VISVESVARAYA TECHNOLOGICAL UNIVERSITY JNANA SANGAMA, BELAGAVI-590018



"COLLEGE MANAGEMENT SYSTEM"

Submitted in the partial fulfillment for the requirements for the conferment of degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

Submitted By

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(An Autonomous Institute, Affiliated to VTU, Belagavi Avalahalli, Yelahanka, Bengaluru-560064) 2022-2023

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT (An Autonomous Institute, Affiliated to VTU, Belagavi Avalahalli, Yelahanka, Bengaluru-560064)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



CERTIFICATE

This is to certify that the Mini Project work entitled "COLLEGE MANAGEMENT SYSTEM" is a bonafide work has been carried out by Ms. BHAVANA N S (1BY20CS038) and Ms. BRUNDAJA D N (1BY20CS041), bonafide students of BMS Institute of and Management, Autonomous Institute Affiliated to VTU, in partial fulfillment for the award of Bachelor of Engineering Degree in Department of Computer Science and Engineering during the year 2022-23. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report. The Mini project report has been approved as it satisfies the academic requirements in respect of Mini project work for the B.E Degree.

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ABSTRACT

The purpose of College Management System is to automate the existing manual system by the help of computerized equipment and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with.

College Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That means that one need not be distracted by information that is not relevant, while being able to reach the information.

The aim is to automate its existing manual system by the help of computerized equipment and fullfledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Basically, the project describes how to manage for good performance and better services for the clients.

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By,

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CHAPTER 1

INTRODUCTION

The "College Management System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and, in some cases, reduce the hardships faced by this existing system, moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus, by this all it proves it is user-friendly. College Management System as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources

Every organization, whether big or small, has challenges to overcome and managing the information of Fees, Student, Course, Subject. Semester. Every College Management System has different Student needs; therefore, we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources.

CHAPTER 2 LITERATURE SURVEY

2.1 OBJECTIVES

This is a web-oriented application allows us to access the whole information about the college, staffs, students, facilities etc. This application provides a virtual tour of Campus. Here we will get the latest information about the students and staffs. This generic application designed for assisting the students of an institute regarding information on the courses, subjects, classes, assignments, grades and timetable. It also provides support that a faculty can also check about his daily schedule, can upload assignments, and notices to the students. Here administrator will manage the accounts of the student and faculties, makes the timetable, and upload the latest information about the campus.

2.2 SCOPE

It may help collecting perfect management in details. In a very short time, the collection will be obvious, simple and sensible. It will help a person to know the management of passed year perfectly and vividly. It also helps in current all works relative to College Management System. It will be also reduced the cost of collecting the management & collection procedure will go on smoothly.

- ✓ Our project aims at Business process automation, i.e, we have tried to computerize various processes of College Management System. In computer system the person has to fill the various forms & number of copies of the forms can be easily generated at a time.
- ✓ In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- ✓ To assist the staff in capturing the effort spent on their respective working areas.

- ✓ To utilize resources in an efficient manner by increasing their productivity through automation.
- ✓ The system generates types of information that can be used for various purposes.
- ✓ It satisfies the user requirement
- ✓ Be easy to understand by the user and operator
- ✓ Be easy to operate
- ✓ Have a good user interface
- ✓ Be expandable
- ➤ College information: Through this service one can access the complete information about the college campus such as courses available, admission procedure, placements, college events, achievements etc.
- ➤ Student tracking: Any company or any organization that want to check the summary about the student of the college, so that they will be able to choose the particular students for their campus placement and for that purpose they will be given a particular link through which they can access the information required.
- > Student attendance status: It gives the attendance status of students. Faculty will update the attendance periodically and can be seen by students and parents.
- Student's performance in exams: This facility provides the performance of the student in each exam which is conducted by university or college such as midterm performance. Marks obtained by students in exams will be updated by faculties that can be access by students and parents.
- Exam Notification: This facility notifies students and parents about examination schedule.
- ➤ Events: It will give information about different events that will be conducted by college time to time. Information about these events will be updated by administrator.

- ➤ Online assignments: This service provides the facility to faculty to upload assignments and to students to submit these assignments online.
- ➤ Information about staff: It will help in maintaining complete information about college faculty members such as their department, cadre, date of joining, salary, etc. Administrator will register new faculties and remove their account when they leave the college.

2.3 THEORITICAL BACKGROUND

Maintaining all the details related to a college is difficult. The details in separate records are tedious task. Referring to all these records and updating is needed. There is a chance for more manual errors.

2.3.1 Problems in existing system

- It was limited to a single system.
- It was less user-friendly.
- It has a lot of manual work (Manual system does not mean that we are working with pen and paper, it also includes working on spread sheets and other simple software's)
- It requires more no of employees need to work.
- It was time consuming process.
- The present system was very less secure.
- It is unable to generate different kinds of report.

2.3.2 Solution to these problems

The development of the new system contains the following activities, which try to automate the entire process keeping in view of the database integration approach.

• User friendliness is provided in the application with various controls.

- The system makes the overall project management much easier and flexible.
- It can be accessed over the Internet.
- Various classes have been used to provide file upload and mail features.
- There is no risk of data mismanagement at any level while the project development is under process.
- It provides high level of security using different protocols like https etc.

2.3.3 Problem Definition

The problem is to provide the complete information about the college campus. In which the college staff members, students and parents can access the information and will be familiar with college campus. It will provide interactive environment for the staff, students and parents by getting knowledge of student attendance, remarks, exams performances, grades, timetables, notices etc.

CHAPTER 3

SOFTWARE REQUIREMENT SPECIFICATION

The Software Requirements Specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioural description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

The proposed system has the following requirements:

- System needs store information about new entry of Student.
- System needs to help the internal staff to keep information of Fees and find them as per various queries.
- System needs to maintain quantity record.
- System needs to keep the record of Attendance.
- System needs to update and delete the record.
- System also needs a search area.

3.1 FEASIBILITY STUDY

After doing the project College Management System study and analysing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible - given unlimited resources and infinite time Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements.

A. Economic Feasibility:

This is a very important aspect to be considered while developing a project. We decided the technology based on minimum possible cost factor.

- All hardware and software cost has to be borne by the organization.
- Overall, we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for system.

B. Technical Feasibility:

This included the study of function, performance and constraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the system, as described in the System Requirement Specification (SRS), and checked if everything was possible using different type of frontend and backend platforms.

C. Operational Feasibility:

No doubt the proposed system is fully GUI based that is very user friendly and all inputs to be taken all self-explanatory even to a layman. Besides, a proper training has been conducted to let know the essence of the system to the users so that they feel comfortable with new system. As far our study is concerned the clients are comfortable and happy as the system has cut down their loads and doing.

3.2 SOFTWARE REQUIREMENTS

Name of the components	Specifications
Front-end Coding language	PHP
Front-end Scripting language	HTML, CSS, JavaScript
Backend Database	My SQL server
Browser	Any of Mozilla, Opera, Chrome, Firefox etc
Web Server	Apache Server
Operation System	Windows 7 or more

3.3 HARDWARE REQUIREMENTS

Name of the components	Specifications
Processor	Intel core Duo 2.0GHz or more.
RAM	1GB or more.
Hard disk	80GB or more
Monitor	15" CRT or LCD monitor.
Keyboard	Normal or Multimedia
Mouse	Compatible

3.4 EXTERNAL INTERFACE REQUIREMENTS

- > Simple, Attractive, User Friendly
- > Self-Contained, Consistent, Self-Explanatory
- > Robust

CHAPTER 4 DESIGN

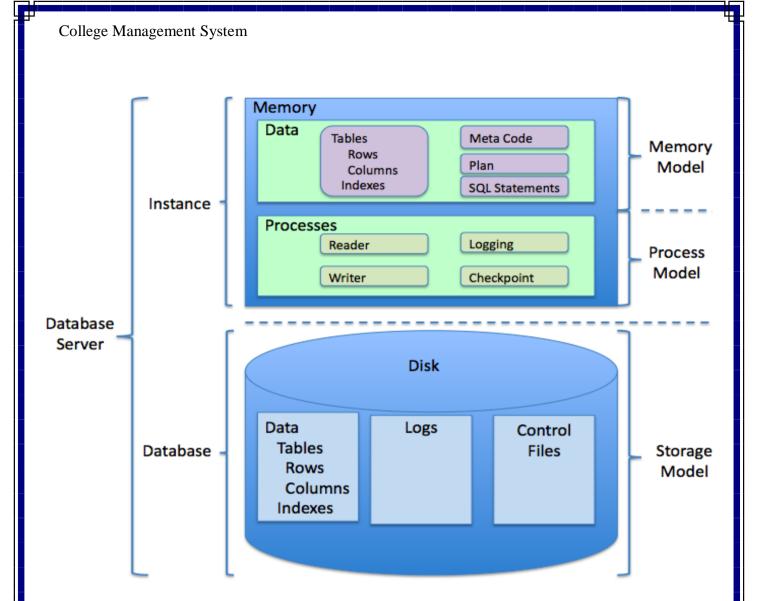
4.1 PROJECT CATEGORY

Relational Database Management System (RDBMS): This is an RDBMS based project which is currently using MySQL for all the transaction statements. MySQL is an opensource RDBMS System.

Brief Introduction about RDBSM:

A relational database management system (RDBMS) is a database management system (DBMS) that is based on the relational model as invented by E. F. Codd, of IBM's San Jose Research Laboratory. Many popular databases currently in use are based on the relational database model.

RDBMSs have become a predominant choice for the storage of information in new databases used for financial records, manufacturing and logistical information, personnel data, and much more since the 1980s. Relational databases have often replaced legacy hierarchical databases and network databases because they are easier to understand and use. However, relational databases have been challenged by object databases, which were introduced in an attempt to address the object-relational impedance mismatch in relational database, and XML databases.

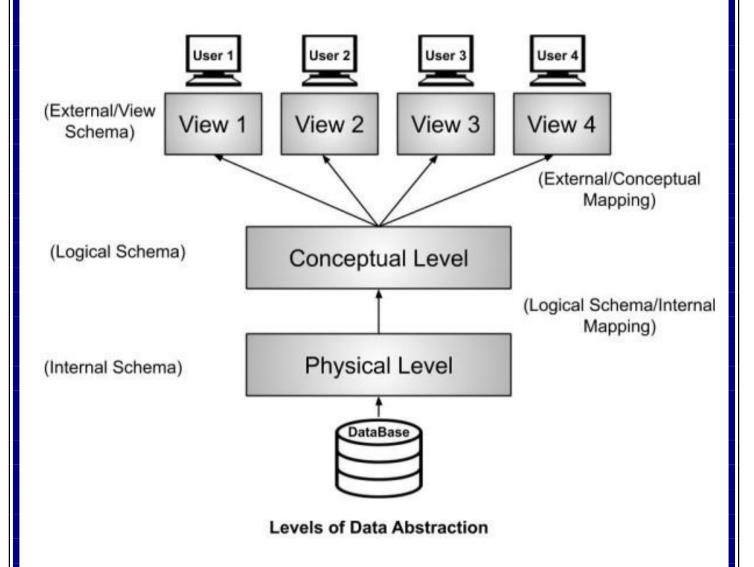


In this phase the software's overall structure and its nuances are defined. In terms of client server technology, the no of tiers needed for the package architecture, database design, data structure design etc are defined in this phase. Analysis and Design are very crucial in entire development cycle. Any glitch in this phase could be expensive to solve in the later stage of software development. Hence following is the essential approach taken during website designing:

- > DFD
- Database Designing
 - ER Diagram design
 - Schema Design
- > Pseudo code for methods

4.2 SCHEMA DESIGN

The design of the database is called a schema. This tells us about the structural view of the database. It gives us an overall description of the database. A database schema defines how the data is organised using the schema diagram. A schema diagram is a diagram which contains entities and the attributes that will define that schema. A schema diagram only shows us the database design. It does not show the actual data of the database. Schema can be a single table or it can have more than one table which is related. The schema represents the relationship between these tables.



There are three levels of the schema. The three levels of the database schema are defined according to the three levels of data abstraction.

- View Schema
- Logical Schema
- > Physical Schema

View Schema or External Schema:

View Schema defines the design of the database at the view level of the data abstraction. It defines how an end-user will interact with the database system. There are many views schema for a database system. Each view schema defines the view of data for a particular group of people. It shows only those data to a view group in which they are interested and hides the remaining details from them.

Logical Schema or Conceptual Schema:

Logical Schema defines the design of the database at the conceptual level of the data abstraction. At this level, we define the entities, attributes, constraints, relationships, etc. and how their relationship would be logically implemented. The programmers and the DBA work at this level and they do all these implementations.

External/Conceptual Mapping is done between the external schema and logical schema to transform the request from an external schema to the conceptual schema. This mapping relates the external schema with the logical schema.

Physical Schema

This is the design of the database defined at the physical level of data abstraction. This tells how the data will be stored in the storage device. The data can be stored in the form of file, indices etc. It totally depends on the database administrator (DBA) that how he wants to store the data and what are the storage structure that has to be used. It is often hidden from the programmer and the users how the data is stored here. For example, if we

are storing the data of employee in the database, this file can be stored anywhere and a user doesn't have any knowledge of it.

Conceptual/Internal Mapping is done between the conceptual schema and physical schema to transform the request from conceptual schema to physical schema. This mapping relates the conceptual schema with the internal schema. It is done so that if any changes are done in the external storage structure, then the mapping is changed accordingly so that the conceptual level is not affected.

There can be many external schemas for a database system but only one conceptual and physical schema.

College Management System **SCHEMA DIAGRAM** Student Roll no Current_Address Profile Admission Course Code Student Name Teacher Teacher_name Phone_number Hire_date Teacher id Email Subjects Subject_Name Credit Points Subject Code Course Code Semester Courses Course_Name Years Course Code Semesters TimeTable Room_No Class Name Timing Subject Code Day Class_Result Roll no Student Name Course Code Obtained_Marks Total_Marks Subject Code Semester 2 **8** 9 8 8 14

4.3 E-R DESIGN

E-R Model is a popular high level conceptual data model. This model and its variations are frequently used for the conceptual design of database application and many database design tools employ its concept.

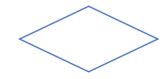
A database that confirms to an E-R diagram can be represented by a collection of tables in the relational system. The mapping of E-R diagram to the entities are:

- Attributes
- Relations
 - o Many-to-many
 - o Many-to-one
 - o One-to-many
 - o One-to-one
- Weak entities
- Sub-type and super-type

The entities and their relationships between them are shown using the following conventions.

An entity is shown in rectangle.	

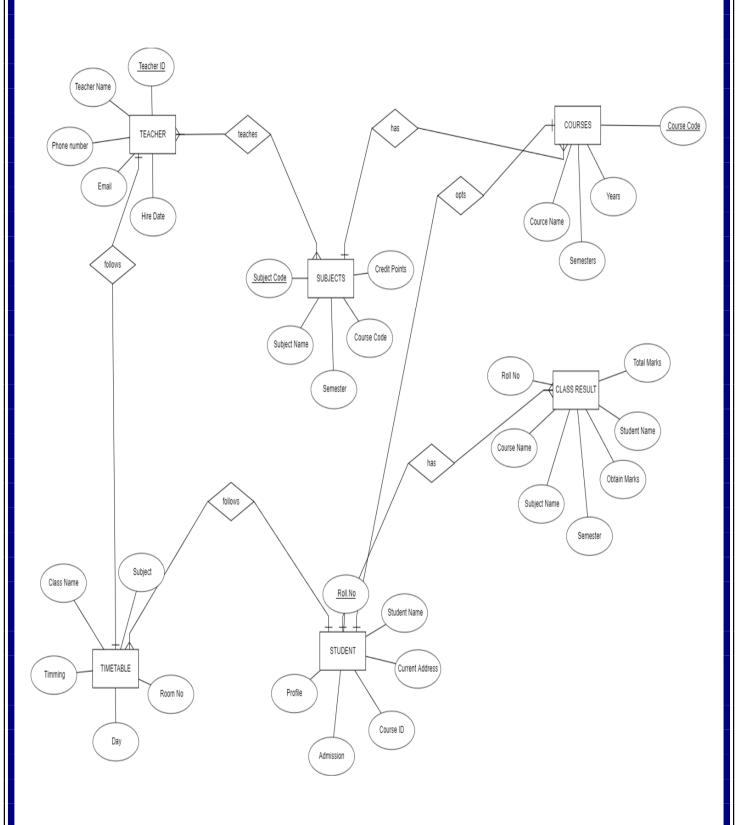
A diamond represents the relationship among number of entities.



The attributes shown as ovals are connected to the entities or relationship by lines.



ENTITY-RELATIONSHIP DIAGRAM



CHAPTER 5 IMPLEMENTATION

5.1 IMPLEMENTATION METHODOLOGY

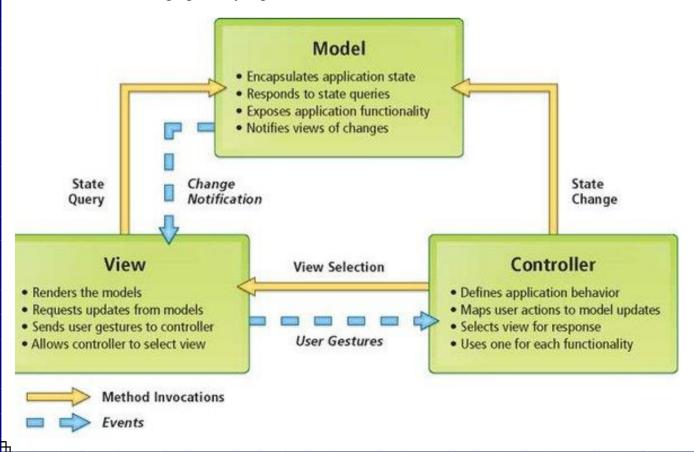
Model View Controller or MVC as it is popularly called, is a software design pattern for developing web applications. A Model View Controller pattern is made up of the following three parts:

Model - The lowest level of the pattern which is responsible for maintaining data.

View - This is responsible for displaying all or a portion of the data to the user.

Controller - Software Code that controls the interactions between the Model and View.

MVC is popular as it isolates the application logic from the user interface layer and supports separation of concerns. Here the Controller receives all requests for the application and then works with the Model to prepare any data needed by the View. The View then uses the data prepared by the Controller to generate a final presentable response. The MVC abstraction can be graphically represented as follows.



5.2 SCREENSHOTS

Teacher Info table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	teacher_id 🔑	int(11)			No	None		AUTO_INCREMENT
2	first_name	varchar(30)	latin1_swedish_ci		No	None		
3	middle_name	varchar(30)	latin1_swedish_ci		No	None		
4	last_name	varchar(30)	latin1_swedish_ci		No	None		
5	father_name	varchar(50)	latin1_swedish_ci		No	None		
6	email	varchar(30)	latin1_swedish_ci		No	None		
7	phone_no	varchar(11)	latin1_swedish_ci		No	None		
8	profile_image	blob			No	None		
9	teacher_status	varchar(10)	latin1_swedish_ci		No	None		
10	application_status	varchar(10)	latin1_swedish_ci		No	None		
11	dob	varchar(15)	latin1_swedish_ci		No	None		
12	other_phone	varchar(11)	latin1_swedish_ci		No	None		
13	gender	varchar(10)	latin1_swedish_ci		No	None		
14	matric_complition_date	varchar(15)	latin1_swedish_ci		No	None		
15	matric_certificate	blob			No	None		
16	fa_complition_date	varchar(15)	latin1_swedish_ci		No	None		
17	fa_certificate	blob			No	None		

Teacher Attendance table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	attendance_id 🔑	int(11)			No	None		AUTO_INCREMENT
2	teacher_id	varchar(30)	latin1_swedish_ci		No	None		
3	attendance	int(11)			No	None		
4	attendance_date	varchar(11)	latin1_swedish_ci		No	None		

Student Info table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	roll_no 🔑	varchar(20)	latin1_swedish_ci		No	None		
2	first_name	varchar(30)	latin1_swedish_ci		No	None		
3	middle_name	varchar(30)	latin1_swedish_ci		No	None		
4	last_name	varchar(30)	latin1_swedish_ci		No	None		
5	father_name	varchar(30)	latin1_swedish_ci		No	None		
6	email	varchar(30)	latin1_swedish_ci		No	None		
7	mobile_no	varchar(11)	latin1_swedish_ci		No	None		
8	course_code	varchar(11)	latin1_swedish_ci		No	None		
9	semester	int(11)			No	None		
10	profile_image	varchar(100)	latin1_swedish_ci		No	None		
11	prospectus_issued	varchar(10)	latin1_swedish_ci		No	None		
12	prospectus_amount	varchar(10)	latin1_swedish_ci		No	None		
13	applicant_status	varchar(20)	latin1_swedish_ci		No	None		
14	application_status	varchar(20)	latin1_swedish_ci		No	None		
15	dob	varchar(10)	latin1_swedish_ci		No	None		
16	other_phone	varchar(11)	latin1_swedish_ci		No	None		

Class Result table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	class_result_id 🔑	int(11)			No	None		AUTO_INCREMENT
2	roll_no	varchar(30)	latin1_swedish_ci		No	None		
3	course_code	varchar(30)	latin1_swedish_ci		No	None		
4	subject_code	varchar(10)	latin1_swedish_ci		No	None		
5	subject_title	varchar(50)	latin1_swedish_ci		No	None		
6	semester	varchar(11)	latin1_swedish_ci		No	None		
7	total_marks	varchar(11)	latin1_swedish_ci		No	None		
8	obtain_marks	varchar(11)	latin1_swedish_ci		No	None		
9	result_date	varchar(20)	latin1_swedish_ci		No	None		

Subjects table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	subject_code 🔑	varchar(10)	latin1_swedish_ci		No	None		
2	subject_name	varchar(50)	latin1_swedish_ci		No	None		
3	course_code	varchar(10)	latin1_swedish_ci		No	None		
4	semester	int(10)			No	None		
5	credit_points	int(5)			No	None		

Courses table

#	Name	Туре	Collation	Attributes	Null	Default	Comments
1	course_code 🔑	varchar(10)	latin1_swedish_ci		No	None	
2	course_name	varchar(50)	latin1_swedish_ci		No	None	
3	no_of_semesters	varchar(10)	latin1_swedish_ci		No	None	
4	no_of_years	int(10)			No	None	

Login table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	ID 🔑	int(11)			No	None		AUTO_INCREMENT
2	user_id	varchar(30)	latin1_swedish_ci		No	None		
3	Password	varchar(30)	latin1_swedish_ci		No	None		
4	Role	varchar(10)	latin1_swedish_ci		No	None		
5	account	varchar(20)	latin1_swedish_ci		No	None		

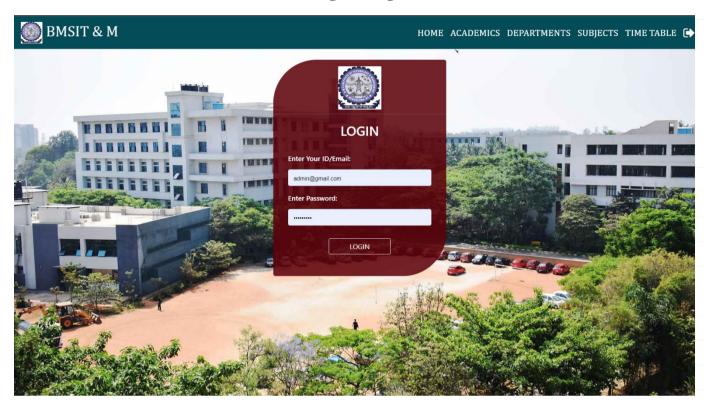
Time Table table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	int(11)			No	None		AUTO_INCREMENT
2	course_code	varchar(10)	latin1_swedish_ci		No	None		
3	semester	int(11)			No	None		
4	timing_from	varchar(10)	latin1_swedish_ci		No	None		
5	timing_to	varchar(10)	latin1_swedish_ci		No	None		
6	day	varchar(20)	latin1_swedish_ci		No	None		
7	subject_code	varchar(20)	latin1_swedish_ci		No	None		
8	room_no	int(11)			No	None		

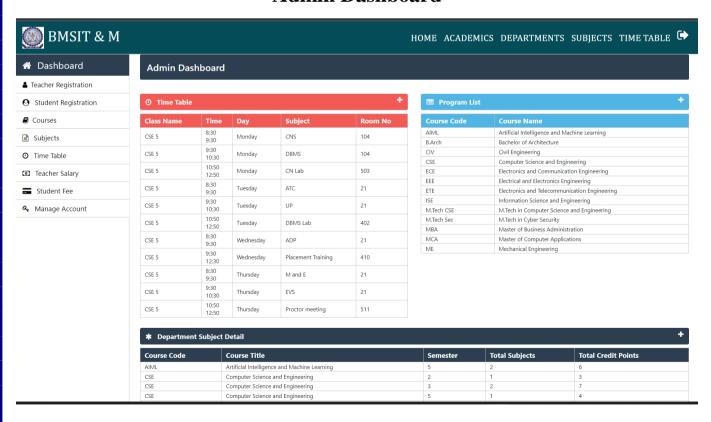
Student Attendance table

#	Name	Туре	Collation	Attributes	Null	Default	Comments
1	attendance_id	int(5)			No	None	
2	course_code	varchar(10)	latin1_swedish_ci		No	None	
3	subject_code	varchar(10)	latin1_swedish_ci		No	None	
4	semester	int(5)			No	None	
5	student_id	varchar(20)	latin1_swedish_ci		No	None	
6	attendance	int(20)			No	None	
7	attendance_date	varchar(20)	latin1_swedish_ci		No	None	

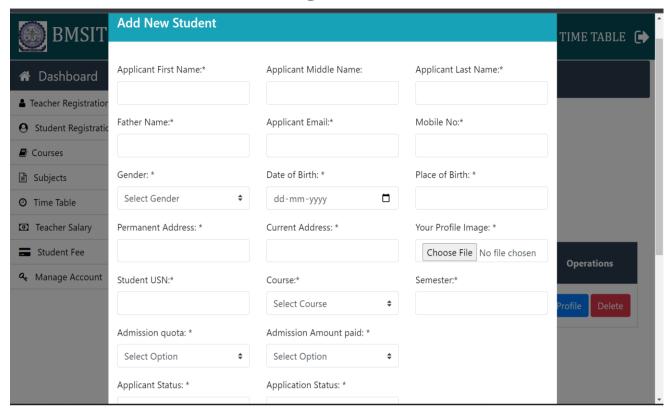
Login Page



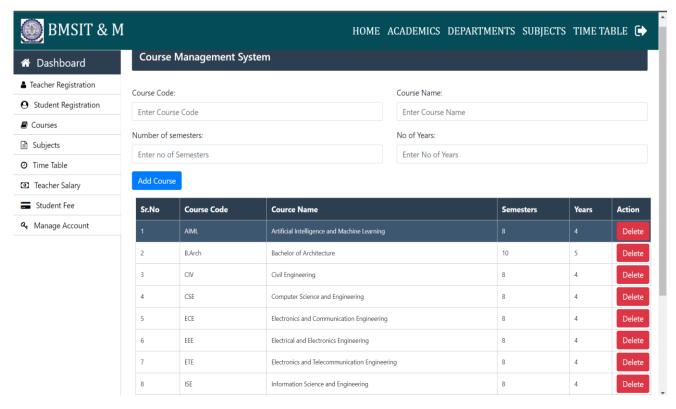
Admin Dashboard



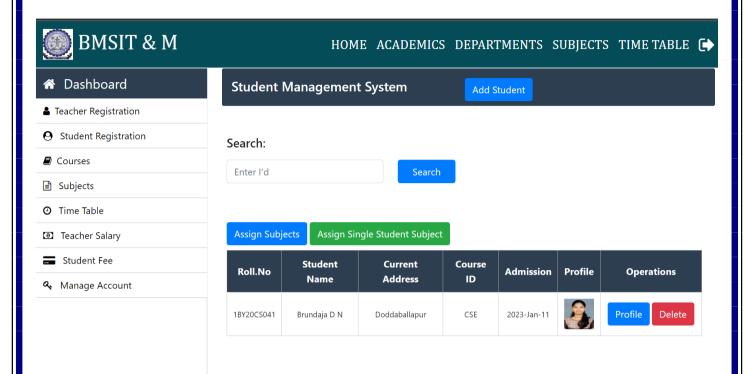
Student Registration Form



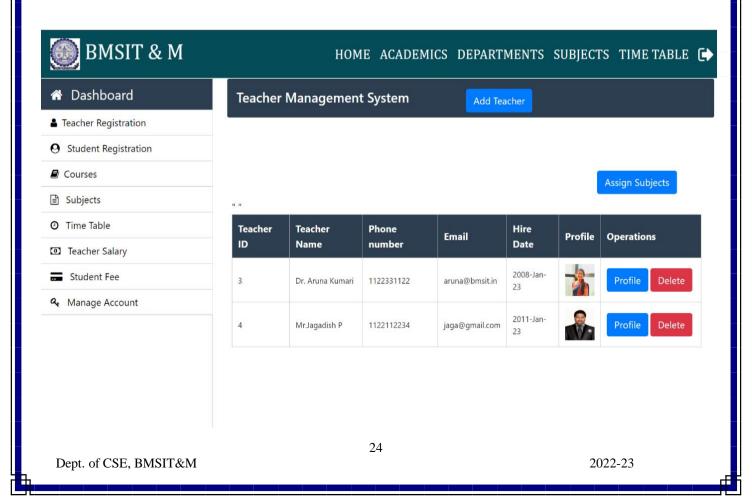
Course Management



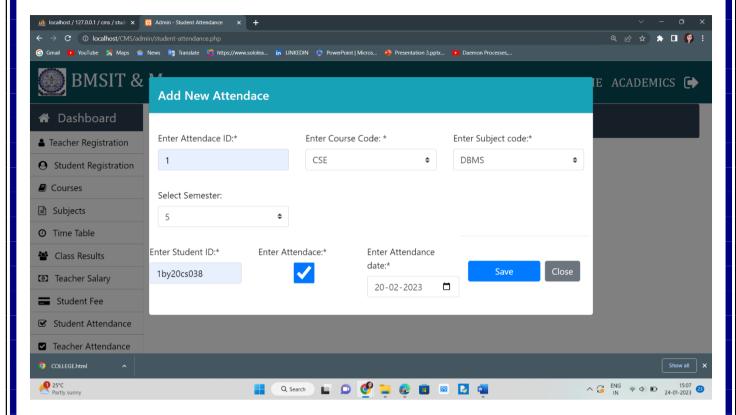
Student Management



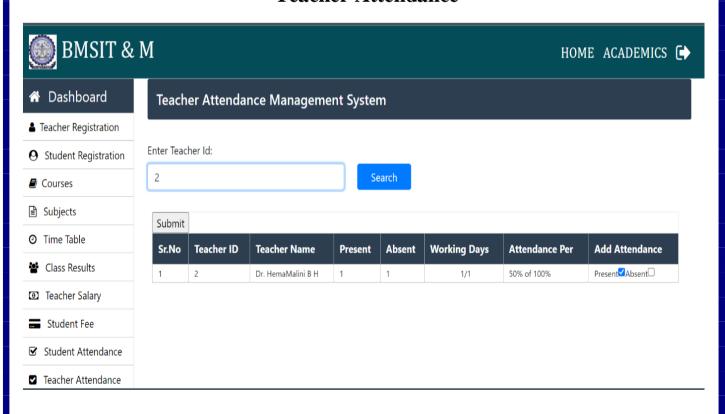
Teacher Management



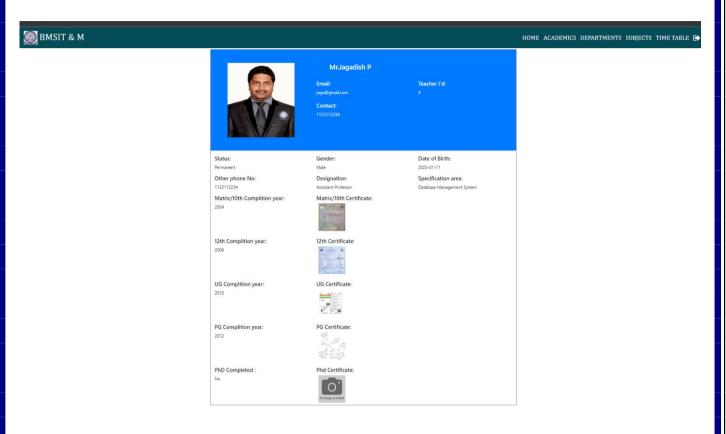
Student Attendance



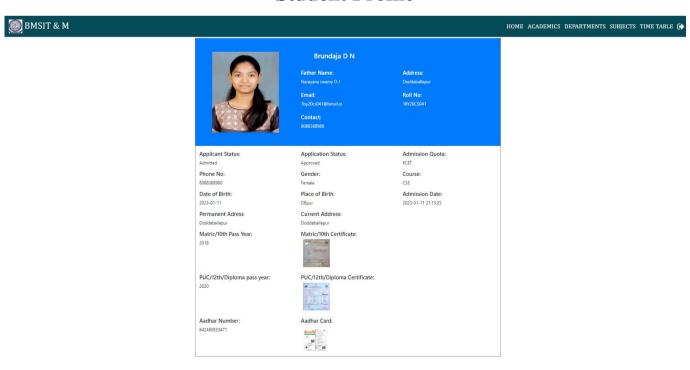
Teacher Attendance



Teacher Profile



Student Profile



CHAPTER 6 CONCLUSION

The project entitled as **College Management System** is the system that deals with the issues related to a particular institution.

- This project is successfully implemented with all the features mentioned in system requirements specification.
- ➤ The application provides appropriate information to users according to the chosen service.
- ➤ The project is designed keeping in view the day-to-day problems faced by a college.
- ➤ Deployment of our application will certainly help the college to reduce unnecessary wastage of time in personally going to each department for some information.

Awareness and right information about any college is essential for both the development of student as well as faculty. So, this serves the right purpose in achieving the desired requirements of both the communities.

CHAPTER 7 FUTURE ENHANCEMENT

- > Online examination module would be introduced to conduct online examination.
- > Scheduling of the staff. i.e., time table setting of the staff
- > Further, the faculty can upload the videos of their lectures on to this site and students who had missed those classes can view those videos.

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