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Student Management System

Radhika Bhanushali[1], Chaitanya Agarwal[2], Tejas Dongare[3], Dr. Sanjay Sharma[4]
[1, 2, 3, 4]*Department of Computer EngineeringNew Horizon Institute of Technology and Management Thane, India*

Abstract: ***Our college stores the student's data digitally to be maintained and accessed easily. However, the data stored is scattered, and it is in different formats. It has become a hassle to maintain it with an increase in the number of students. This situation also leads to data not being manipulated in various cases, where students need to refill the same information repeatedly, making the data redundant and inconsistent. We aim to build a web application that will act as an integrated platform where all data provided by the students will be collected in a single place and can be categorized to show them to the various types of users on their need-to-know basis. The application allows students to update any information easily while helping college staff retrieve selected student information easily. The web application will help in the online admission of students with the option of online payment through a payment gateway. It will record the marks of every student for their respective subjects in their course and keep track of each student's attendance. It will also provide students with new placement opportunities provided by the college, helps to keep records of faculty and departments, and shows records of online transactions done to the college by the students during admission. The application development will be using HTML, CSS, and JavaScript in the front-end while using PHP and MySQL in the backend.***
Keywords: component, formatting, style, styling, insert (key words)

I. INTRODUCTION

Every college has its management system that needs to maintain certain records of its students. As college grows, the number of students also increases, and student-related content increases. With an enormous increase in data daily, it is expected to gather the student information management system to improve the efficiency and performance of management.[1]

The Internet has become a part of most people's day-to-day lives in the world. People perform various tasks on the Internet; one of them is storing their data in a database where they are interested. In these databases, they can post the queries and retrieve the required data. There is a need for Student Information System software to manage students' data that helps in providing the required data with time efficiency, make all these data accessible on the online interface [2].

There are many administration departments to supervise college information and student databases in any institution. All these departments provide various records concerning students. Most of these track records need to preserve information about the students. This data could be the general details like student name, address, performance, attendance, or specific information related to departments like data collection. All the modules in college administration are interdependent. They are maintained manually. So, they need to be automated and centralized as information from one module will be needed by other modules to share course content and track students' progress. [3]

II. PROBLEM STATEMNT

The current management of student details is being done by keeping a digital record in various places, such as excel sheets and Google drive. Thus college faces problems with interlinking and data repetition, delay in data availability, redundancy in data, and non-manipulation of data. Moreover, as the number of students keeps increasing, there will be a vast increase volume of data, which will cause many problems in maintaining, updating, and retrieving the selected information.

III. OBJECTIVE

A. To maintain all the essential data in one place.
B. Provide a facility for the teachers to know a student's attendance status in the college.
C. Provide automatic generation of IEN Number for the students after confirmation of admission.
D. Retrieve selected information about the students in excel format.
E. Automate generation of student fee receipt, mark sheet and college id card.
F. Provide seamless access of required data to respective college role heads.

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IV. METHODOLOGY

The waterfall model is a sequential design approach used in software development processes. Progress is depicted as flowing steadily downwards (like a waterfall) through the stages of Conception, Initiation, Analysis, Design, Construction, Testing, Production/Implementation, and Maintenance.

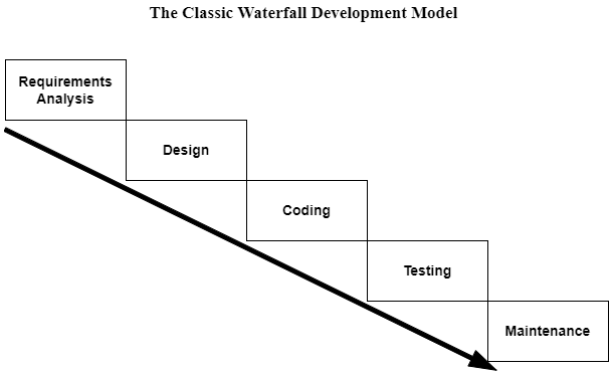


Fig. 1.Figure of waterfall model.

The waterfall development model initiates in the manufacturing and construction industries: highly structured physical environments in which after-the-fact changes are prohibitively expensive, if not impossible. Since no formal software development processes existed at the time, this hardware-oriented model was adapted for software development.
We use this model as we have well-known, clean, and fixed requirements; therefore, it is best suited for our software development. Our project definition is stable. This model is straightforward and painless to understand and use as in this model, phases are processed and completed one at a time, and the phases do not overlap. The waterfall model works well for development projects where a sequence is very well understood.

V. CATEGORY OF USER

A. Student

The students can fill admission form after receiving a link from the college. They have access to their personal profile, academic details, attendance record, exam records, placement details, and all the notifications of upcoming events. The students also view and download their fee receipt and timetable, and another essential facility provided for the students is to see the notification of/her respective departments.

B. Admin

Admin has all the access rights to the system. He has access to edit, create and delete departments and courses in the department. He also has complete student information, login reports, and placement data. He manages all faculty details like personal information and department and user role with respect to their department and their login report. Details of newly admitted students like fee payment and documents are also kept with the admin.

C. Admission Incharge

The admission incharge manages the data of new admission. When students get registered, admission in charge will verify the student data and will also be able to give remarks. The admission charge also keeps track of student payments details and finally admits the student.

D. Faculty

1) The placement head is responsible for updating the placement-related information like eligibility criteria for a particular company, company description, arrival date of the company which is coming for recruitment, the list of students who are eligible for the recruitment process, and the list of students who got placed in a company. He also can alert the students regarding any upcoming offers.
2) An accountant can directly view and manage all transactions made to the college during admission.
3) A teacher can view and manage all student academic details and results. They also have access to student attendance.

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VI. MODULES IMPLEMENTED

A. Admission

In this module, we collect essential data and documents from the student via an admission form, and this data is verified. It also manages the payment procedures and details of the process. And then, it generates a fee Receipt, virtual ID, and a Unique ID for every student. All this data is collected and organized in one place to retrieve complete information in one go.

Data Collection:

1) Personal Information (Name, Email, BloodGroup, Caste, IEN No, Phone No, Address)
2) Academic Details (10th, 12th, and Diploma Details)
3) Admission Details (Cap Id, Branch, Year of Admission, Academic Year)
4) Parent Details (Mother, Father, Guardian)
5) Account Details (Password)

B. Placement

The placement module manages all the Placement offers provided by the college by managing the placement-related information like company name, company description, last date to apply for the company which is coming for recruitment. It collects all internship and placement details from students and alumni.

Data Collection:

1) Company Detail (Company Name, Company Description, Company Contact)
2) Job Description (Role, Salary, Work Description, Technology Description)
3) Application Details (Link to Apply, Last Date to Apply, Joining Date, Leaving Date)

C. Exam

The examination module is responsible for collecting and managing all the scores of students' tests throughout the course. It also shows summarize data of each student regarding academic.

Data Collection:-

1) Student Subject Marks (Student, Subject, Marks)

D. Attendance

The attendance module allows faculty to record and manage the attendance of the students and provide a net analysis of his/her attendance.

Data Collection:-

1) Student Subject Attendance (Student, Subject, Attendance)

VII. TECHNOLOGY USED

A. HTML (Hyper Text Markup Language)

Html is the most basic language in any web-based application it will also be used in the user interface as to send data to the backend for storing data.

B. CSS (Cascading Style Sheet)

CSS is used to design the layout of Web pages. It will be used to provide decent design to our user-interface to make is presentable and intuitive for the users.

C. JQuery

jQuery is a fast, small, and feature-rich JavaScript library. It makes coding in JavaScript simplified. It will be used to handle the event and for the Ajax function, making our web page dynamic in nature.

D. Bootstrap

Bootstrap is an HTML, CSS & JS Library that focuses on simplifying the development of informative web pages. It will help ease the implementation of certain elements such as modals and make responsive web design.

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E. MySQL

MySQL is a freely available open-source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). It will be used to store and retrieve data provided by the user and manage relationships between them.

F. PHP

PHP is a general-purpose scripting language mainly used for web development. It will create an API that will act as a medium to communicate between the front and backend and make the website dynamic.

VIII. DFD DIAGRAM

A. DFD Level-0

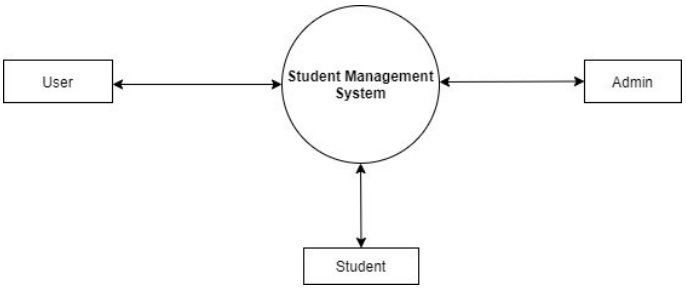


Fig. 2.Data Flow level-0

B. DFD Level-1

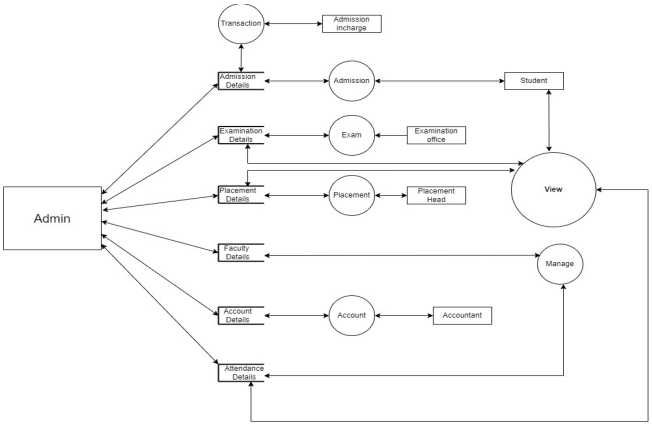


Fig. 3.Data Flow level-1 .

IX. RESULT

A. Admission Process

The system starts with the college entering an excel sheet containing the registered email id of the student that shall go for form submission.

Only the students in this table who have a registered email id can fill out the form.

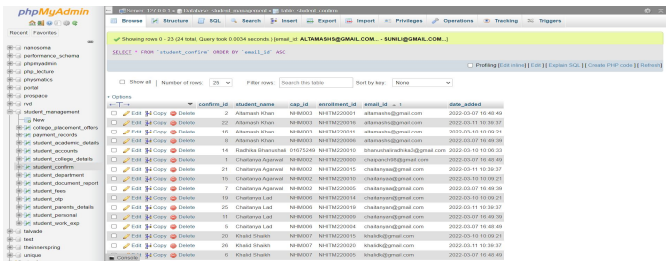


Fig. 4.Figure of Database of student with registered email id.

Here the student enters the cap ID and registration email id where the system sends an OTP.

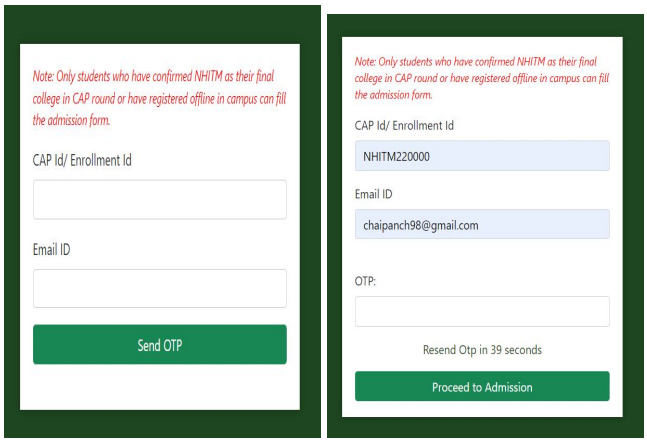


Fig. 5.Figure of registration page and OTP form.

When this OTP is entered, the registration form will open where the student has to enter all the essential details and documents for verification and submit it.

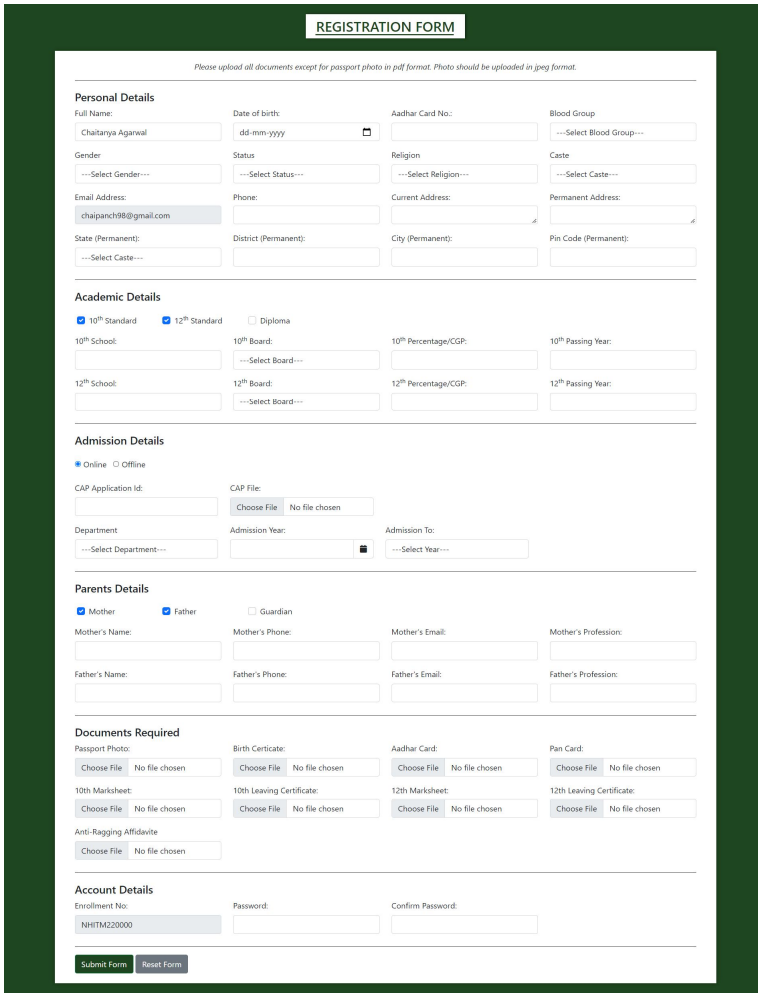


Fig. 6.Figure of Registration Form.

After submitting and verifying the documents is the system will take the student to the payment gateway and once payment is made, the system shows payment records.

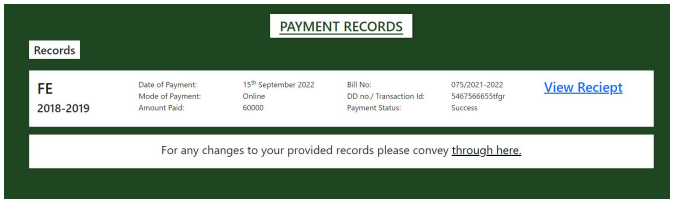


Fig. 7.Figure of Payment Record.

Once the fee is paid and submission of documents is done the student profile will be generated which can be edited by admin and viewed by the student.

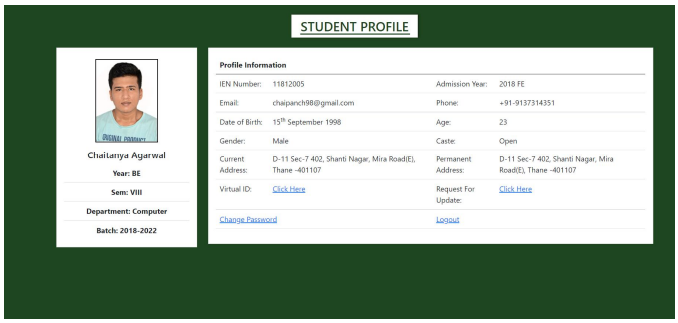


Fig. 8.Figure of Student Profile.

B. Placement Process

The system shows all the offers and internship details on this page. This page can be edited by the Placement in charge and admin. The students can view the internships and can apply to them.

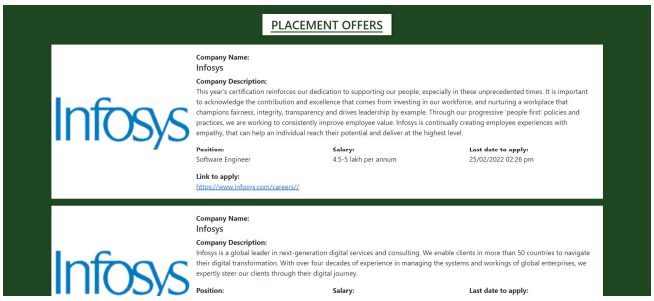


Fig. 9.Figure of Placement offers.

The students can add their internship and placement details in their profile.

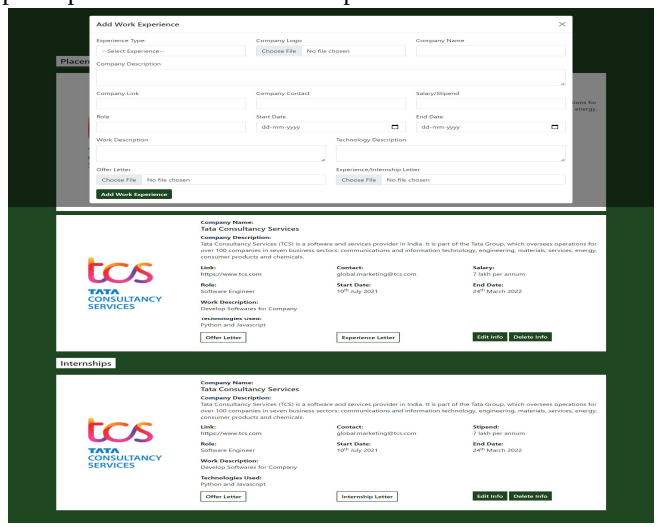


Fig. 10. Figure of Placement offers.

C. Exam Process

The student can view and access the summarized academic reports within the exam page he and she can also request any changes that are needed through the link provided.

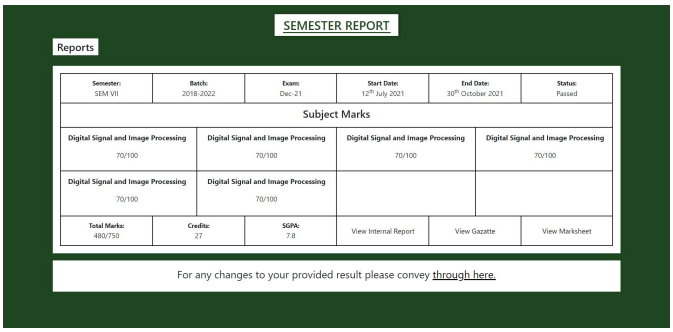


Fig. 11. Figure of summarised semester report.

X. CONCLUSION

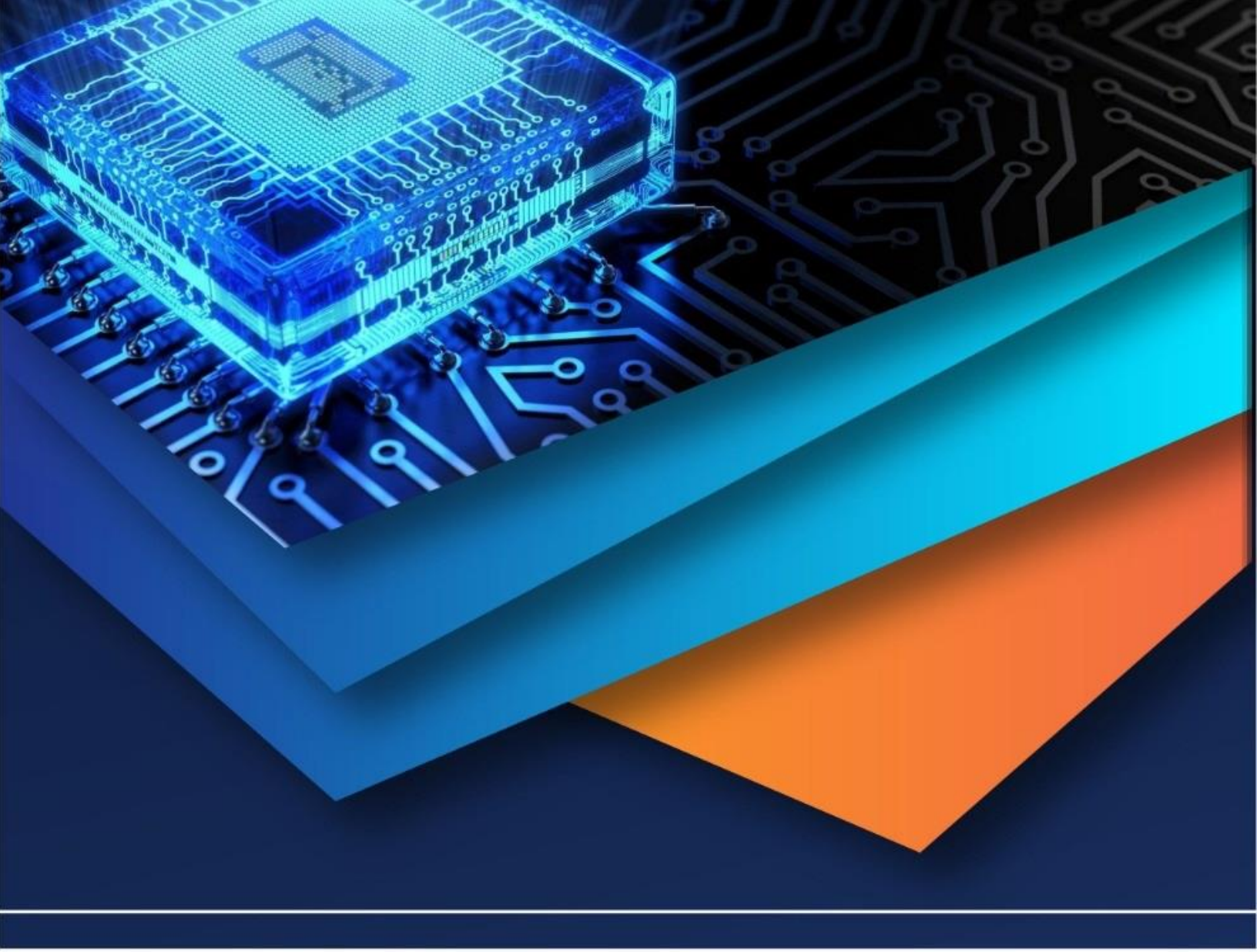
Student Management System can be used by the college to maintain their student records and easily provides accurate information. It can be monitored and controlled remotely. All the gathered information can be saved and can be accessed at any time. The data of the student is stored in one place. It is helpful to retrieve all the student's data in one place; right from students registering via their department, to students paying their fees to their internship details. The SMS system will therefore help the college to build high quality student data. The system will help to produce various student reports and better manage student data from enrollment to graduation.

XI. ACKNOWLEDGMENT

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