friendly interface for the teachers to upload classroom-related notes, assignments etc., check

the submitted assignments, monitor student attendance and marks records. and to generate online exam papers. Creating an interface for the admin to monitor the student's & teachers' personal details, and documents, and to provide any notices, etc.
Usage and maintenance –

Step 1: Start
Step 2: Train and encode the faces present in the Dataset using the ConvNet Algorithm.
Step 3: Load the Face Recognizer method.
◦ Step 3.1: Live image is captured.
◦ Step 3.2: The Number of Faces is detected.
◦ Step 3.3: Each face is then encoded using ConvNet and compared with the encoded faces present in the Dataset.
Step 4: Then the Attendance is marked for the matched Faces.
Step 5: Stop

## XIV. Market Potential & Competitive Advantage: -

Since no other website of this sort is out there in India then such an internet site with numerous features will surely create a market boom. This web being very user friendly it is often employed by anybody and anywhere provided there's an online Connection. As time passes the and this website grows, we have plans to launch this website on an international basis.

Since this web app is first of its kind so there are no such greater competition present in the market.

## XV. CONCLUSION

We have Proposed a solution that will reduce the hassle of the teacher of using various different applications for different uses, instead only one web application will be developed and made use by the teacher and students for their work.
This system shows the use of facial recognition techniques for the purpose of student attendance, proctored exam and for the further process this record of student can be used in exam related issues.

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