

## STUDENT MANAGEMENT SYSTEM

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### ABSTRACT

In today's world the management system is very important and essential for every system. This **management** system is an application-based system, having two applications developed, one for teachers to manage teacher details and another for students to mark their details. Every organization whether government or private uses an information system to store data of their staff. However, in India it is found that many small-scale industries or colleges use pen and paper to keep a record. However, there are many advanced technology systems available that can do this work but they all are costly for these low-level industries. This project is useful for easy user interface. The system uses the powerful database management system, data retrieval and data manipulation. This project provides more ease for managing the data than manually maintaining the data. Hence it saves the lot of time of ours also. So we can say that the **project** is useful for saving valuable time and reducing huge paper work.

### INTRODUCTION

The student management system is an environment where all the process of the student in the institution is managed. It is done through the automated computerized method. Conventionally this system is done using papers, files and binders. This system saves the time of the student and of the administrator. It includes process like registration of student details like roll no, name, marks etc. This system reduces the cost and workforce required for this job. As the system is online the information is globally present to everyone.

This makes the system easy to handle and feasible for finding the omission with updating at the same time. As for the existing system, they use to maintain their record manually which makes it vulnerable to security. If filed a query to search or update in a manual system, it will take a lot of time to process the query and make a report which is a tedious job.

As the number of student increases in the institute manually managing the strength becomes a hectic job for the administrator. This computerized system stores all the data in the database which makes it easy to fetch and update whenever needed.

With the development of technology, the rise of digitization and the rise of sort social networks, the sharing of information online kind of basically has generally literally become very pretty quiet in a fairly major way in a sort of big way. As a result, the definitely really entire online system really kind of has mostly definitely become very popular over the basically for all intents and purposes past years in a sort of generally big way, which literally is fairly significant.

During each step, technology programs and tools attempt to assist the research process and prove that although technology increases the quantity of skills and literacy needed to complete research, it also increases the efficient of each step and effectiveness of the finished product. Today, the innovations and improvements of technology have produced several assistances that are very much useful and convenient to the research and development departments.

These assistance may be in the forms of programs and softwares that are largely applied and used in researches. Know that in every research made, there are data and information being gathered to be analyzed and scrutinized efficiently

## 2. LITERATURE SURVEY AND RELATED WORK

There are numerous educational institutions in India. However, relatively few institutions are updated and employ software to handle their day-to-day operations. There are over 1000 schools in Bengaluru, as well as more than 300 pre-university colleges and degree colleges. Most of these academic institutions still rely on traditional management methods, which mostly involve paper work and a great deal of human labour, resulting in a great deal of stress and frantic work.

Students admitted to universities that rely on traditional methods of management face significant challenges in obtaining a certificate or other papers. Additionally, administrations have trouble storing all information, tracking records, and retrieving records of their interest in a timely manner. The administrations of those institutions must also hire a large number of people only to keep track of the documents needed to oversee and support their everyday operations.

Some universities, such as PESIT and Christ University in Bengaluru, have developed their own web application to address the aforementioned difficulties.

Login/Sign Up, Dashboard, Viewing of results, attendance, courses, time table, assignments and students progress, upload/download documents, and notifications are just some of the features and functionalities of the web application utilized by these and many other institutions.

This primarily focuses on offering a simple interface for the easy collection and maintenance of all types of student data. The creation and management of reliable, up-to-date information about students' academic careers is crucial for students, faculty, and administration at Sebha University in Libya, as well as any other educational institution. From enrolment until graduation, a student information system deals with a variety of data, including programme of study, attendance record, fee payment, and examination results, to name a few..All of this information must be accessible via an internet interface.

On delivering data to help businesses and organisations with their operations, management, and decision-making. To improve the effectiveness of student management, it is necessary to have a student information management system in the face of a massive volume of data.

Standardized management, scientific statistics, and quick queries of student information can all be accomplished with this system, reducing management workload. A typical student information management system will be developed in this study in order to achieve the systematisation, standardisation, and automation of student information relationships.

It is critical to keep track of teachers' progress and evaluate their efficacy. Students' feedback can be used to evaluate a teacher's performance. Students can increase their learning skills, achievement, and success by using an automated evaluation procedure.

Because of a communication gap between students and teachers, student discipline problems are on the rise. There is a need for a platform that allows students, administrators, staff, and teachers to communicate seamlessly. Through notifications, email, SMS, and push messaging, the web-based management system improves communication

### 3 Proposed system:

Micro-service architecture is being used to design and deploy the application. Spring-boot, an opinionated instance of spring application and a rapid application development platform, is used to build the micro-service architecture. Gathering requirements, design, development and implementations, testing, and maintenance are the five stages of the suggested technique.

#### Gathering requirements

Before beginning any project, the needs must be gathered and the viability checked. If the requirements are doable, the project can be continued. Stakeholders gather all of the requirements needed to build and implement the project during this phase, which are then communicated to the project's developer and designer. The requirements for this project, which will culminate in a web application, are divided into six categories: Student Management Service, Course Management Service, Attendance Management Service, Administration Management Service, Document Management Service, and an Employee Management Service.

- 1) **Student Management Service-:** The student can use this service to check their attendance, progress report, and results, as well as send requests for any required documents, view notifications, examine timetables, and view and submit assignments. Students have the opportunity to provide comments on the teacher's performance in class.
- 2) **Course Management Service -:** The administrator will be able to add, amend, and delete courses using this service. The administrator will also be able to add, alter, and delete the course's subjects. Only the administrator's courses are visible to the teacher, guardian, and students.
- 3) **Attendance Management Service -:** Using this service, administrators will be able to submit, edit, and delete student attendance based on the course and class they are enrolled in. The attendance is only visible to the teacher, guardian, and pupils.
- 4) **Administration Management Service -:** The administrator will have full access to all resources in this service. The administrator can send out notifications by email,

SMS, and push notifications. The administrator has the ability to add, update, and delete student, guardian, and employee information.

**Document Management Service-:** The administrator can use this service to upload documents such as students' grades, ID proofs, subject syllabuses, payment receipts, certificates, and a variety of other papers that are necessary for the proper operation of the institution's academic and financial activities.

### 4 METHODOLOGIES

This method is chosen because it is the most suitable method to be applied in this project development. The reasons or justifications for choosing the agile model (scrum) are it allows stakeholders to get involved more compared to other models. It promotes interaction between clients from system and developer.

By involving clients from system in every phase of development, it improves the developer's understanding of the client's requirements. Student Management System for a school is an unfamiliar system compared to other Student Management System. Thus, communication among stakeholders is important for this project. Next, it allows changes throughout the period of development. It provides flexibility to both parties, the clients from system and the developer thus improve the client's satisfaction. It also can handle uncertainties in requirements very well. It can adopt new or changing requirements and can be fixed throughout the period as clients from system are still uncertain about what they need and want from the system.

It also makes the process of system development more practical and effective as it allows continuous delivery or release of useful software. It improves the quality of the system as in every iteration, all phases are conducted thus defects can be found and fixed quickly. Not only that, works are prioritized based on user stories, thus important functionalities or needs of the system will be developed first based on user requirements. By using this methodology, it is easier to track progress of the project to ensure that the project is delivered according to the planned schedules.

- To sum up, all requirements of the project are almost impossible to be identified correctly before other phases such as design and implementation happen. However, traditional methodology such as waterfall methodology assumes that such thing is possible. Thus, by adopting agile methodology in this project, changes can be made prior to clients' requirements and clients feedbacks that are received at every sprint or increment of the project.

The student information management system's design includes the creation of a home page that allows all students, staff, and other users to access the system. Every system user has their own username and password. The login form on the home page allows a new user to register, or a current user to login to the system by entering their username and password.

**Student-:** Because every college student plays such an essential role, the student is the centre of attention. Students can access college information, course details, subject details, faculty details, training and placement cell information, and exam section information, where course details include information about the branch of study, the college's academic calendar, year-by-year subject offerings by the branch, subject details include the syllabus of the subjects, information about the staff handling the subjects, and the subjects in which he is currently enrolled. The information about the companies, as well as the eligibility criteria for attending recruitment, are included in the placement specifics.

**Faculty-:** Each instructor gets a single file where they can keep track of their schedules, students, and classroom information.

Administrators may access up-to-date information about teachers and their classrooms at any time thanks to that single database file. Teachers can fill out classroom reports and forms faster utilising the interactive teacher database because it has all of the necessary information.

The form is automatically filled out with the teacher's name and classroom information. Teachers need to do nothing more than fill in the blanks and click submit. OK. Reports and forms are saved to the teacher's file automatically. They can also look at the student's information to get a better idea of the student's performance, as well as increasing the student's efficiency. The personnel is also kept up to speed by the college on any issues that arise.

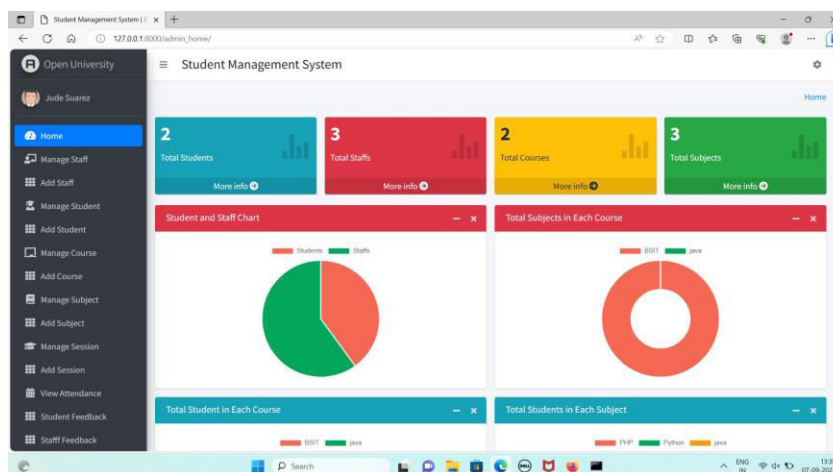
**Exam section-:** The examination section is in charge of keeping the internal and external examination schedules up to date. They also allot time slots for updating the faculty's supervision list by creating an unbiased schedule to evenly distribute the duties, and they

provide job benefits if faculty oversees supplementary and classroom allocation for students in the examination.

The exam department is in charge of marksheet verification and internal mark approval.

- **Administrator:-** The administrator is in charge of enrolling new students and promoting them from one class to the next, from one semester to the next, and from one year to the next. Managing student accounts, such as any name, address, or other changes. The administrator is also in charge of dealing with defective accounts, such as adding new professors and allocating them to subjects. The administrator also keeps track of college- related information such as the schedule of events and information about any other events that take place on campus. The administrator will review all of the revisions, including student, faculty, and exam information. In the student information system, the administrator has the most power.

## 5 RESULTS AND DISCUSSION



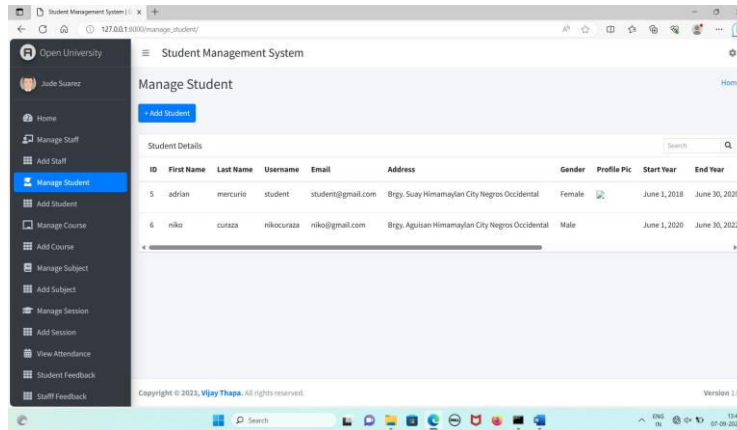
### 5.2.3 MANAGE STAFF

The screenshot shows the 'Manage Staff' page. It includes a '+ Add Staff' button and a search bar. Below is a table with staff details:

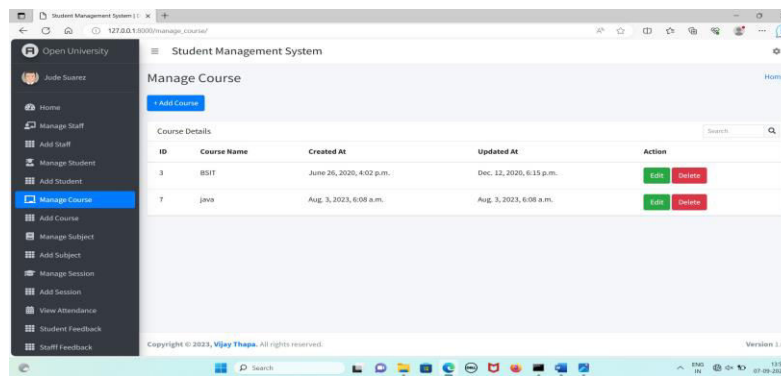
ID	First Name	Last Name	Username	Email	Address	Last Login	Date Joined	Action
19	sai	sai	sai	sai@gmail.com	bhimavaram	Aug. 2, 2023, 12:44 p.m.	Dec. 12, 2020, 6:11 p.m.	Edit Delete
21	dinesh	kumar	dinesh	dinesh@gmail.com	vskp	Aug. 3, 2023, 5:45 a.m.	Aug. 3, 2023, 4:50 a.m.	Edit Delete
22	jyothi	durga	jyothi	jyothi@gmail.com	kid city	Aug. 3, 2023, 5:41 a.m.	Aug. 3, 2023, 5:23 a.m.	Edit Delete

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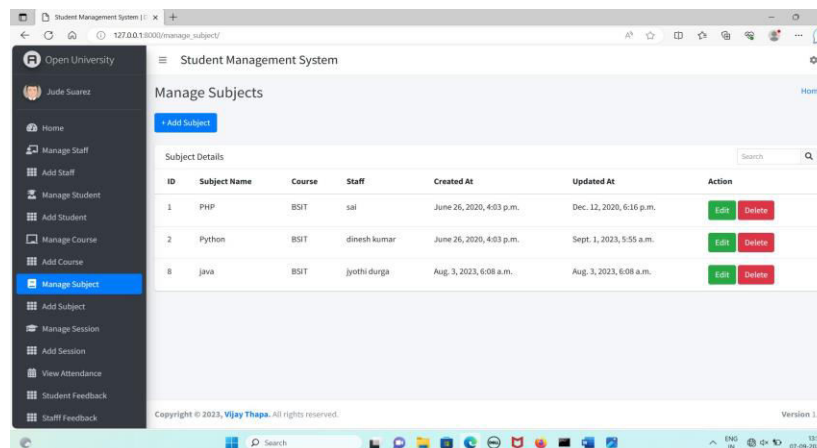
### 5.2.4 MANAGE STUDENT



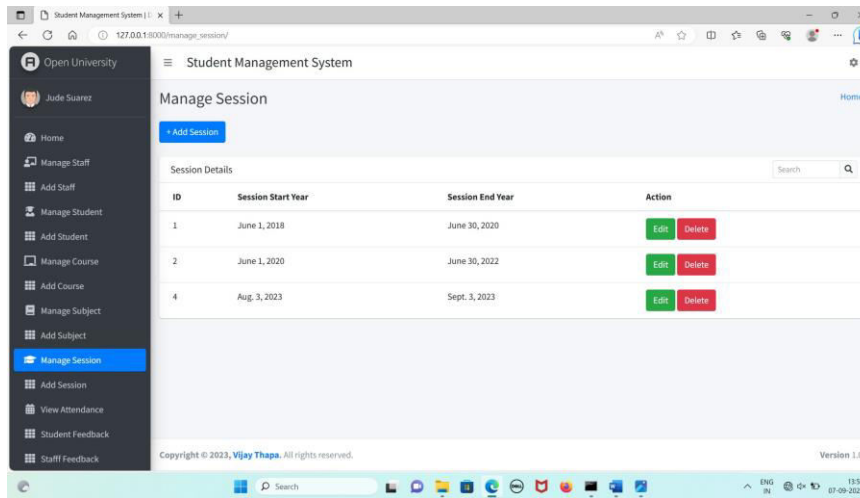
### 5.2.5 MANAGE COURSE



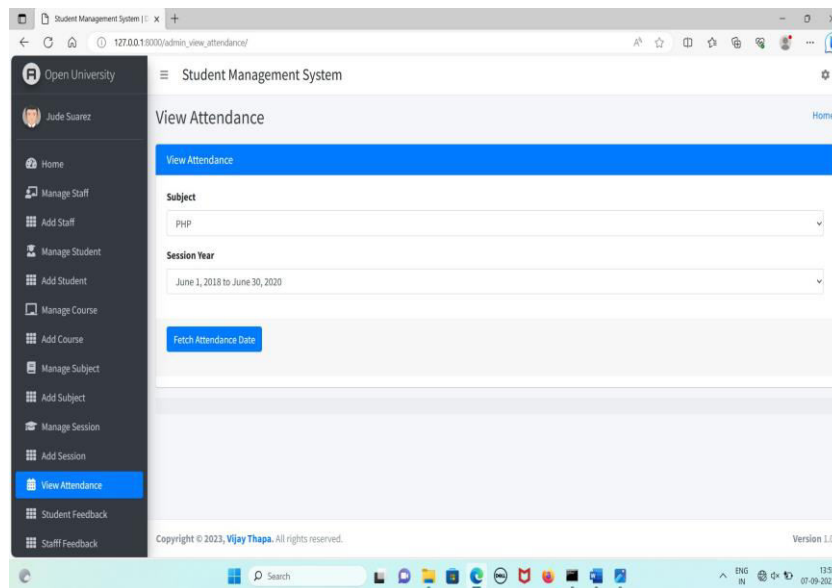
### 5.2.6 MANAGE SUBJECT



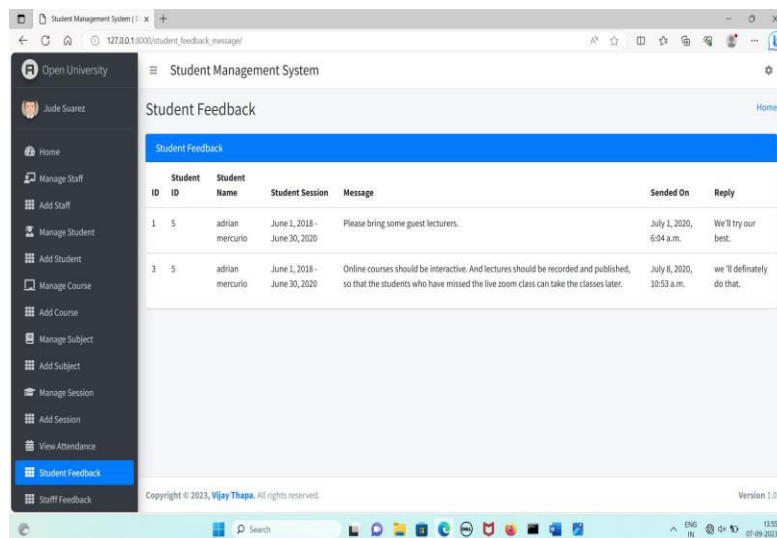
### 5.2.7 MANAGE SESSION



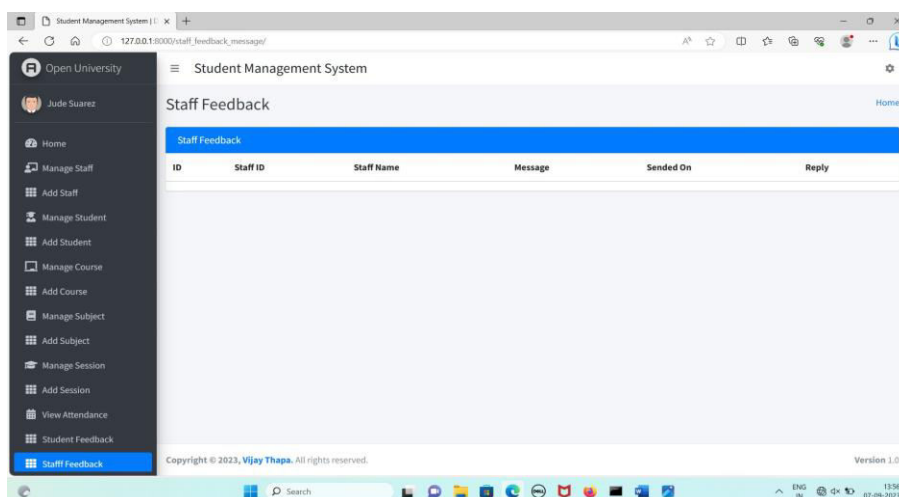
### 5.2.8 VIEW ATTENDENCE



### 5.2.9 STUDENT FEEDBACK



### 5.2.10 STAFF FEEDBACK



## 6. CONCLUSION AND FUTURE SCOPE

It's usually a good idea to go with a student information system that's built on a current system architecture to keep up with changing needs. This system should include well-organized data coding and clearly defined business applications.

The system's overview elucidates the convenience of exact data delivery at the tip of your fingertips, increasing student retention and teaching them how to manage their time effectively.

The proposed method is efficient and user-friendly, based on the results of the experiments and tests. In comparison to current methods of managing academic institutions, this project, which produces centralised software, makes work administration and management easier and gives full information about the issue of users' interest with just one mouse click. An easy-to-use user interface centralised software can be offered to the educational institution, allowing all services



linked with the university to interact with one another and share data. The user will be able to access the resources from afar because this is a ReST API . Because the application is built with a microservice architecture and agile methodology, services can be added in the future.

## 7 REFERENCES

- [1] Christ University <https://christuniversity.in/StudentLogin.html>
- [2] PESIT University <https://pesuacademy.com/Academy>
- [3] Application development using <https://angular.io/docs>
- [4] Error handling using <https://stackoverflow.com/>
- [5] For testing API <https://www.postman.com/>