

COLLEGE MANAGEMENT SYSTEM(CMS)

A project report submitted in partial fulfilment of the requirement for degree of R.K Valley, Y.S.R Kadapa (Dist)-516330

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This Project report has been submitted in fulfilment of the requirements for the Degree of Bacherler of Technology in Software Engineering.

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(A.P.Government Act 18 of 2008) RGUKT-RK Valley

Vempalli, Kadapa, Andhra pradesh-516330.

CERTIFICATE OF EXAMINATION

This is to certify that we have examined the entitled College Management System *su*bmitted by S.Moulanisha(R170753) and C.Prathibha(R170752) and here by accord my approval of it as a study carried out and presented in a manner required for its acceptance in partial fulfilment for the award of Bachelor of Technology degree for which it has been submitted. This approval does not necessarily endorse or accept every statement made ,opinion expressed or conclusions drawn, as recorded in this thesis. It only signifies the acceptance of this thesis for the purpose for which it has been submitted.

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CERTIFICATE OF PROJECT COMPLETION

This is to certify that we have examined these is entitled **Web based college management system** submitted by S.Moulanisha(R170753) and C.Prathibha(R170752) under our guidance and supervision for the partial fulfilment for the degree of Bachelor of Technology in Computer Science and Engineering during the academic session September 2022 – April 2023 at RGUKT-RK Valley.

To the best of my knowledge, the results embodied in this dissertation work have not been submitted to any university or institute for the award of any degree or diploma.

Inter Guide Mr. k. Vinod Kumar HEAD OF THE DEPARTMENT

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DECLARATION

We, S.Moulanisha(R170753) and C.Prathibha(R170752) hereby declare the project report entitled "Web based college management system" done by is under guidance of Mr.K.Vinod Kumar is submitted in partial fulfilment for the degree of Bachelor of Technology in Computer Science and Engineering during the academic session September 2023 — February 2023 at RGUKT-RK Valley. We also declare that this project is a result of our own effort and has not been copied or imitated from any source. Citations from any websites are mentioned in the references. To the best of my knowledge, the results embodied in this dissertation work have not been submitted to any university or institute for throw award of any degree or diploma.

S.Moulanisha(R170753) C.Prathibha (R170752)

ACKNOWLEDGEMENT We would like to express our deep sense of gratitude & respect to all those people behind the screen who guided, inspired, and helped us crown all our efforts with success. We wish to express our gratitude to Mr.K.Vinod kumar for his valuable guidance at all stages of study, advice, constructive suggestions, supportive attitude and continuous encouragement, without which it would not be possible to complete this project. We would also like to extend our deepest gratitude & reverence to the Director of RGUKT, RK Valley Prof.K.Sandyarani and HOD of Computer Science and Engineering Mr.N.Satyanandaram for their constant support and encouragement. Last but not least we express our gratitude to our parents for their constant source of encouragement and inspiration for us to keep our morals high.

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Abstract:

Over the years the manual attendance management has been carried across most of educational institutions. To overcome the problems of manual attendance, we have developed "College Management System". College Management System is based on web server, which can be implemented on any computer. In this application, PHP is server side language, MySQL and PHP is used as back-end design and HTML, CSS and Node JS are used as front-end tools. The system communicates with database residing on a remote server. It calculates automatically, the attendance percentage of students without any manual paper-based work. The system facilitate the end users with interactive design and automated processing of attendance management.

1.INTRODUCTION

Education is an traditional part of the society. As time has progressed, education has also progressed into the modern times. So in accordance with the progress of education, changing the way of maintaining college information is required. In most educational institutions the attendance is taken manually. It is not only time consuming, but it is also unsecure and unreliable and it can be lost. If all the work is included on an online system, then it can reduce time and work. The College Management System is an intranet based application that can accessed throughout the institution or a specified college. The system is helpful for both students, lecturers. This System is fully responsive where a user can use in mobile, tablets and different computer systems. In this system records are kept safe and secure and the attendance information of particular or all students of particular class can be accessed easily and without time consuming, the report is generated automatically.

1.1 Purpose

The main characteristics of this system is that it is web based, fully responsive and flexible. It can be accessed from any computer no matter where you are. Its purpose is to make a web based attendance software to register the student details, their subjects, teachers, and related field. The daily attendance of students are taken automatically by selecting student name. Here admin can login and assign faculty to the respective sections. Faculty give attendance to the students for respective subjects. Students are capable to login and check their attendance in semester wise in the portal.

1.3 Scope

- Eliminate duplicate data entry and errors in time and attendance entries.
- Eliminate paperwork and save time.
- Automatic calculation of attendance.
- To increase security.

2. Product Features and User Classifications

There are several types of end users for the CMS. They are broadly divided as Students, Staff and the Administrator. Each of these classes have their own set of features.

- **1) ADMIN**: Who can view and edit the details of any students/staff. Can add/edit departments, courses, classes and time-tables.
- 2) STAFF: who can view students details, add/update assignments, marks and attendance of a particular student. They can see the time-table of a particular class also.
- 3) STUDENT: who can update profile/add solution to assignments and see attendance.
- The features that are available to administrator are :
- > An admin can login into the system and perform any of the available operator
- ➤ Add a student
- > View the student details
- ➤ Modify student data
- > Delete student record

- ➤ Add staff
- > View staff details
- ➤ Modify staff data
- ➤ Delete staff record
- ➤ Modify department
- ➤ Add/modify courses
- ➤ Add/modify classes ➤ Can view the record of all the students and staff of a particular class/course/department.
- The features that are available to staffs are :
- > A staff can login into the system and perform any of the available operations :
- ➤ View his/her personal details (name, dob, age, address, joining date)
- ➤ Edit his/her details
- > View the department (s)he belongs to.
- > The classes they teacher
- ➤ Generate class report
- ➤ Mark attendance of a particular student
- > Update the attendance
- > See the time-table of a class.
 - The features that are available to students
- > A student can login into the system and perform any of the following operations
- ➤ View his/her personal details (name, dob, age, address, joining date)
- ➤ Edit his/her details
- > View the department (s)he belongs to.
- > The classes they belong
- ➤ View his/her attendance

2.1 Operating Environment

The operating environment for CMS application are listed below:

• Operating System: Windows 10

Database: MySQL

Frontend: HTML/CSS/JS/Bootstrap

Backend : Node.js

2.2 Constraints

1. Users should be aware of the internet.

- 2. Users must have a valid id and password.
- 3. Only Admin, Staff and Students can access.
- 4. Every user must be comfortable using a computer.
- 5. All operations are in English so users must have basic knowledge of English.

3. SYSTEM DESIGN

3.1 System Design of CMS

Various Design concepts and processes were applied to this project on the basis of which a complete logical system is built which fulfils the given requirements. There were two steps while design analysis:

1. Primary Design Phase:

The system is designed at block level. We first decided the end users that will be using our application. On finalizing that and following the concepts like separation of concerns, the software is divided into individual modules based upon the end users that are functionally independent and incorporates information hiding. There are 3 types of end users (modules) - students, staff and the administrator.

2. Secondary Design Phase:

Each module/block was studied in detail during this phase.

3.2 Admin

The administrator will have access to all the information in the different tables in the database. They will be able to add an entry in any table and also edit them. They will be responsible for maintaining the data. The main aim here is to provide a user friendly environment for the admin

so that they can easily adapt themselves with the environment. They will be responsible for the creation/deletion of student / staff / department / course / class information. Only authorized users will be made admin and thus we have protected the routes. They will be provided with search and filter features so that they can access the data efficiently. Different Views of Admin 10 are described below.

• Profile

Admin will be able to see is own information. They will be able to see a complete overview of total students / staff in the college and various courses / departments.

Settings

Admin will be able to change its own information like name, email, password, add other Information such as address, contact etc.

Department

The admin is responsible for creating new departments and updating the already existing ones. Here they will be provided with search and filter operations so that they can work efficiently. Necessary information will be needed while adding new Departement.

Course

The admin is responsible for creating new courses and updating the already existing ones. Here they will be provided with search and filter operations so that they can work efficiently. Necessary information will be needed while adding new courses.

Class

The admin is responsible for creating new classes and updating the already existing ones. Here they will be provided with search and filter operations so that they can work efficiently. Necessary information will be needed while adding new classes.

Student Section

The admin will be able to see the complete information of all the students. They are also responsible for adding new students and updating the already existing ones. They will be provided with a user friendly. UI to list down all the necessary information of students and if they want they can see the complete details by clicking on the relevant student's name.

Staff Section

The admin will be able to see the complete information of all the staff. They are also responsible for adding new students and updating the already existing ones. They will be provided with a user friendly .UI to list down all the necessary information of staff and if they want they can see the complete details by clicking on the relevant staff's name.

Forget Password / Reset Password

In case an admin forgets his password or wants to reset it, he can do so by clicking on a reset password button. A reset link will be sent in the mail which will be active for only 20 min.

3.3 Staff

Each teacher belongs to a department and is assigned to classes with a course. Teachers will also have a username and password to login. The different views for teachers are described below.

Profile

Each staff member will be able to see its own information. They will be able to see a complete overview of the classes they teach, number of students that belong to those classes etc.

Class

Teacher can see a list of all the classes he teaches. He can navigate into any class to see the list of students of that class.

Attendance

The teacher has the ability to add and also edit the attendance of each student. For entering the attendance, they will be given the list of students in each class and they can enter the attendance of the whole class on a day to day basis.

• Time Table

The teacher can see the time-table of the classes he teaches (so that if he wants to take an extra class he can do so without any clashes).

Forget Password / Reset Password

In case a staff forgets his password or wants to reset it, he can do so by clicking on a reset password button. A reset link will be sent in the mail which will be active for only 20 min.

3.4 Students

Each student belongs to a class identified by semester and section. Each class belongs to department and are assigned a set of courses. Therefore, these courses are common to all students of that class.

The students are given a unique username and password to login. Each of them will have a different view. These views are described below.

Profile

Each student will be able to see its own information. They will be able to see the department they belong to, current semester registered courses, their personal information etc.

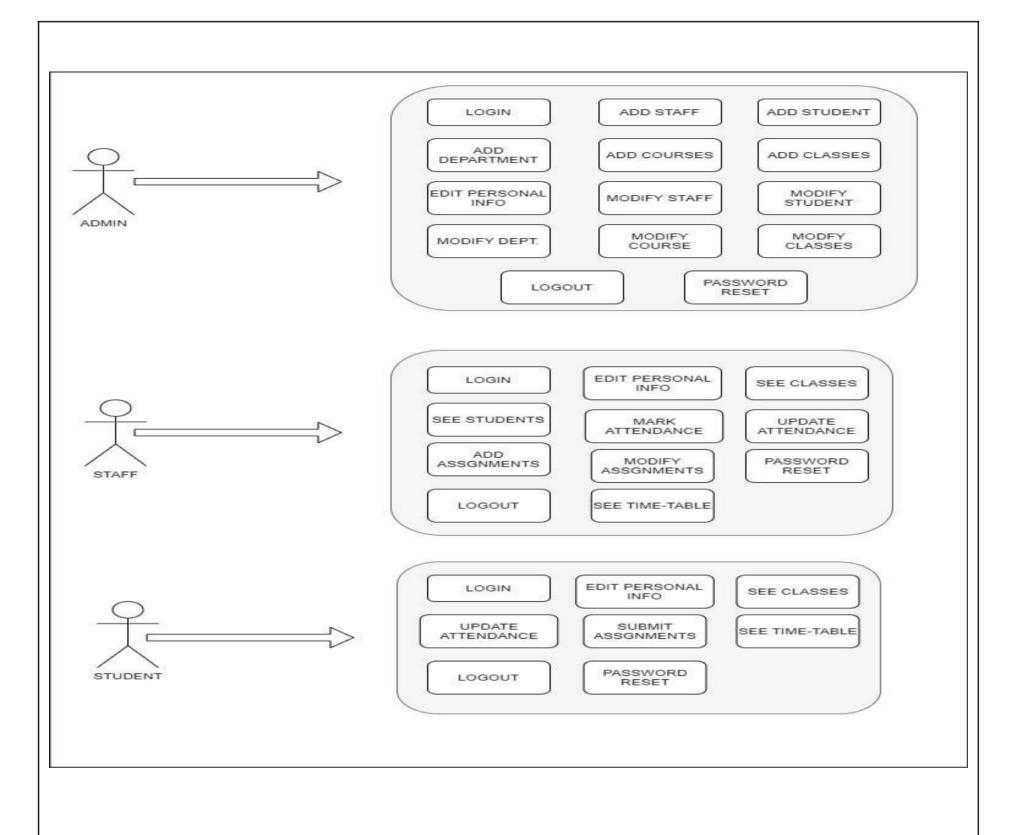
• Attendance Information

Attendance for each course will be displayed. This includes the number of attended classes and the attendance percentage. If the attendance percentage is below a specified threshold, say 75%, It will be marked in red otherwise it will be in green.

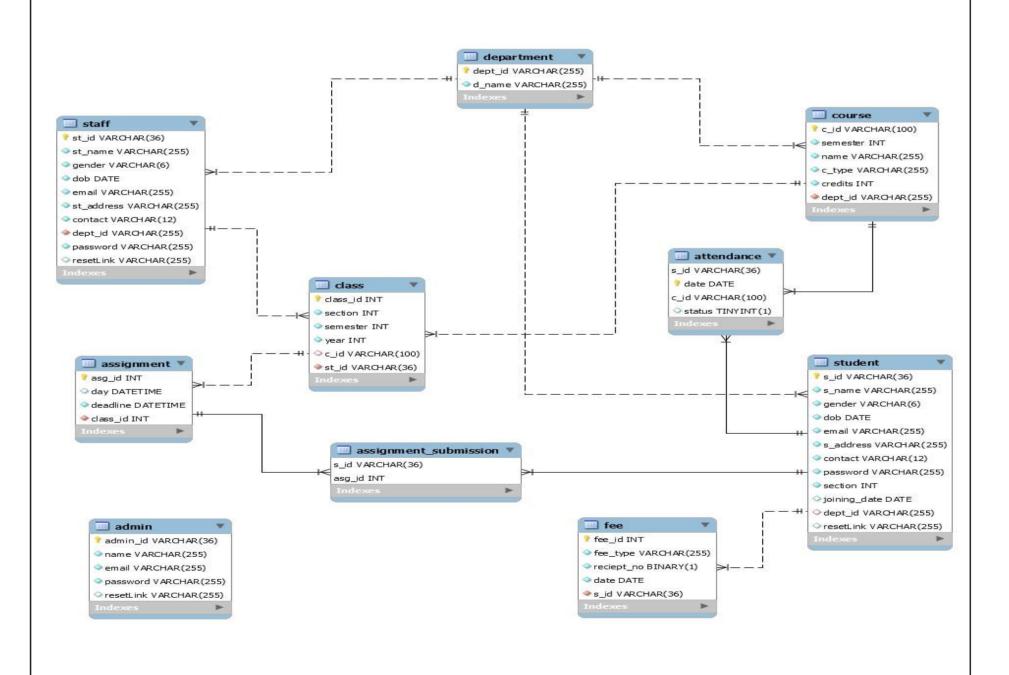
4. Diagrams:

4.1 End User Features (Diagram)

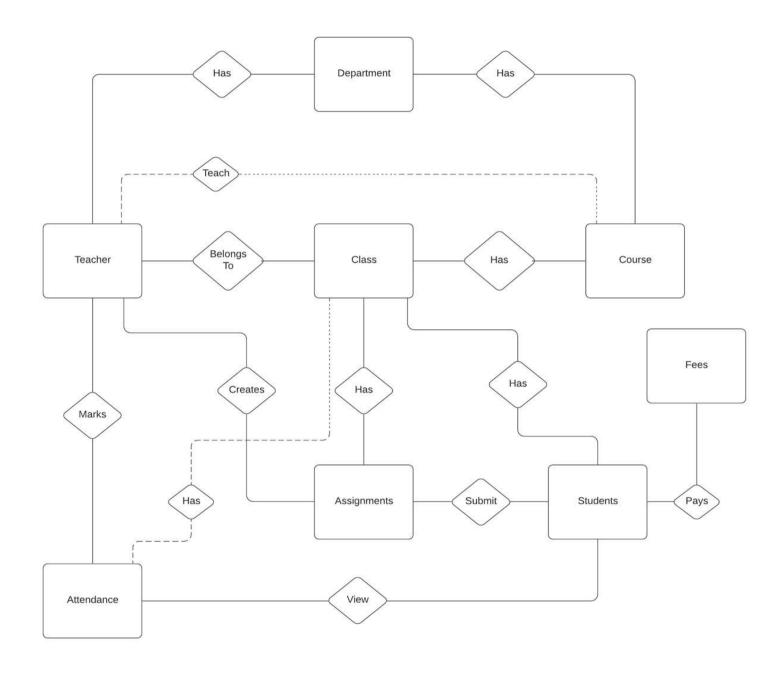
This is the use case diagram which depicts the user's interaction with the system. It also shows the relationship between the user and the different use cases in which the user is involved.



4.2 Class Diagram



4.3 ER Diagrams



5.Implementation and System Testing

After all phase have been perfectly done, the system will be implemented to the server and the system can be used.

1) System Testing

The goal of the system testing process was to determine all faults in our project. The program was subjected to a set of test inputs and many explanations were made and based on the explanations it will be decided whether the program be haves as expected or not. Our Project went through two level soft testing.

1.Unit Testing

2.Integration Testing

Unit Testing

Unit testing is commenced when a unit has been created and effectively reviewed. In order to test a single module we need to provide a complete environment i.e. besides the section we would require the procedures belonging to other units that the unit under test calls non local data structures that module accesses. A procedure to call the functions of the unit under test with appropriate parameters.

3) Integration Testing

In the Integration testing we test various combination of the project module by providing the input. The primary objective is to test the module interfaces in order to confirm that no errors are occurring when one module invokes the other module.

6.CODING

```
SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
START TRANSACTION;
SET time zone = "+00:00";
/*!40101 SET @OLD CHARACTER SET CLIENT=@@CHARACTER SET CLIENT */;
/*!40101 SET @OLD CHARACTER SET RESULTS=@@CHARACTER SET RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8mb4 */;
-- Database: `mebis`
-- Table structure for table 'book'
CREATE TABLE 'book' (
 'library name' varchar(255) NOT NULL,
 'book name' varchar(255) NOT NULL,
 `author` varchar(255) NOT NULL,
 'book status' varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table 'book'
INSERT INTO 'book' ('library_name', 'book_name', 'author', 'book_status') VALUES
('North Campus Library', 'Basics of Database', 'Reda Alhajj', 'Unavailable'),
('North Campus Library', 'Harry Potter', 'J. K. Rowling', 'Available'),
('North Campus Library', 'Lord of The Rings', 'J.R.R Tolkien', 'Available');
```

```
-- Table structure for table `course`
CREATE TABLE 'course' (
 `course name` varchar(255) NOT NULL,
 `AKTS` int(255) NOT NULL,
 `class no` varchar(255) NOT NULL,
 'course type' varchar(255) NOT NULL,
 'lecturer' varchar(255) NOT NULL,
 `prerequisite` varchar(255) NOT NULL,
 'semester' varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `course`
INSERT INTO 'course' ('course name', 'AKTS', 'class no', 'course type', 'lecturer', 'prerequisite', 'semester') VALUES
('Algorithm', 8, 'C-210', 'Technical', 'Reda Alhajj', 'Data Structures', 'Spring'),
('Calculus 1', 8, 'CZ-16', 'Technical', 'Mehmed Rafet ÖZDEMİR', 'NULL', 'Spring'),
('Calculus 2', 8, 'CZ-16', 'Technical', 'Mehmed Rafet ÖZDEMİR', 'Calculus 1', 'Fall'),
('Data Structures', 8, 'C-310', 'Technical', 'Hasan Fehmi Ateş', 'Object Oriented Programming', 'Fall'),
('Database', 8, 'C-210', 'Technical', 'Reda Alhajj', 'Object Oriented Programming', 'Spring'),
('Introduction to Programming', 6, 'C-211', 'Technical', 'Selim Akyokuş', 'NULL', 'Fall'),
('Machine Learning', 6, 'C-313', 'Non-Technical', 'Bahadır Kürşat Güntürk', 'NULL', 'Fall'),
('Microprocessor', 6, 'C-210', 'Technical', 'Mehmet Kocatürk', 'Introduction to Programming', 'Fall'),
('Object Oriented Programming', 8, 'C-212', 'Technical', 'Selim Akyokuş', 'Introduction to Programming', 'Spring'),
('Probability', 8, 'CZ-12', 'Technical', 'Mehmet Kemal Özdemir', 'Calculus 2', 'Spring'),
('Web Design', 8, 'C-315', 'Non technical', 'Muhsin Zahid Uğur', 'NULL', 'Spring');
-- Table structure for table 'dining'
CREATE TABLE 'dining' (
 'date' date NOT NULL,
 `dining name` varchar(255) NOT NULL,
```

```
`soup` varchar(255) NOT NULL,
 'main dish' varchar(255) NOT NULL,
 'side_dish' varchar(255) NOT NULL,
 'dessert' varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `dining`
INSERT INTO 'dining' ('date', 'dining name', 'soup', 'main dish', 'side dish', 'dessert') VALUES
('2020-06-19', 'North Campus Dining Hall', 'Mercimek Çorbası', 'Tas Kebabı', 'Pirinç Pilavı', 'Fıstıklı Baklava'),
('2020-06-20', 'North Campus Dining Hall', 'Yayla Çorbası', 'Kuru Fasulye', 'Bulgur Pilavı', 'Puding');
-- Table structure for table 'exam'
CREATE TABLE 'exam' (
 `course_name` varchar(255) NOT NULL,
 `exam_name` varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table 'exam'
INSERT INTO 'exam' ('course_name', 'exam_name') VALUES
('Algorithm', 'Algorithm Final'),
('Algorithm', 'Algorithm Midterm'),
('Database', 'Database Final'),
('Database', 'Database Midterm');
-- Table structure for table 'lecturer'
```

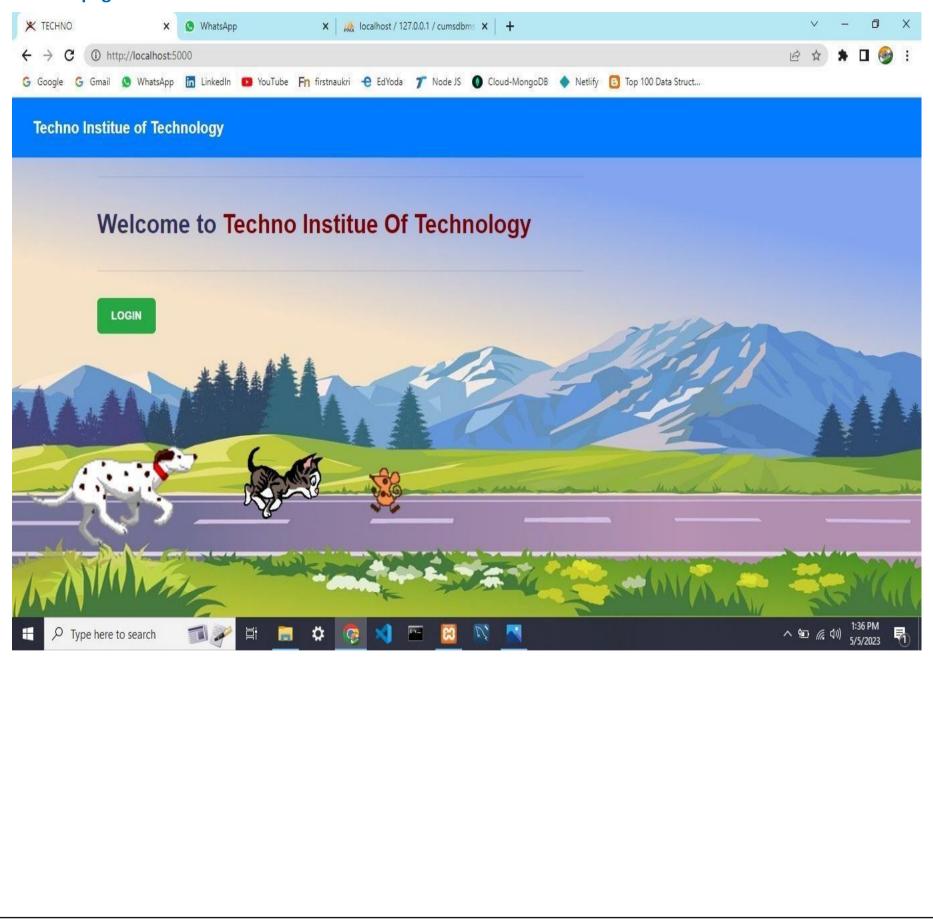
```
CREATE TABLE 'lecturer' (
 'lecturer name' varchar(255) NOT NULL,
 'website' varchar(255) NOT NULL,
 'birthdate' date NOT NULL,
 'email' varchar(255) NOT NULL,
 'degree' varchar(255) NOT NULL,
 `role` varchar(255) NOT NULL,
 'course name' varchar(255) NOT NULL,
 `advised st id` int(255) NOT NULL,
 'department' varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table 'lecturer'
INSERT INTO 'lecturer' ('lecturer name', 'website', 'birthdate', 'email', 'degree', 'role', 'course name',
'advised st id', 'department') VALUES
('Mehmet Kemal Özdemir', 'https://sens.medipol.edu.tr/m-kemal-ozdemir/', '1967-11-12',
'mkozdemir@medipol.edu.tr', 'Prof.', 'Deputy Dean', 'Probability', 0, 'EEE'),
('Mehmet Rafet Özdemir', '', '0000-00-00', 'mrozdemir@medipol.edu.tr', 'Dr', 'Lecturer', 'Calculus 1', 0, 'CoE');
-- Table structure for table 'program'
CREATE TABLE 'program' (
 'program name' varchar(255) NOT NULL,
 'est semester duration' int(255) NOT NULL,
 `student_id` int(255) NOT NULL,
 `other_uni_name` varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=ut
```

```
INSERT INTO 'program' ('program name', 'est semester duration', 'student id', 'other uni name')
VALUES
('Erasmus', 2, 64160002, 'Harvard University'),
('Mevlana', 1, 64160001, 'Standford University');
-- Table structure for table `student`
CREATE TABLE `student` (
 `student id` int(255) NOT NULL,
 'name' varchar(255) NOT NULL,
 'birthdate' date NOT NULL,
 'course code' varchar(255) NOT NULL,
 'advisor name' varchar(255) NOT NULL,
 'degree' varchar(255) NOT NULL,
 'scholarship' varchar(255) NOT NULL,
 'grade' int(255) NOT NULL,
 'emp type' varchar(255) NOT NULL,
 'department' varchar(255) NOT NULL,
 'email' varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
-- Dumping data for table `student`
```

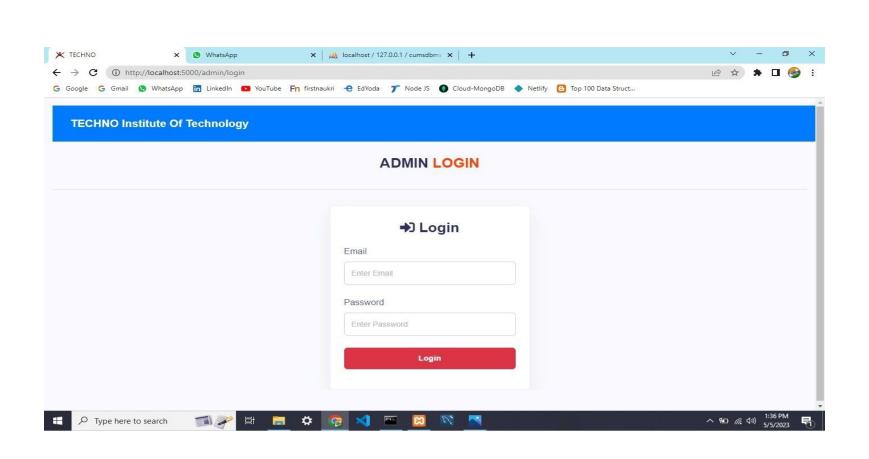
```
INSERT INTO 'student' ('student id', 'name', 'birthdate', 'course code', 'advisor name', 'degree',
'scholarship', 'grade', 'emp type', 'department', 'email') VALUES
(64160001, 'Mustafa Aktaş', '1998-10-17', 'Database', 'Mehmet Kemal Özdemir', 'Undergrad', 'Full
Scholarship', 3, 'Advanced Programming TA', 'Computer Science & Engineering',
'mustafaaktas@st.medipol.edu.tr'),
(64160002, 'Mert Can Çakmak', '1998-06-16', 'Algorithm', 'Mehmet Kemal Özdemir', 'Undergrad', 'Full
Scholarship', 3, 'Probability TA', 'Computer Science & Engineering', 'mccakmak@st.medipol.edu.tr'),
(64160018, 'Ali Yılmaz', '1997-06-09', 'Machine Learning', 'Mehmet Kemal Özdemir', 'Grad', 'Half
Scholarship', 1, 'NULL', 'Computer Science & Engineering', 'aliyilmaz@st.medipol.edu.tr'),
(64160022, 'Ayşe Sönmez', '1998-06-16', 'Microprocessor', 'Mehmet Kemal Özdemir', 'Phd', 'Full
Scholarship', 4, 'Probability TA', 'Computer Science & Engineering', 'aysesonmez@st.medipol.edu.tr');
-- Table structure for table 'student book'
CREATE TABLE 'student book' (
 `student id` int(255) NOT NULL,
 'book name' varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

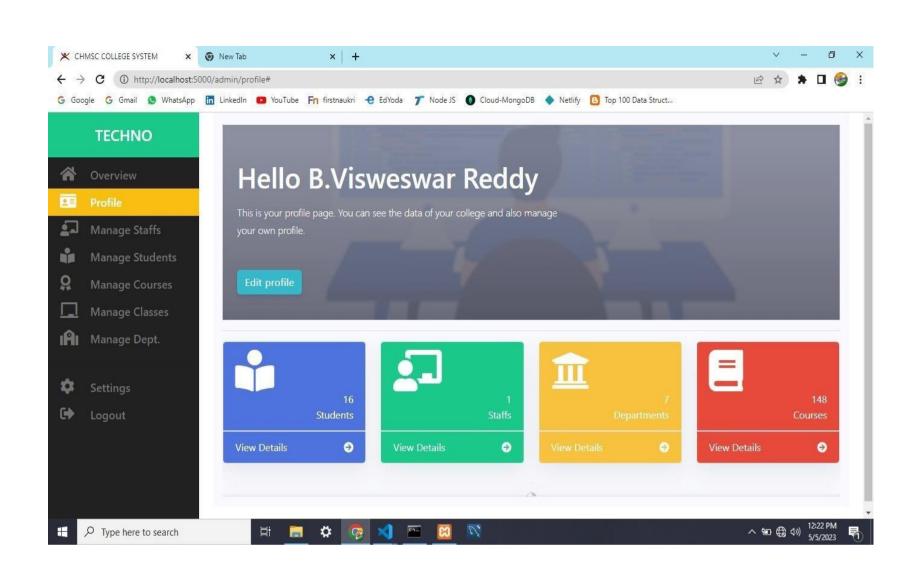
7. OUTPUT

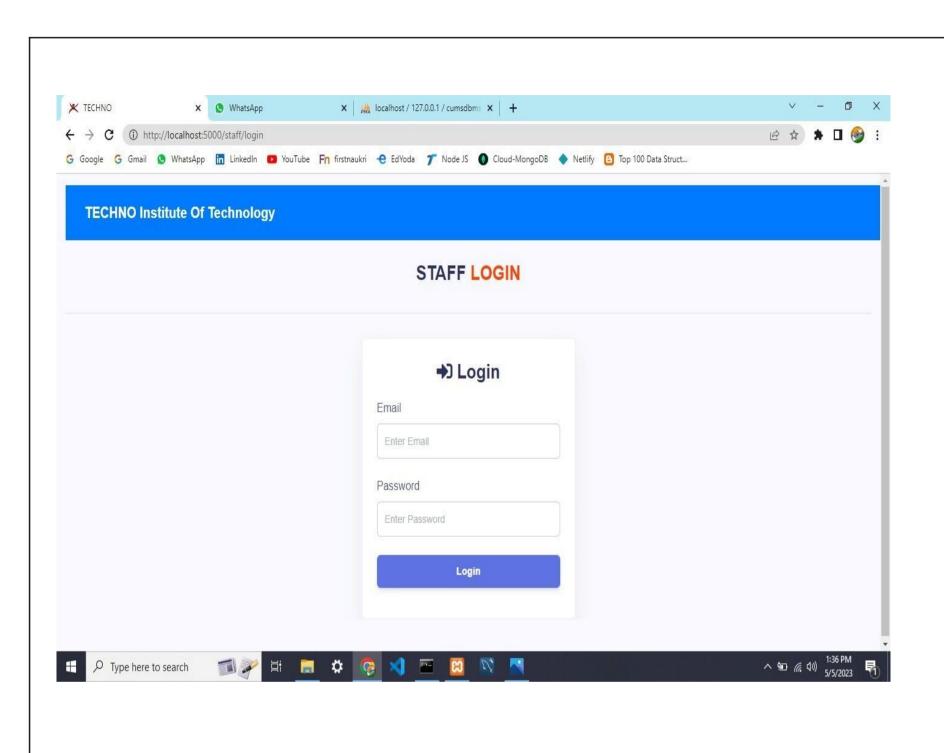
1.Home page

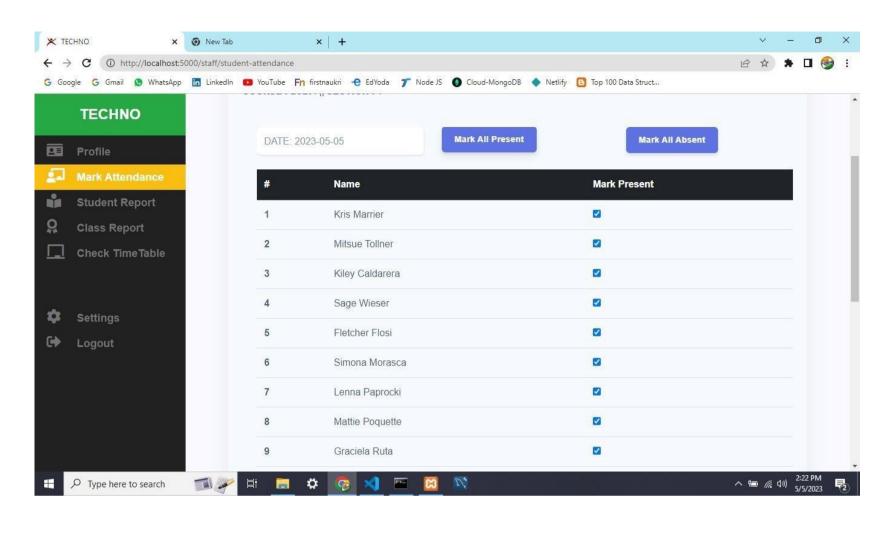


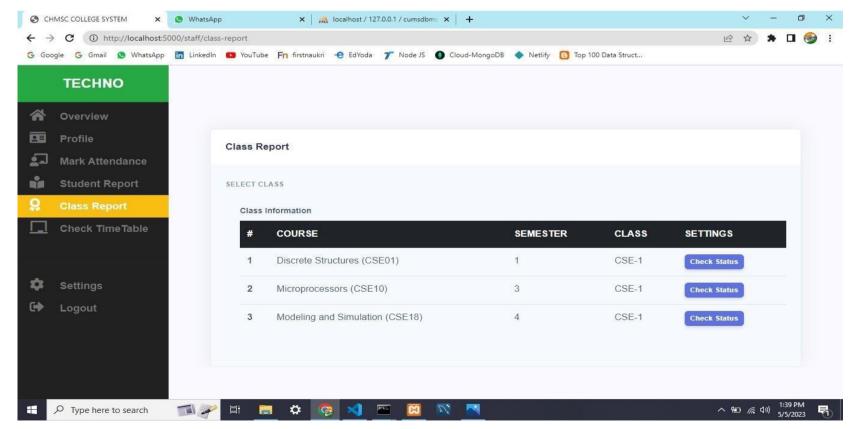
2.Login Page X TECHNO x | localhost / 127.0.0.1 / cumsdbms x | + ← → C ① http://localhost:5000/index 增 ☆ ★ □ ⑩ : G Google G Gmail 🕓 WhatsApp 🛅 LinkedIn 🔼 YouTube Fn firstnaukri 😛 EdYoda 🦵 Node JS 🌒 Cloud-MongoDB ♦ Netlify 🔼 Top 100 Data Struct... **TECHNO Institute Of Technology WELCOME TO TECHNO Institute Of Technology** →) LOGIN ADMIN LOGIN STAFF LOGIN STUDENT LOGIN 🚞 🗱 🧔 📢 🖭

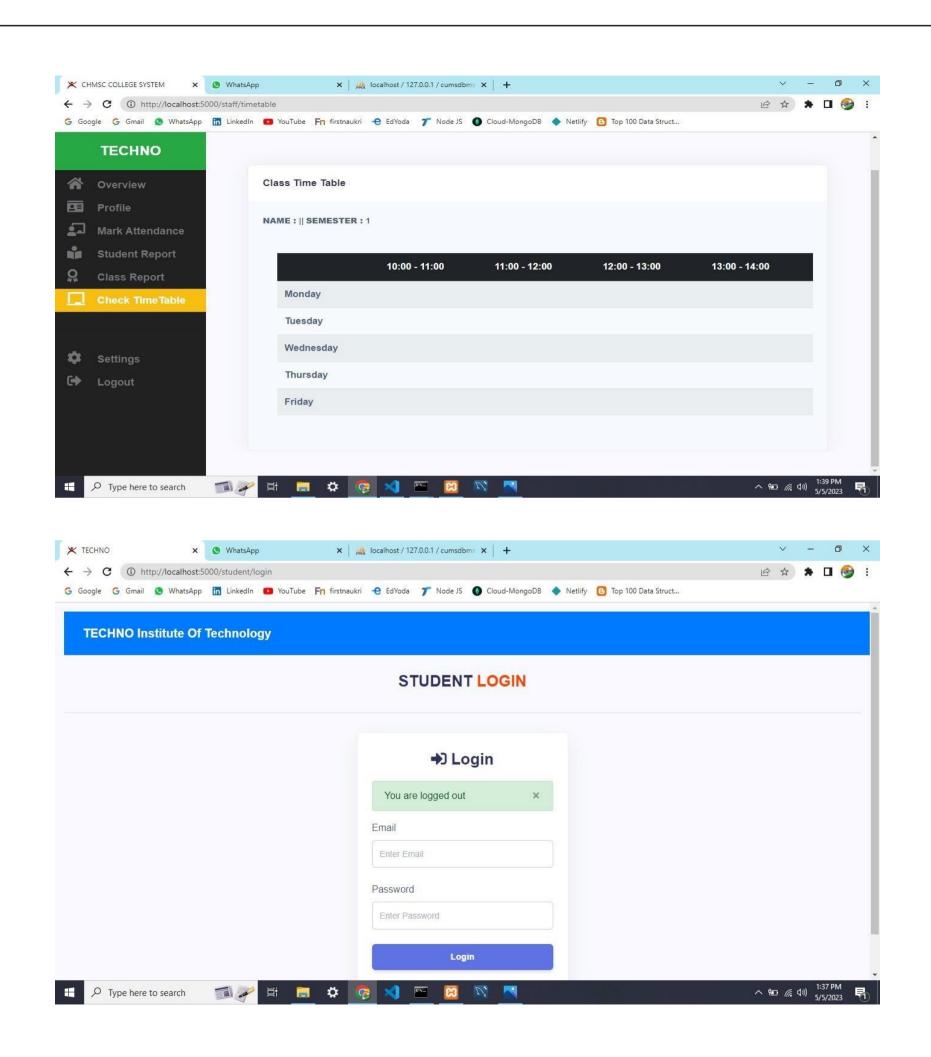


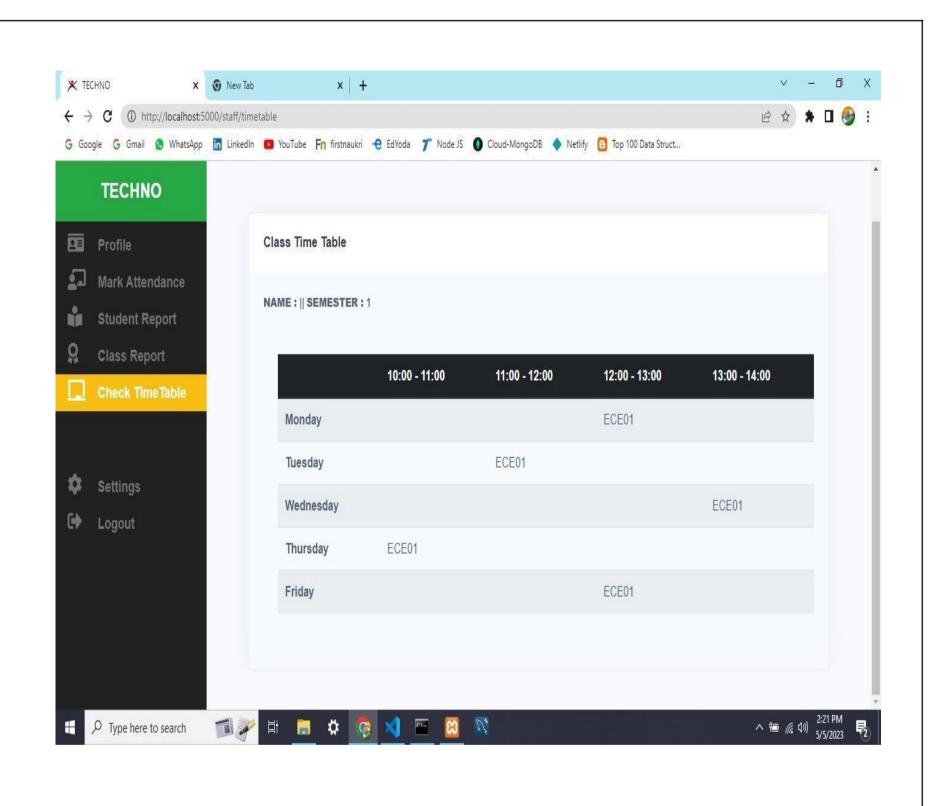












Conclusion:

The System will greatly simplify and speed the management process. It will describe the paper work. The admin, faculty or the student will perform all the task very easily and more convenience way. It manages the complete student lifecycle, parent, as well as faculty in the college. It also manages the academic, administrative, and fee, management and all other financial activities of a college.

References:

https://firebase.google.com https://www.netlify.com https://youtu.be/gjbcMOYsZrE