## STUDENT MANAGEMENT SYSTEM

#### A PROJECT REPORT

Submitted by

## JHA SHUBHAMKUMAR (ET23MTCA020) SHAH RUCHITKUMAR (ET23MTCA060) SOLANKI KHUSHALKUMAR (ET23MTCA062)

**Under the Guidance Of** Prof. Preksha Parmar

In fulfillment for the subject Software Project-1 (MTCA16106)

**Master of Computer Application** 

At



Sarvajanik College Of Engineering & Technology, Surat
Sarvajanik University, Surat

December, 2023



#### Sarvajanik Education Society

# Sarvajanik College of Engineering & Technology, Surat. Master of Computer Application Department Academic Year 2023-24



Date: 22/12/2023

#### **CERTIFICATE**

This is to certify that the project entitled "STUDENT MANAGEMENT SYSTEM" has been submitted by JHA SHUBHAMKUMAR (ET23MTCA020), SHAH RUCHITKUMAR (ET23MTCA060), SOLANKI KHUSHALKUMAR (ET23MTCA062) towards fulfillment for the subject Software Project – I (MTCA16106) in 1<sup>st</sup> Semester of MCA of Sarvajanik University, Surat during the academic year 2023-24.

Guide Name: Prof. Preksha Parmar	
(Guides' Signature)	Prof. Gayatri Kapadia Head, M.C.A. Department
Examiners' Signature:	
1	
2	

# Acknowledgement

We take this opportunity to express our sincere gratitude to all those who helped us in various capacities in undertaking this project and devising the report.

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JHA SHUBHAMKUMAR _	
SHAH RUCHITKUMAR _	
SOLANKI KHUSHALKUMAR	

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#### 1. Abstract

The Student Management System is a software project designed to streamline and enhance the efficiency of managing student information within an educational institution. This project aims to provide a robust solution for administrators and teachers to seamlessly handle various aspects of student data, including enrollment, academic records and personal details.

The system is designed with a modular approach, consisting of distinct modules to manage specific functionalities. The Student Data Module handles the creation and maintenance of student and teachers profiles, encompassing personal information and enrollment details. The Academic Records Module manages course details, students, teachers and fee payment records. The User Interface Module ensures a user-friendly experience for all students offering intuitive navigation and functionality. The system incorporates input validation mechanisms to ensure data integrity and system reliability.

This System involves the use of C programming language, with a focus on file handling for database management. This project seeks to provide a scalable and maintainable solution, allowing for future updates and enhancements. The Student Management System aims to optimize the process of managing student information, facilitating efficiency, accuracy, and ease of use within educational institutions.

In conclusion, the Student Management System is not only addresses fundamental data management needs but also enhances the overall educational ecosystem by incorporating advanced security and adaptability features. This holistic approach aims to optimize the efficiency, accuracy, and user experience within educational institutions, contributing to the continual improvement of academic processes and outcomes.

# 2. Software Specification

Operating system	<ul> <li>Microsoft windows 7 or above</li> <li>Ubuntu 16.04 LTS or above</li> <li>MacOS 12 or above</li> </ul>
Processor	➤ Intel i3 or higher
RAM	> 4GB or higher
Storage	> 128 GB or higher
Development Environment	> Dev C++, Turbo C or Visual Studio
Programming Language	➤ C OR C++

## 3. Scope & Objectives

The primary objective of the Student Management System is to store and maintain student and teacher's data efficiently through console-based application. This system aims to achieve operational excellence by providing a centralized platform for managing various activity of school or colleges through this application.

In this system real-time data updation is done into the files. The main goal of the Student Management System is to improve the accuracy and efficiency in the student records management.

The system is developed for Administration Staff, Teacher and Student to maintain records. The Administration Staff is the main user of this system. They can access all the data related to student and teachers and they can manipulate it according to their needs. They can manage course details, teacher's details, student details along with this an additional fee payment facility is also given in this application. In this System Teacher can add or update student marks which will be directly updated and can be viewed in student result section. The role authentication functionality is given in this system in which the teacher can add marks of students of their own department only. Teacher can't access the data of student who belongs to another department.

The goal of this system is to increase administrative efficiency by simplifying the data maintaining process.

# 4. Database Design

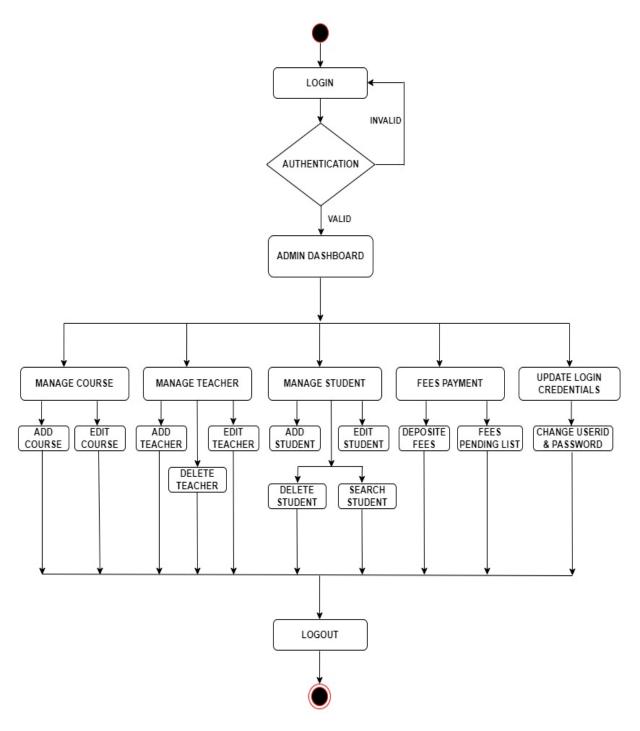
## 4.1 Use Case Diagram



[Fig. 4.1 Use Case Diagram]

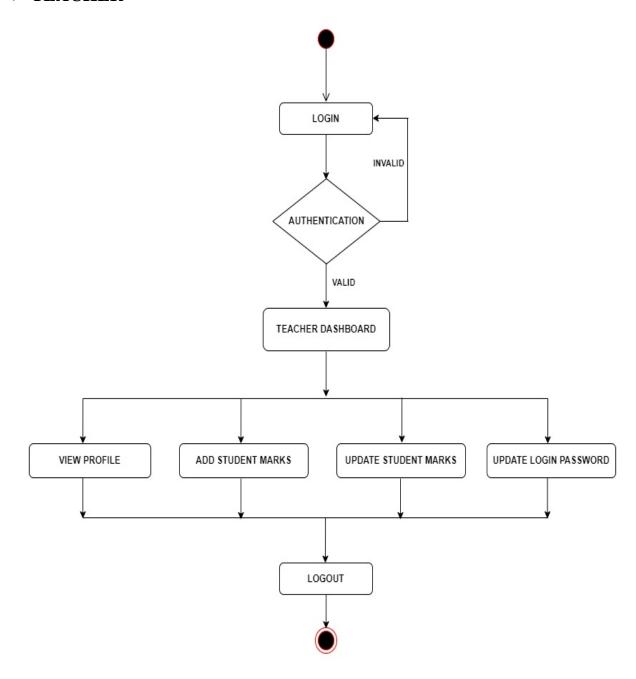
## 4.2 Activity Diagram

#### > ADMIN



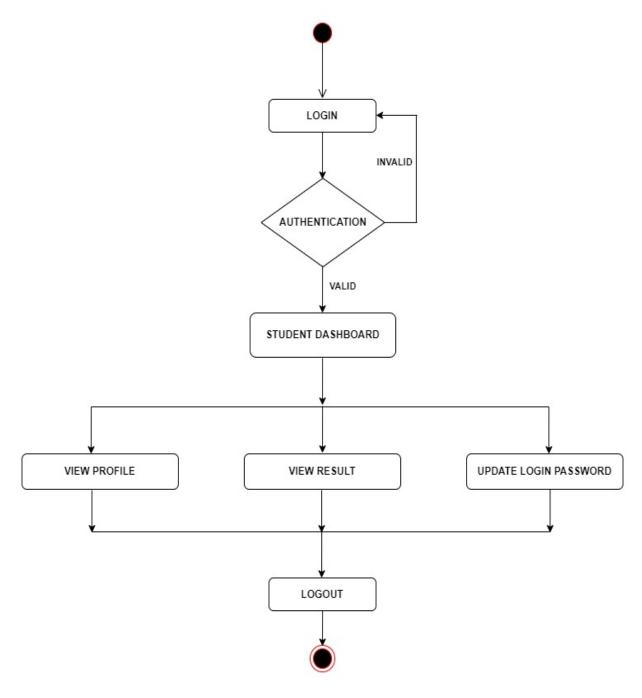
[Fig. 4.2.1 Admin Activity Diagram]

#### > TEACHER



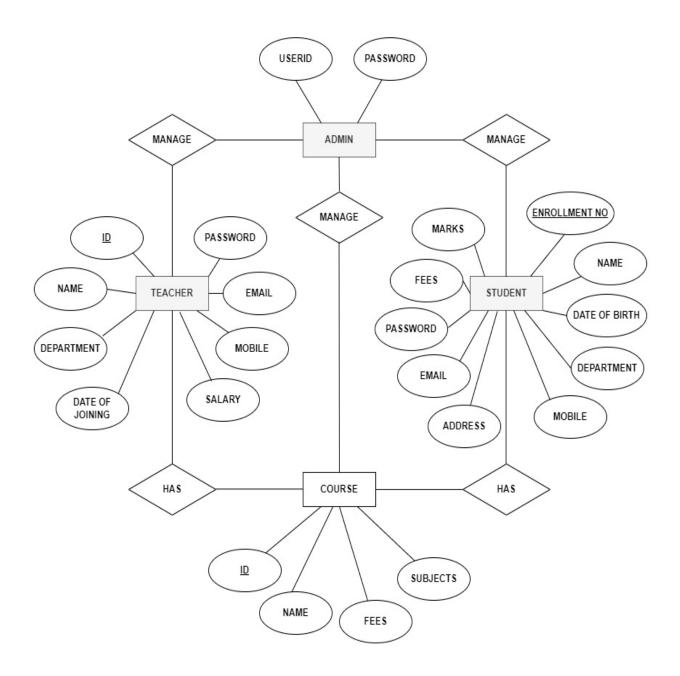
[Fig. 4.2.2 Teacher Activity Diagram]

## > STUDENT



[Fig. 4.2.3 Student Activity Diagram]

## 4.3 ER Diagram

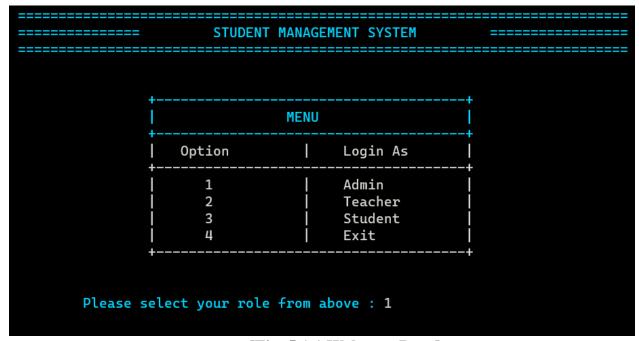


[Fig. 4.3 ER Diagram]

## 5. System Design

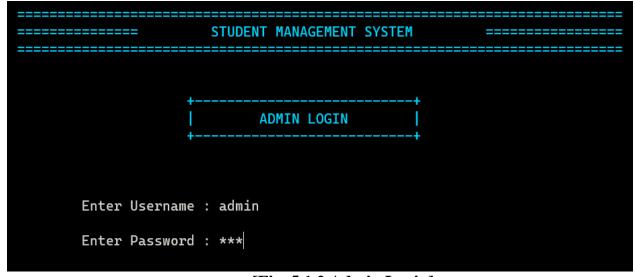
#### 5.1 Screenshot

### **Welcome Page**



[Fig. 5.1.1 Welcome Page]

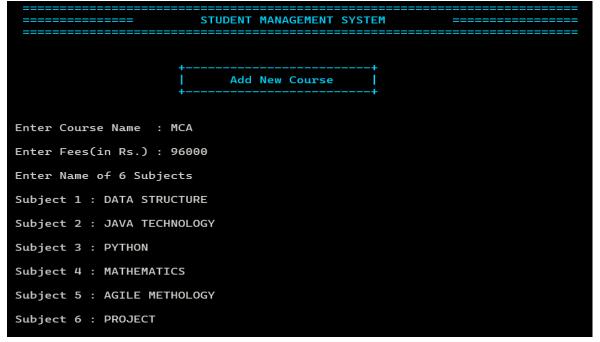
#### **Admin Login**



[Fig. 5.1.2 Admin Login]

```
STUDENT MANAGEMENT SYSTEM
                    ADMIN DASHBOARD
            No.
                         Options
             1
                  Add New Course
             2
                  Edit Course Details
             3
                  List of Courses
             4
                  Add New Teacher
             5
                  Edit Teacher Details
             6
                  List of Teachers
             7
                  Delete Teacher Details
             8
                  Add New Student
             9
                  Edit Student Details
            10
                  Search Student Details
                  List of Students
            11
            12
                  Delete Student Details
            13
                  Fees Payment
            14
                  Fees Pending List
                  Update Userid & Password
            15
            16
                | Exit
Enter your choice : 1
```

[Fig. 5.1.3 Admin Dashboard]



[Fig. 5.1.4 Add New Course]

```
Course ID
                                  1
         Course Name
                                  MCA
         Course Fees
                                  96000
         Subjects
         Subject 1
                                   DATA STRUCTURE
         Subject 2
                                   JAVA TECHNOLOGY
         Subject 3
                                   PYTHON
         Subject 4
                                   MATHEMATICS
         Subject 5
                                   AGILE METHOLOGY
         Subject 6
                                   PROJECT
Course added successfully !!
```

[Fig. 5.1.5 Course Added]

```
Course List
  Course ID
                                MCA
  Course Name
  Course Fees
                                96000
                                DATA STRUCTURE
JAVA TECHNOLOGY
  Subject 1
  Subject 2
Subject 3
                                PYTHON
  Subject 4
                                MATHEMATICS
  Subject 5
Subject 6
                                AGILE METHOLOGY
PROJECT
  Course ID
Course Name
                                2
BCA
  Course Fees
                                35000
  Subject 1
Subject 2
                                WEB DEVELOPMENT
                                C LANGUAGE
                                VB .NET
STATISTICS
  Subject 3
Subject 4
  Subject 5
                                DATA STRUCTURE
  Subject 6
                                PROJECT
List of Courses As on : 22-12-2023 17:10
```

[Fig. 5.1.6 Course List]

```
Add New Teacher
    (1) MCA
(2) BCA
Select Course From Above List : 1
Selected Course
                     MCA
Teacher's Name
                     MAYANK JAIN
Email
                     mayank@gmail.com
Mobile
                     9487545454
                     55000
Salary
Teacher added successfully !!
Teacher Login ID
                      mayank@gmail.com
Default Password
                      teacher
```

[Fig. 5.1.7 Add New Teacher]

```
Teacher's List
  Teacher ID
                            101
                            MAYANK JAIN
  Name
  Department
                            MCA
                           22-12-2023
9487545454
  Date of Joining
Mobile No.
  Email-id
                            mayank@gmail.com
  Password
                            teacher
  Salary
                            55000
                            102
  Teacher ID
  Name
                            PREKSHA PARMAR
  Department
                            MCA
  Date of Joining
Mobile No.
                            22-12-2023
7845451200
  Email-id
                            preksha@gmail.com
  Password
                            teacher
                            50000
  Salary
  Teacher ID
                            103
                            SHUBHAM JHA
  Name
  Department
                            BCA
  Date of Joining
                            22-12-2023
  Mobile No.
                            7383988791
                            shubham@gmail.com
  Email-id
  Password
                            teacher
  Salary
                            45000
List of Teachers As on : 22-12-2023 17:16
```

[Fig. 5.1.8 Teacher's List]

```
Enter Teacher's Id to Update : 104

Sorry ! No Teacher details found for above Teacher ID
```

[Fig. 5.1.9 Edit Teacher Details(Not Found)]

```
Edit Teacher Details
Enter Teacher's Id to Update : 103
          Teacher ID
                                103
          Name
                                SHUBHAM JHA
          Department
                                BCA
          Date of Joining :
                                22-12-2023
          Mobile No.
                                7383988791
          Email-id
                                shubham@gmail.com
          Salary
                                45000
Enter Teacher's New Name : SHUBHAMKUMAR JHA
Enter New Salary(in Rs.): 47000
Enter New Mobile No. : 7383988791
Enter New Email ID
                        : shubham@gmail.com
Teacher Details Updated Successfully !!
```

[Fig. 5.1.10 Edit Teacher Details]

```
Delete Teacher Details
Enter Teacher's ID to Delete : 104
                                104
          Teacher ID
          Name
                                TEST
          Department
                                BCA
          Date of Joining :
                                22-12-2023
          Mobile No.
                                4545456512
          Email-id
                                test@gmail.com
          Salary
                                12000
  Do you want to delete this teacher ? (Y/N): y
  Teacher details deleted for Teacher Id 104 .
```

[Fig. 5.1.11 Delete Teacher Details]

```
Add New Student
    (1) MCA
    (2) BCA
Select Course From Above List : 1
Selected Course
                            : MCA
                               KHUSHAL SOLANKI
Student Name
Email
                              khushal@gmail.com
                               7894512000
Mobile
Address
                               UTRAN SURAT
Date of Birth(dd-mm-yyyy)
                               01-01-2003
Student added successfully !!
Student Login ID :
                     khushal@gmail.com
Default Password
                     student
```

[Fig. 5.1.12 Add New Student]

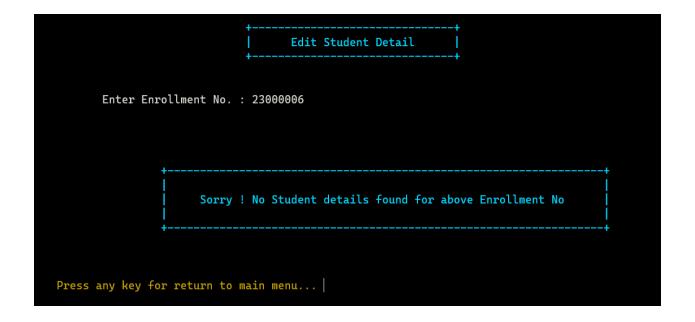
```
Student List
    (1) MCA
    (2) BCA
Select Course From Above List : 1
               Student List
         Enrollment No.
                                230000001
         Name
                                SHUBHAM JHA
         Date of Birth
                                07-10-2003
         Department
                                MCA
         Mobile No.
                                7383988791
                                shubham@gmail.com
         Email-id
         Fees Status
                                Unpaid
         Address
                                DINDOLI SURAT
         Enrollment No.
                                230000002
         Name
                                KHUSHAL SOLANKI
         Date of Birth
                                01-01-2003
         Department
                                MCA
         Mobile No.
                                7894512000
         Email-id
                                khushal@gmail.com
         Fees Status
                                Unpaid
                                UTRAN SURAT
         Address
         Enrollment No.
                                 230000003
         Name
                                RUCHIT SHAH
         Date of Birth
                                10-12-2004
         Department
                                MCA
         Mobile No.
                                8745125478
         Email-id
                                ruchit@gmail.com
         Fees Status
                                Unpaid
         Address
                                VARACHHA SURAT
       Total Student : 3
       List of Students As on : 22-12-2023 17:34
```

[Fig. 5.1.13 Student List (Coursewise)]

```
Student List
    (1) MCA
    (2) BCA
Select Course From Above List : 2
               Student List
          Enrollment No.
                                  230000004
         Name
                                  RAHUL SINGH
         Date of Birth
                                  01-01-2002
         Department
                                  BCA
         Mobile No.
                                  4875454845
          Email-id
                                  rahul@gmail.com
          Fees Status
                                  Unpaid
          Address
                                  GODADARA SURAT
         Enrollment No.
                                  230000005
         Name
                                  YOGESH PATIL
         Date of Birth
                                  01-10-2005
         Department
                                  BCA
         Mobile No.
                                  9874545454
         Email-id
                                  yogesh@gmail.com
          Fees Status
                                  Unpaid
          Address
                                  UDHNA SURAT
         Enrollment No.
                                  230000006
                                  YASH JAIN
         Name
         Date of Birth
                                  01-01-2001
         Department
         Mobile No.
                                  7845154578
         Email-id
                                  yash@gmail.com
          Fees Status
                                  Unpaid
          Address
                                  VESU SURAT
        Total Student : 3
       List of Students As on : 22-12-2023 17:38
```

[Fig. 5.1.14 Student List (Coursewise)]

```
Edit Student Detail
       Enter Enrollment No. : 230000001
                 Enrollment No.
                                         230000001
                 Name
                                         SHUBHAM JHA
                 Date of Birth :
                                         07-10-2003
                 Department
                                         MCA
                 Mobile No.
                                         7383988791
                 Email-id
                                         shubham@gmail.com
                 Fees Status
                                         Unpaid
                                         DINDOLI SURAT
                 Address
       Enter Student's Updated Name : SHUBHAM KUMAR
       Enter New Mobile No.
                               : 7383988791
       Enter New Email ID
                               : shubham@gmail.com
       New Address
                               : DINDOLI SURAT GJ
       Student Details Updated Successfully !!
Press any key for return to main menu...
```



[Fig. 5.1.15 Edit Student Details]

```
Search Student Details
                  Search By Enrollment No.
                  Search By Student Name
              (2)
       Select Option From Above : 1
      Enter Enrollment No : 230000001
                  Enrollment No.
                                         230000001
                 Name
                                         SHUBHAM KUMAR
                 Date of Birth
                                         07-10-2003
                  Department
                                         MCA
                 Mobile No.
                                         7383988791
                  Email-id
                                         shubham@gmail.com
                 Password
                                         student
                  Fees Status
                                         Unpaid
                  Address
                                         DINDOLI SURAT GJ
Press any key for return to main menu...
```

[Fig. 5.1.16 Search Student (Using Enrollment)]

```
Search Student Details
              (1)
                  Search By Enrollment No.
              (2) Search By Student Name
       Select Option From Above : 2
      Enter Student Name : SHUBHAM KUMAR
                 Enrollment No.
                                         230000001
                 Name
                                         SHUBHAM KUMAR
                 Date of Birth
                                         07-10-2003
                 Department
                 Mobile No.
                                         7383988791
                 Email-id
                                         shubham@gmail.com
                 Password
                                         student
                 Fees Status
                                         Unpaid
                                         DINDOLI SURAT GJ
                 Address
Press any key for return to main menu...
```

[Fig. 5.1.17 Search Student (Using Name)]

```
Delete Student Details
       Enter Enrollment No. : 230000006
                 Enrollment No.
                                         230000006
                                         YASH JAIN
                 Name
                 Date of Birth
                                         01-01-2001
                 Department
                                         BCA
                                         7845154578
                 Mobile No.
                 Email-id
                                         yash@gmail.com
                 Fees Status
                                         Unpaid
                                         VESU SURAT
                 Address
         Do you want to delete this Student ? (Y/N): y
         Student details deleted with Enrollment No. 230000006 .
Press any key for return to main menu...
```

```
Enter Enrollment No.: 230000009

Sorry! No Student details found for above Enrollment No.

Press any key for return to main menu...
```

[Fig. 5.1.18 Delete Student]

```
Enter Enrollment No.: 230000001

Enrollment No.: 230000001

Name : SHUBHAM KUMAR

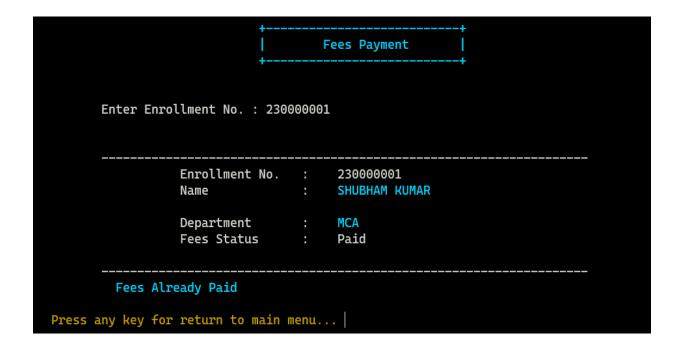
Department : MCA
Fees Status : Unpaid

Do You Want to Deposite Fees for Above Student ? (Y/N): Y

Fees Deposited Successfully !!

Press any key for return to main menu...
```

[Fig. 5.1.19 Fees Payment]



[Fig. 5.1.20 Check Fees Status]

```
Fees Pending List

(1) MCA
(2) BCA

Select Course From Above List: 1

Enrollment No Name

230000002 KHUSHAL SOLANKI
230000003 RUCHIT SHAH
230000007 NARENDRA MODI

Total Students: 3

Press any key for return to main menu...
```

```
Fees Pending List

(1) MCA
(2) BCA

Select Course From Above List : 2

Enrollment No Name

230000004 RAHUL SINGH
230000005 YOGESH PATIL

Total Students : 2

Press any key for return to main menu...
```

[Fig. 5.1.21 Fees Pending List]

```
Enter new username: admin

Enter new password: *******

Admin account updated successfully! Press any key to continue...
```

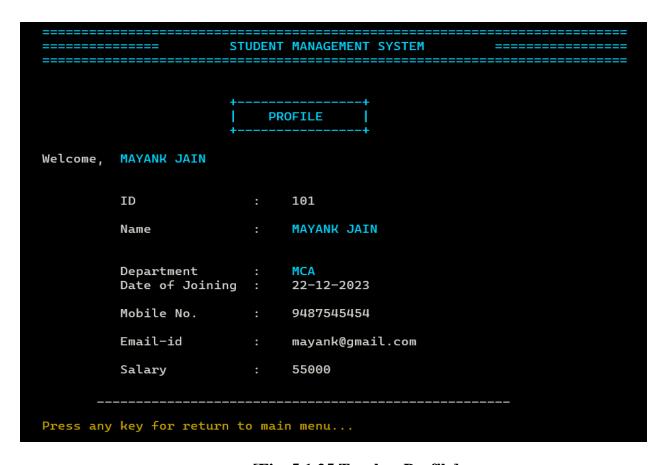
[Fig. 5.1.22 Update Admin Credentials]



[Fig. 5.1.23 Teacher Login]

```
STUDENT MANAGEMENT SYSTEM
                                        ==========
______
Welcome, MAYANK JAIN
                TEACHER DASHBOARD
             No.
                    Options
                  View Profile
             1
             2
                  Add Student Marks
             3
                  Change Password
             4
                  Exit
Please enter your choice : 1
```

[Fig. 5.1.24 Teacher Dashboard]



[Fig. 5.1.25 Teacher Profile]

```
ADD STUDENT MARKS
Enter Enrollment No : 230000003
   Enrollment No.
                             230000003
   Name
                             RUCHIT SHAH
   Department
                             MCA
                            - MARKS -
                                                    N/A
N/A
N/A
   DATA STRUCTURE
JAVA TECHNOLOGY
   PYTHON
   MATHEMATICS
AGILE METHOLOGY
PROJECT
   Do you want to proceed ? (Y/N): y
Enter Marks for below subjects(out of 100)
DATA STRUCTURE : 65
JAVA TECHNOLOGY
                       62
PYTHON: 72
MATHEMATICS
AGILE METHOLOGY
                       81
PROJECT : 91
Marks updated successfully
 Press any key for return to main menu...
```

[Fig. 5.1.26 Add Student Marks]

```
ADD STUDENT MARKS
Enter Enrollment No : 230000003
   Enrollment No.
                           230000003
   Name
                           RUCHIT SHAH
   Department
                           MCA
                          - MARKS -
    DATA STRUCTURE
                                               65
    JAVA TECHNOLOGY
                                               62
    PYTHON
                                                72
                                               45
    MATHEMATICS
    AGILE METHOLOGY
                                               81
    PROJECT
                                               91
   Do you want to proceed ? (Y/N): n
Student marks not updated....
Press any key for return to main menu...
```

[Fig. 5.1.27 Update Student Marks]

```
STUDENT MANAGEMENT SYSTEM

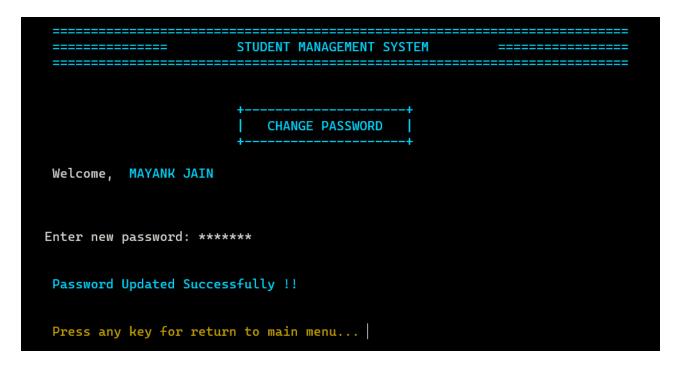
ADD STUDENT MARKS

Enter Enrollment No : 230000004

Sorry ! Above Enrollment No. doesn't exist in your Department

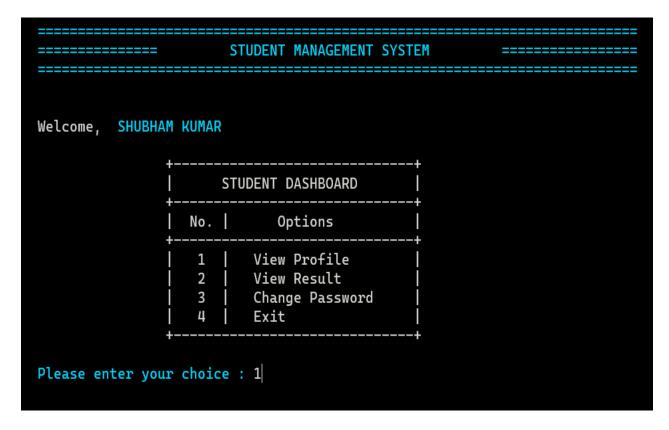
Press any key for return to main menu...
```

➤ Here Teacher can add marks of only that student which belongs to their department.



[Fig. 5.1.28 Change Login Password(Teacher)]

[Fig. 5.1.29 Student Login]



[Fig. 5.1.30 Student Dashboard]

```
STUDENT MANAGEMENT SYSTEM
                           PROFILE
Welcome, SHUBHAM KUMAR
         Enrollment No. :
                             230000001
         Name
                             SHUBHAM KUMAR
         Department
                             MCA
         Date of Birth
                             07-10-2003
         Mobile No.
                             7383988791
         Email-id
                             shubham@gmail.com
         Address
                             DINDOLI SURAT GJ
Press any key for return to main menu...
```

[Fig. 5.1.31 Student Profile]

```
STUDENT MANAGEMENT SYSTEM

CHANGE PASSWORD

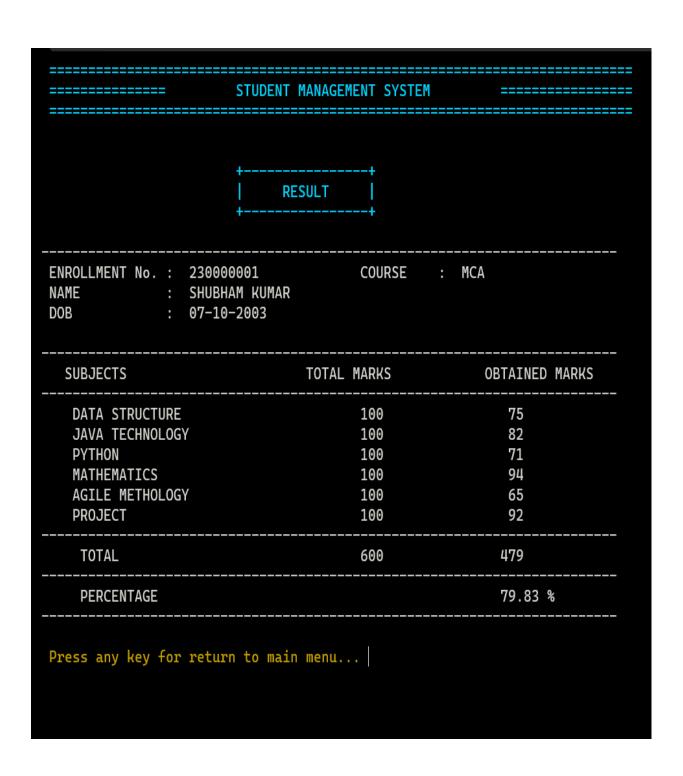
Welcome, SHUBHAM KUMAR

Enter new password: ******

Password Updated Successfully !!

Press any key for return to main menu...
```

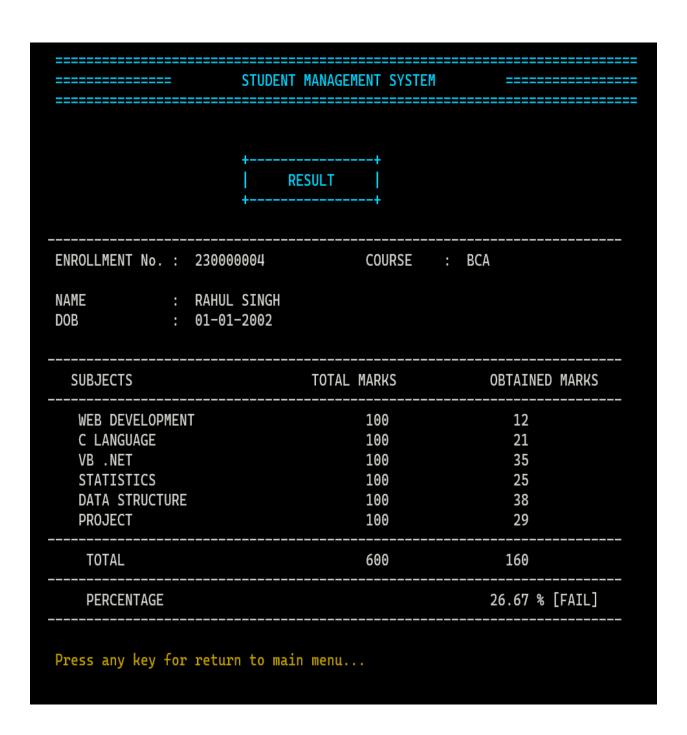
[Fig. 5.1.32 Change Login Password (Student)]



[Fig. 5.1.33 View Result (Pass)]



[Fig. 5.1.34 View Result (Not Declared)]



[Fig. 5.1.35 View Result (Fail)]

## 6. References

- <a href="https://www.cprogramming.com/">https://www.cprogramming.com/</a>
- <a href="https://www.youtube.com/watch?v=ZIe\_j8xAkU4">https://www.youtube.com/watch?v=ZIe\_j8xAkU4</a>
- <a href="https://www.geeksforgeeks.org/c-programming-language/">https://www.geeksforgeeks.org/c-programming-language/</a>
- <a href="https://www.w3schools.com/c/index.php">https://www.w3schools.com/c/index.php</a>