A Mini Project Synopsis on

eSchool: Learning Management System

S.E. – Computer Science and Engineering-Data Science

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CERTIFICATE

This to certify that the Mini Project report on eSchool has been submitted by **Aman Dhumal (21107036)**, **Pranjal Desai (21107062), Dhanashree Kasar (21107037)** and **Om Jondhale (21107037)** who are a Bonafede students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfillment of the requirement for the degree in **Computer Science and Engineering(Data Science)**, during the academic year **2022-2023** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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CHAPTER 1

1. INTRODUCTION:

eSchool is an application software created using python with custom tkinter and mySQL as backend, this application implements and gives users access to use various tools provided in the application.

Typically, our application provides an instructor with a way to create and deliver content, monitor student participation and access student performance.

eSchool will also provide students the ability to use interactive features such as threaded discussion, video lectures, doubt solving.

1.1 Purpose

The purpose of this application is to create a system for study management. The system will allow various actions needed in order to manage the study in a simple and comfortable way . The actions will include addition/removal of student information, addition/removal of teachers information and much more. The system in parallel to the user actions keeps a basic security level which prevents access or modification of data by users which do not possess the proper permissions.

1.2 Objectives

The main objective of this project is to computerize the manual system and reduce the time consumption.

- Creating an easily understandable but modern GUI.
- Creating a database where admin and staff can store students information.
- Adding a Leave function where staff can apply for leave which will be accepted or canceled by the admin .

1.4 Scope

The application will be useful in many fields related to teaching. Students can use this application to manage their studies, teachers can also use this application so they can manage students easily. Teachers will also be able to use the video call feature to solve students' doubts at any time. an admin like principle can also keep track of teachers and students attendance. Collages, Universities, Schools will also benefit with this application . One can also use this application to manage its private coaching classes .

CHAPTER 2

2. PROBLEM DEFINITION:

eSchool is an innovative system that was designed with the needs of today's students and educators in mind. One of its key features is the ability to generate insightful and detailed reports on student performance. These reports are customizable and allow educators to quickly identify areas where students may be struggling or excelling. This information can then be used to create tailored learning plans that help students achieve their full potential.

Another key feature of eSchool is its real-time chat functionality. This feature allows students and staff to communicate instantly and efficiently, which can be particularly helpful in situations where time is of the essence. Whether a student needs clarification on a topic or a teacher needs to communicate an important update, eSchool's chat feature makes it quick and easy to get in touch with the right person.

eSchool's student data management system is built on a foundation of strong security measures. All student data is encrypted and secured behind a robust login system that ensures only authorized users can access sensitive information. This makes eSchool an ideal choice for schools and other educational institutions that prioritize data security.

Finally, eSchool's user-friendly interface and intuitive design make it easy to use for students, teachers, and administrators alike. Its clean layout and clear navigation help ensure that even those who are not particularly tech-savvy can navigate the system with ease. This makes it a valuable tool for educational institutions of all sizes and types, whether they are small schools or large universities.

In conclusion, eSchool is an all-in-one solution for managing student data that offers many valuable features, including real-time chat, detailed reporting, and strong security measures. Its modern GUI and user-friendly design make it a valuable resource for educational institutions of all types, while its scalability and customization options make it a flexible solution that can grow and adapt to meet the changing needs of any institution.

CHAPTER 3

3. PROPOSED SYSTEM:

Our new Python-based system is a game-changer in the field of student data management. It has been developed with the intention of easing the process of accessing and utilizing academic information. Keeping the user at the forefront of its design, the system offers a wide range of features that are tailor-made to make managing academic data a breeze.

The most significant benefit of our system is its ability to provide students with a hassle-free and straightforward approach to viewing their academic details, including results and attendance records. The data is presented in a lucid and easily comprehensible format, making it convenient for students to access the information they require to excel in their academic pursuits. Furthermore, our system has text chat features that enable users to get real-time answers to their queries.

In addition to this, our system boasts an innovative attendance management feature. We have added a leave function that enables users to manage the attendance of others, thus making it more convenient for teachers and administrators to track student attendance.

Security is a top priority for our system, and we have designed it accordingly. Our login screen has different user IDs for admin, students, and staff. The admin has the power to handle most of the functions in the application, while students and staff are prohibited from modifying data they are not authorized to access. This ensures that our system remains trustworthy, time-saving, and secure.

All things considered, our new Python-based system is an exceptional tool that simplifies the process of managing student data. With its intuitive interface and groundbreaking features, it is a valuable resource for students, teachers, and administrators alike. Whether you're looking to access academic information or manage attendance records, our system is the perfect solution for all your academic data management needs.

3.1 FEATURES AND FUNCTIONALITY:

1. Academic data management: Our system allows students, teachers, and administrators to easily manage academic data such as grades, attendance records, and course schedules.
2. Simple and user-friendly interface: The system features a modern and intuitive interface that makes it easy for users to navigate and access the information they need.
3. Real-time text chat: Our system offers real-time text chat functionality that allows students to ask questions and get them answered by teachers or other staff members.
4. Attendance management: Our system offers a leave function that allows users to manage the attendance records of students, making it easier for teachers and administrators to keep track of attendance.
5. Secure login: The system features a login screen with different user IDs for admin, students, and staff, ensuring that only authorized users have access to sensitive data.
6. Mobile-friendly: Our system is mobile-friendly, making it easy for users to access academic data and communicate with teachers and staff members from anywhere, at any time.
7. Easy data entry: Our system features a user-friendly GUI that makes it easy for users to enter and update data directly into the system, reducing the risk of errors and improving data accuracy.
8. Video call:Our system provides video call feature for the users. Faculty can use it for doubt solving of students and also sometimes conducting extra online lectures on weekends.

CHAPTER 4

4. PROJECT OUTCOME:

Our Python-based application is the outcome of a project that aims to create a comprehensive and efficient system for managing academic data. It is built with custom tkinter, and its modern and user-friendly interface makes it easy to use, while its robustness guarantees its reliability.

Our system simplifies the process of accessing and managing academic data through the implementation of various features. One such feature is the real-time chat, which enables students to have their doubts clarified instantly. This feature allows for quick communication between students and teachers, which ultimately improves the quality of education. In addition, our system has CGPA and attendance records that provide a transparent and easy-to-understand overview of academic performance. This ensures that students can easily monitor their progress and identify areas that need improvement.

Moreover, our system features a leave request functionality that streamlines the process of managing attendance records, ultimately reducing the administrative workload. This feature ensures that students can conveniently request and receive approvals for leave, while the school's administration can keep track of attendance records and make necessary adjustments accordingly.

Our application is designed with accessibility and ease of use in mind. Its simple and straightforward interface allows for quick and easy data entry and updates, making it a valuable tool for both students and staff. The system's security is of utmost importance, and we have ensured that only authorized personnel have access to sensitive data. Different levels of access have been granted to admin, staff, and students, ensuring that the system remains secure at all times.

In conclusion, our project outcome is a valuable tool that improves communication, streamlines administrative processes, and provides a reliable and efficient solution for managing academic data.

CHAPTER 5

5. SOFTWARE REQUIREMENT:

1. MySQL: A relational database management system used to store and manage academic data, including CGPA, attendance, and leave requests.
2. Python: A high-level programming language used to build the application. It is versatile and commonly used in building GUI-based applications and provides a wide range of libraries and modules to support various functionalities.
3. Custom Tkinter: A library used to develop the graphical user interface for the application. It provides a variety of custom widgets and other GUI elements to make the interface more user-friendly.
4. Tkinter: A standard Python library used to create the GUI for the application. It provides a wide range of widgets and other elements to create the interface.
5. Socket: A Python module used to enable real-time chat functionality within the application, allowing students to get their doubts cleared instantly.
6. Threading: A Python module used to enable multi-threading within the application, allowing for better performance and scalability.

CHAPTER 6

6. PROJECT DESIGN:

1. User Interface: The graphical user interface (GUI) is developed using the Customtkinter and Tkinter libraries. The interface provides a simple and user-friendly layout for students, staff, and admin to access and manage academic data.
2. Database Management: The MySQL database is used to store academic data, including CGPA, attendance, and leave requests. The staff member is responsible for updating the data in the database, and the students can view their data through the GUI.
3. Real-time Chat: The Socket module is used to enable real-time chat functionality within the application. This allows students to ask questions and receive instant responses from staff members.
4. Multi-threading: The Threading module is used to enable multi-threading within the application. This allows for better performance and scalability, ensuring that the application runs smoothly and efficiently.
5. Security: The application includes security features to ensure that only authorized users have access to sensitive data. The system includes a login screen with different user IDs for admin, staff, and students, and users are only allowed to view and modify data that they are authorized to access.
6. Leave Management: The staff member is able to manage leave requests from students through the GUI. The admin is responsible for accepting or rejecting the leave requests.

Overall, the project design is focused on delivering a user-friendly and reliable application that simplifies the management of academic data while providing real-time chat functionality and ensuring the security and privacy of sensitive data.

CHAPTER 7

7. PROJECT SCHEDULING:

CHAPTER 8

8. Conclusion:

The development of the Python application for managing academic data is a significant achievement in the field of education technology. It is a well-designed and efficient system that simplifies the management of student data and enables effective communication between students and staff. The graphical user interface (GUI) is intuitive and user-friendly, making it easy for all users to navigate and perform the necessary tasks.

The real-time chat functionality is a unique feature that enhances communication and collaboration, as students and staff can quickly exchange messages and get their queries resolved in real-time. The chat feature also saves time and effort, as it eliminates the need for lengthy email chains or in-person meetings.

The system's security features are also noteworthy, as they ensure the confidentiality and privacy of sensitive student data. Access controls are in place to ensure that only authorized users have access to the data, and different levels of access are granted to admin, staff, and students. This ensures that only authorized individuals can view and modify the data, and unauthorized access attempts are prevented.

The multi-threading support is another excellent feature of the system, ensuring smooth and efficient performance, even when dealing with a large amount of data or simultaneous user requests. This ensures that the system remains responsive and functional, even during peak usage periods.

Overall, the Python application for managing academic data is an impressive achievement that offers a wide range of benefits to students and staff alike. It simplifies data management, enhances communication, and improves collaboration, making it an essential tool for modern-day education.