1 Literature Review

1.1 Review of Domain

In the ever-evolving world of educational technology, there are always new things to explore and discover. A Student Management System (SMS) is software that coordinates and organizes learner data of all ages through a centralized location accessible to all departments. This system allows tutors to address student requests. The student management system is designed to make tutors' lives better. It brings great value to the teacher's management and learning process and even helps increase the number of students per tutor. According to the report, the global SMS systems market size is valued at USD 7.41 billion in 2021 and is estimated to grow at a CAGR of 19.0% from 2022 to 2030. (leadschool11, 2023)

Before technology was applied to manage students, paper student management was a widely used method among many tutors. First, when the tutor wants to secure and protect personal information. When managing student information on paper, it is necessary to ensure that only those with specific authority, specifically tutors managing their students, can access and process the information. This ensures that students' personal information is not exposed or used improperly. The solution for tutors is to store student documents in safe places. A clear process should be maintained for checking and updating student information, while ensuring that only authorized persons have access to data. Second, data security and privacy are very important to every tutor. When managing student information on paper, tutors need to ensure compliance with data security and privacy regulations. Every tutor should not share with any third party. Security measures should be taken, and student documents protected from loss or unauthorized access. Although paper-based student management may be simple and easy to implement, it is still necessary to apply security measures and comply with legal regulations to ensure the safety and protection of students' personal information. .

When technology is applied to student management, the Excel method is a convenient and effective way to organize and store student information. When using Excel to manage students,

it may involve sharing student information with other partners, authorities, and teachers. Before sharing student information with any legal partners, explicit consent from the parent or guardian is required. It is advisable to keep copies of consent records and ensure that information is only disclosed for legal purposes and requirements. Next, tutors need to comply with regulations on online child protection: In using Excel to manage students, it is important to comply with regulations on online child protection. It is important to ensure that no sensitive or personal student information is exposed. Security measures should be created to prevent unauthorized access and keep student data in a secure environment. Instructions should be provided to staff about keeping student information private and not sharing it with any third parties without consent.

The trend has shifted from in-person platforms to online cloud-based systems that provide a complete set of tools to test the performance of every student. The software will empower the complete administrative and academic management of the school with a futuristic approach. Student management software is designed to organize and centralize student-related information, making it easily accessible to administrators and tutors Student management software provides individuals with ID and password password. Using that ID, they can easily track assignments, tuition status, grades, test results and parent information within seconds. (leadschool11, 2023)

Student management using an app is a modern and convenient way to organize and store information about students. First Student personal information: Using the app, you can store student personal information such as name, date of birth, address, phone number, and information about parents or guardians. Ensure that personal information is stored safely and securely. Apply security measures such as data encryption, user authentication, and access controls to prevent unauthorized access to student information. Second Timetable and scores: Using the app, you can create a timetable for each student, manage tests and record student scores. Create an easy-to-use interface to manage and update student schedules and grades. When developing applications, ensure that data is stored securely and editing is done only by

authorized people. Third, Communication and notifications: With the app, you can send notifications and messages to parents or guardians about class schedules, important events, or students' personal information. Ensure that notifications are delivered effectively and securely. Control access to in-app notifications and messages to ensure privacy and data protection compliance. Finally, event and activity management: The app can also help you manage student activities, events, and schedules. Create an easy-to-use interface to record and update event and activity information. Ensure that information about events and activities is only accessible to authorized people. Managing students with an app offers many significant benefits, such as convenience, ease of use, and can improve communication between teachers, parents, and students.

1.2   Review of Technologies

- Review related technologies
- Compare, pros / cons

1.3   Review of Methodologies

- Review related methodologies
- Compare, pros / cons

1.4   Choosing solutions

- Discussion of your chosen technologies / methodologies

2   References

leadschool11, 2023. *Student Management System - Key Features & Benefits.* [Online]
Available at: https://issuu.com/leadschool11/docs/student_management_system_-_key_features_benefit
[Accessed 14 10 2023].