# College Admission Management System

**A MINI-PROJECT REPORT**

**Submitted By**


**RATHINAVEL T 240701423**

**SHARUKESH D 240701490**


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**IN**

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**RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI**

**An Autonomous Institute**

**CHENNAI**


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# BONAFIDE CERTIFICATE

Certified that this project **“College Admission Management System”** is the Bonafide work of **“RATHINAVEL, SHARUKESH”** who carried out the project work under my supervision.

**SIGNATURE**

**MRS. S. SATHIYAVATHI**

**ASSISTANT PROFESSOR SG**

Dept. of Computer Science and Engg,

Rajalakshmi Engineering College

Chennai

This mini project report is submitted for the viva voce examination to be held on _____

**INTERNAL EXAMINER** **EXTERNAL EXAMINER**

# ABSTRACT

The **College Admission Management System (CAMS)** is a desktop application developed in Java using Swing for the Graphical User Interface (GUI) and JDBC for robust **MySQL database connectivity**. The primary goal of this system is to **modernize and streamline the traditional, paper-intensive admission process**, replacing manual data entry, physical document handling, and complex file management with a centralized, digital solution.

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**1. RATHINAVEL T**
**2. SHARUKESH D**

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# CHAPTER 1

# INTRODUCTION

## 1.1 INTRODUCTION

The College Admission Management System is a desktop application designed to digitize and automate the traditional, manual process of college admissions. Developed using Java Swing for the GUI and utilizing JDBC for robust connectivity to a MySQL database, the system replaces paper-based applications, manual data verification, and scattered file storage with a centralized digital platform. It enforces a strict role-based access control (RBAC) model for the Admin, Faculty, and Student users, ensuring data integrity and security across all functions.

## 1.2 SCOPE OF THE WORK

The scope of this work is confined to the core admission lifecycle, including:

- User Authentication: Secure login for Admin, Faculty, and Student roles.
- Application Submission: A dedicated portal for students to submit new admission applications.
- Data Management: Centralized storage, retrieval, and updating of all student application records in the database.
- Role-Specific Views: Providing restricted access to views and functionalities based on user role (e.g., Admin/Faculty can view all records; Student can only submit).
- Data Validation: Basic validation on the front end before database insertion.

## 1.3 PROBLEM STATEMENT

The existing manual college admission process is inefficient, prone to errors, and labor-intensive. Key problems include:

- Time Consumption: High administrative overhead due to manual data sorting, filing, and verification.
- Data Redundancy and Error: Inconsistency and errors arising from repeated manual data entry across different departments.

- Lack of Centralization: Difficulty in generating real-time admission reports or accessing student data quickly across different staff roles (Admin/Faculty).

## 1.4 AIM AND OBJECTIVES OF THE PROJECT

- **Aim:**

  To develop a secure, efficient, and user-friendly College Admission Management System that digitizes the entire application and management workflow.

- **Objectives:**
  - To implement a three-tier **Role-Based Access Control** (Admin, Faculty, Student).
  - To provide a seamless **Graphical User Interface (GUI)** for data input and viewing using Java Swing.
  - To establish reliable **database connectivity** (JDBC with MySQL) for permanent record storage.
  - To ensure the system is capable of managing and displaying student records to relevant staff (Admin/Faculty) in a unified view.

# CHAPTER 2

# SYSTEM SPECIFICATIONS

## 2.1 HARDWARE SPECIFICATIONS

Processor : Intel Core i3

RAM : 4 GB

Hard Disk : 10 GB

## 2.2 SOFTWARE SPECIFICATIONS

| | | |
|---|---|---|
| Operating System | : | WINDOWS 10 |
| Front – End | : | JAVA |
| Back - End | : | MY SQL |
| Language | : | JAVA,SQL |

# CHAPTER 3

# MODULE DESCRIPTION

The system is divided into three primary modules, strictly governed by the login role:

### 3.1. LOGIN MODULE

- **Functionality:** Handles user authentication using hardcoded credentials and a selected role (Admin, Faculty, Student).
- **Output:** Determines the currentAccessLevel and routes the user to the appropriate starting view (showDashboard() method).

### 3.2. STUDENT ADMISSION MODULE (Student Role Access Only)

- **Panel:** NewAdmissionPanel.java
- **Functionality:** Allows a student to enter all required personal and academic details (Name, Course, Mobile, DOB, etc.) and submit the application data directly to the MySQL database.
- **Key Feature:** The UI (labels and button text) dynamically changes via the updateViewForRole() method to reflect a "Submission Form" rather than an "Admission Form."

### 3.3. VIEW/RECORDS MANAGEMENT MODULE (Admin & Faculty Role Access Only)

- **Panel:** ViewAllPanel.java
- **Functionality:** Displays all admitted student records in a dynamic, scrollable J Table.
- **Key Feature:** The load Student data() method ensures real-time data retrieval from the database every time the view is accessed. This is the primary dashboard for both Admin and Faculty.

### 3.4. APPLICATION DASHBOARD MODULE (Core)

- **Class:** AdmissionDashboard.java
- **Functionality:** The main J Frame container managing the application state, including Card Layout navigation, J MenuBar visibility control (updateMenuVisibility()), and centralized security checks (showPanel()

# CHAPTER 4

# SAMPLE CODING

## SAMPLE CODING 1

```
CREATE DATABASE college_admission_db;
USE college_admission_db;

1. Users Table (For Admin Login)
CREATE TABLE users (
    user_id INT AUTO_INCREMENT PRIMARY KEY,
    username VARCHAR(50) NOT NULL UNIQUE,
    password_hash VARCHAR(255) NOT NULL,
    role VARCHAR(20) NOT NULL DEFAULT 'admin' -- 'admin', 'counselor', etc.
);
INSERT INTO users (username, password_hash, role) VALUES
('admin', 'admin', 'admin');

2. Students Table (Stores permanent student bio-data)
CREATE TABLE students (
    student_id INT AUTO_INCREMENT PRIMARY KEY,
    first_name VARCHAR(100) NOT NULL,
    last_name VARCHAR(100) NOT NULL,
    email VARCHAR(100) UNIQUE NOT NULL,
    phone VARCHAR(15),
    date_of_birth DATE
);
```

## SAMPLE CODING 2

3. Applications Table (Stores course and status data)

```
CREATE TABLE applications (
   application_id INT AUTO_INCREMENT PRIMARY KEY,
   student_id INT NOT NULL,
   course_applied VARCHAR(100) NOT NULL,
   marks_10th DECIMAL(5, 2), -- Example: 95.50
   marks_12th DECIMAL(5, 2), -- Example: 88.00
   application_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
   status ENUM('PENDING', 'ACCEPTED', 'REJECTED') NOT NULL DEFAULT
'PENDING',
   FOREIGN KEY (student_id) REFERENCES students(student_id)
);
```

4. Add the mobile_no column

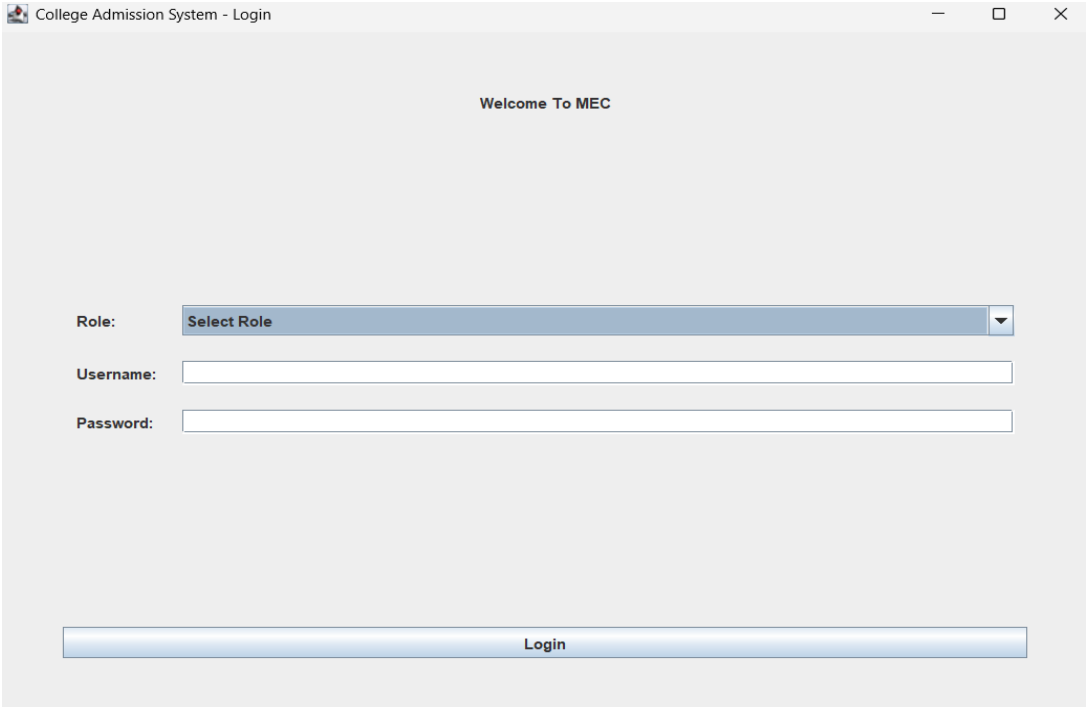
```
ALTER TABLE students
ADD COLUMN mobile_no VARCHAR(15);
```

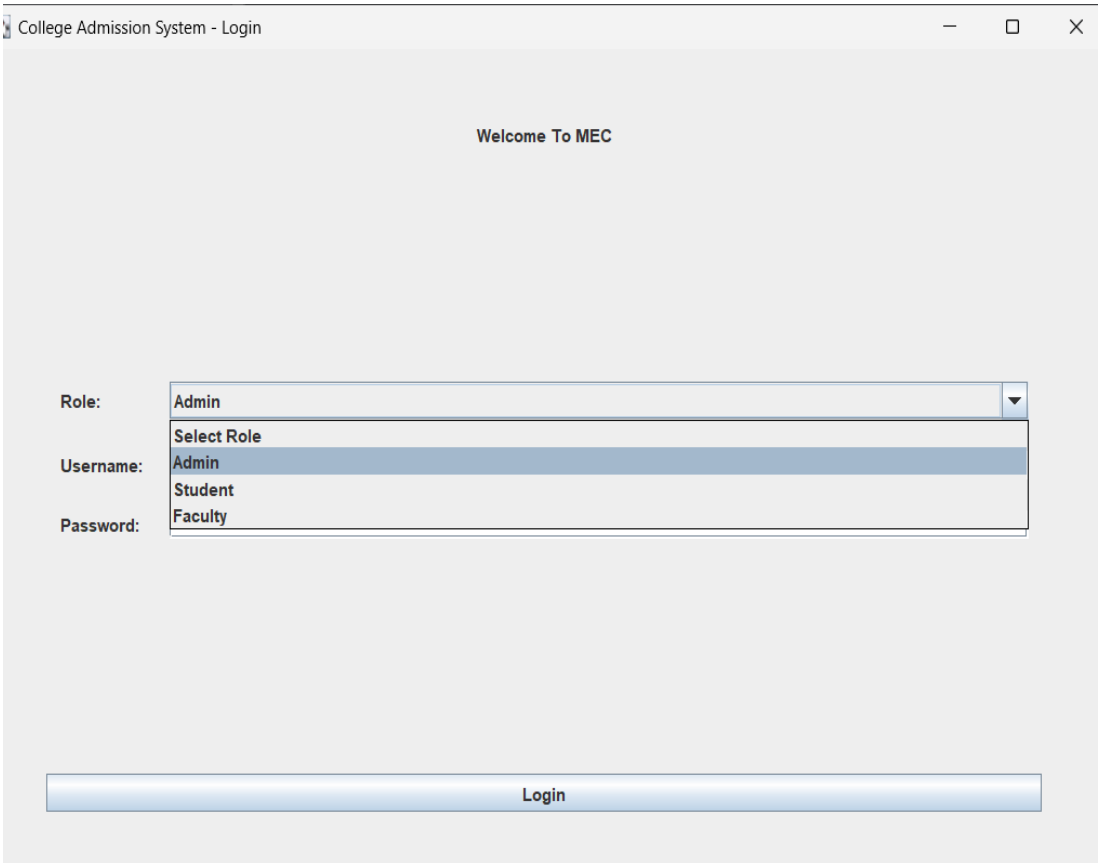
5. Add the dob (Date of Birth) column

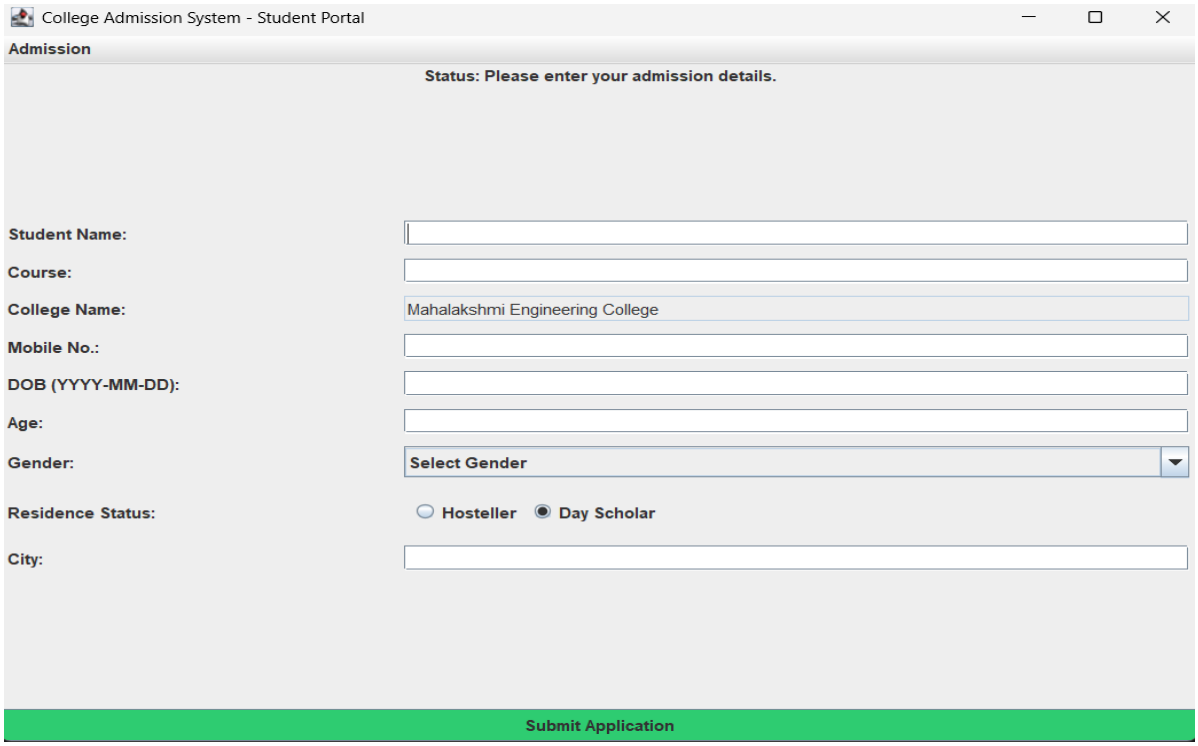
```
ALTER TABLE students
ADD COLUMN dob DATE;
```

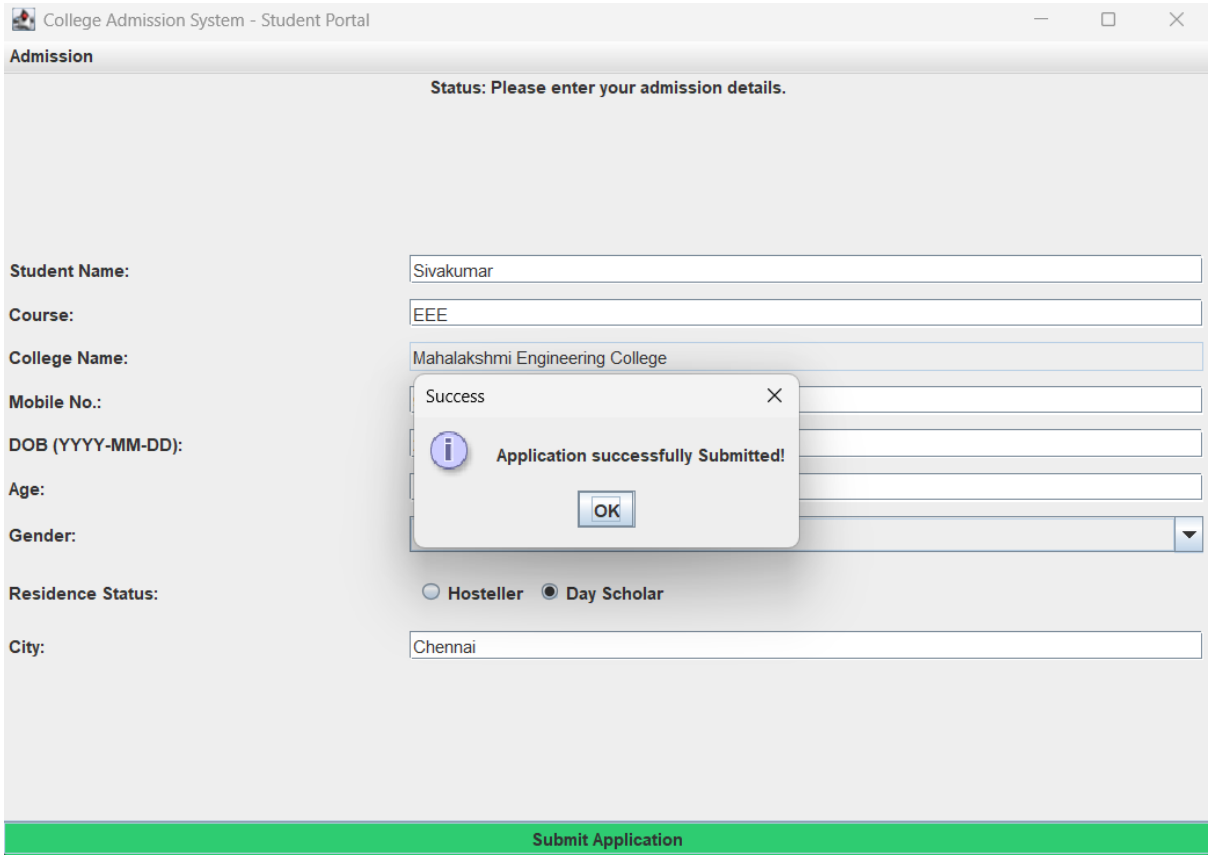
# CHAPTER 5

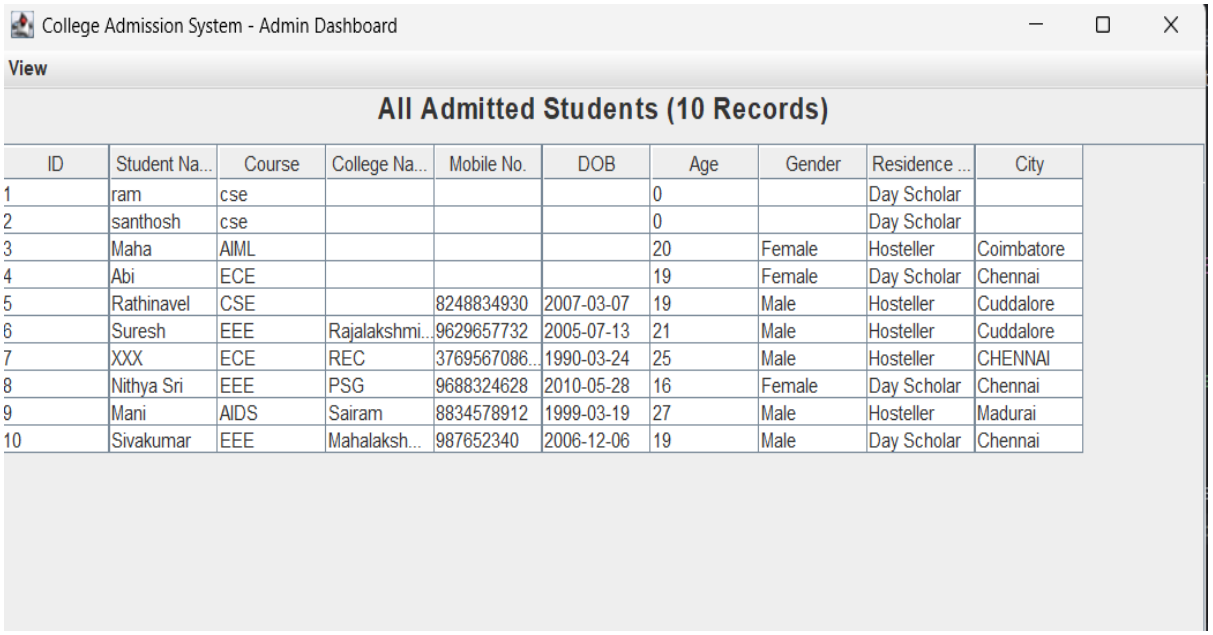
## OUTPUT SCREEN SHOTS




College Admission System - Student Portal
Admission
Status: Please enter your admission details.
Student Name:
Course:
College Name:
Mahalakshmi Engineering College
Mobile No.:
DOB (YYYY-MM-DD):
Age:
Gender:
Select Gender
Residence Status:
Hosteller
Day Scholar
City:
Submit Application


College Admission System - Student Portal
Admission
Status: Please enter your admission details.
Student Name:
Sivakumar
Course:
EEE
College Name:
Mahalakshmi Engineering College
Mobile No.:
DOB (YYYY-MM-DD):
Age:
Gender:
Residence Status:
Hosteller
Day Scholar
City:
Chennai
Success
Application successfully Submitted!
OK
Submit Application




| ID | Student Na... | Course | College Na... | Mobile No. | DOB | Age | Gender | Residence ... | City |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ram | cse | | | | 0 | | Day Scholar | |
| 2 | santhosh | cse | | | | 0 | | Day Scholar | |
| 3 | Maha | AIML | | | | 20 | Female | Hosteller | Coimbatore |
| 4 | Abi | ECE | | | | 19 | Female | Day Scholar | Chennai |
| 5 | Rathinavel | CSE | | 8248834930 | 2007-03-07 | 19 | Male | Hosteller | Cuddalore |
| 6 | Suresh | EEE | Rajalakshmi... | 9629657732 | 2005-07-13 | 21 | Male | Hosteller | Cuddalore |
| 7 | XXX | ECE | REC | 3769567086... | 1990-03-24 | 25 | Male | Hosteller | CHENNAI |
| 8 | Nithya Sri | EEE | PSG | 9688324628 | 2010-05-28 | 16 | Female | Day Scholar | Chennai |
| 9 | Mani | AIDS | Sairam | 8834578912 | 1999-03-19 | 27 | Male | Hosteller | Madurai |
| 10 | Sivakumar | EEE | Mahalaksh... | 987652340 | 2006-12-06 | 19 | Male | Day Scholar | Chennai |

# CHAPTER 6

## CONCLUSION AND FUTURE ENHANCEMENT

### CONCLUSION

The College Admission Management System successfully addressed the primary problems of manual admission by providing a secure, centralized, and role-based digital platform. It demonstrated effective integration of Java Swing for a responsive desktop GUI and robust MySQL database management via JDBC. The project meets all defined aims and objectives, delivering a streamlined workflow for the Admin, Faculty, and Student users.

### FUTURE ENHANCEMENT

Potential features for future versions include:

- Search and Filter Functionality: Adding search bars and advanced filtering options to the View All Panel for quick record lookup (e.g., filtering by course, city, or status).
- Real-Time Status Tracking: Implementing a separate table/portal where students can log in and check the status of their application (e.g., Pending, Approved, Rejected).
- Report Generation: Integrating a library to generate printable admission reports, statistical summaries, or student lists.
- Password Encryption: Implementing hashing (e.g., using SHA-256) for secure storage of user passwords instead of hardcoded strings.

# CHAPTER 7

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