

PROJECT REPORT

STUDENT MANAGEMENT SYSTEM



Developed by

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ACKNOWLEDGEMENT

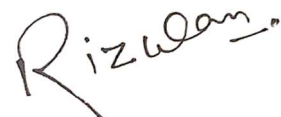
My acknowledgment extends to all those who teach me to code and prepare projects. I am thankful to all of my teachers who give me valuable and very important guidance and information to make this Project Report Successful.

I am grateful to other members of my study center and regional center, Patna for imparting to me the required & necessary training, information, guidelines, sympathy, and criticism which upgraded my programming skills and troubleshooting while doing this project very much.

Lastly, I would like to thank my family, my friends, and my respected seniors for their moral support and other precious co-operations.

Place: Patna.

Date: 13/11/2022.

A handwritten signature in black ink, appearing to read 'Rizwan' with a stylized flourish at the end.

Signature

PROJECT SUMMARY

SUBJECT / TITLE : “STUDENT MANAGEMENT SYSTEM”

PROJECT CATEGORIES : C++ BASED PROJECT.

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B:Entity Relationship Diagram (ERD)

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1 Project Title

“STUDENT MANAGEMENT SYSTEM”

2 Problem Statement

A problem has been remarked over the time in every small and big schools and colleges who are collecting the information of their student. Specially if they are using pen-paper for collecting the student information, there is chance that it will be lost and it would also be very complex to retrieve the information of the student, you have to search in every paper even if you are using excel or any other similar product you have to search the whole sheet if you want to retrieve any data from it. Here you can use the “Student Management System” with few important features that will allow you to enter, update, delete and search the student details easily, and also you will be able to see the information of all the students at same time.

3 Project Description

It is a C++ based application. It has been implemented for so many real-life difficulties to resolve and make ease of management of student information. Here, a user can enter, update, delete and search the student details and can also see the all student’s information at the same time.

3.1 Scope of the Work

This application-based project deals with the scope of help millions of schools and colleges who want to manage their student information, especially for those do not want to waste their time inserting and retrieving student information.

3.2 Project Modules

There are seven modules in this program which is listed below:

Menu : -

It is a home page of program which allow you to enter in the different pages like: -Enter Record, Update Record, Delete Record, Search Record, Display Record and Exit.

Enter Record : -

In this module, user can enter student records.

Update Record : -

In this module, user can update saved student records by using roll number.

Delete Record : -

In this module, user can delete saved student records by using roll number.

Search Record : -

In this module, the user can search for the student from the student record using roll number.

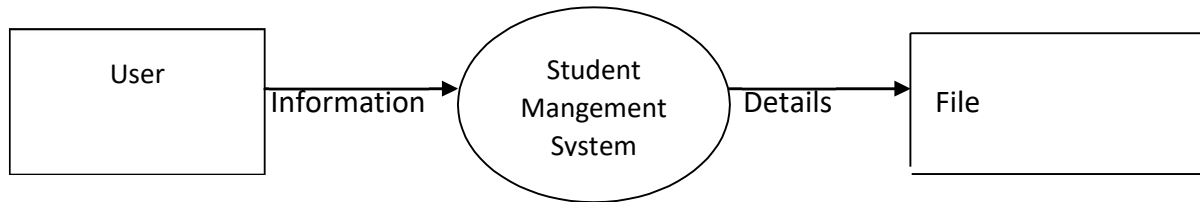
Display Record : -

In this module, user can display student record.

Exit : -

In this module, user can exit the program.

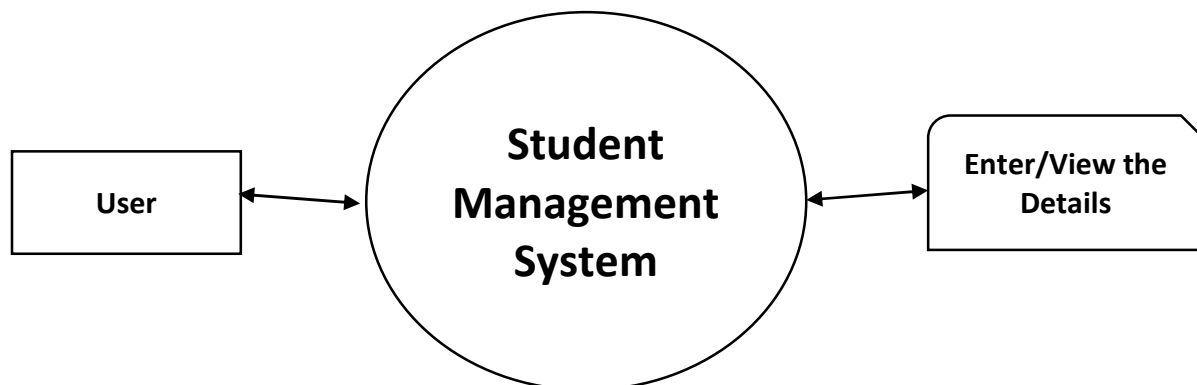
3.3 Context Diagram (High Level)



4 Implementation Methodology

This is a C++ based application with file system(I/O). This project is based on a real-world problem of every individual institute who need to manage the information of their student. Anyone can opt this facility, We made this project dynamic so that any person who wants to adopt this project can adapt it easily.

Context Level/0 Level DFD of Student Management System:



DATABASE/FILE SYSTEM TREE:

ATTRIBUTE	DATATYPE	CONSTRAINTS	PURPOSE
First Name	VARCHAR	Not Null	For saving the Student information
Last Name	VARCHAR	Not Null	For saving the Student information
Class	VARCHAR	Not Null	For saving the Student information
Roll Number	VARCHAR	Not Null	For saving the Student information
Section	VARCHAR	Not Null	For saving the Student information
City	VARCHAR	Not Null	For saving the Student information
Mobile	VARCHAR	Not Null	For saving the Student information

5 Technologies to be used

5.1 Software Platform

a) Front-end

C++

b) Back-end

C++

c) Database:

File System (C++)

5.2 Hardware Platform

- **RAM:** 256MB
- **Hard Disk:** 50GB
- **OS:** Windows 7,8,10
- **Editor:** Visual Studio Code

5.3 Tools

- **LANGUAGES:** C++
- **DATABASE:** File System(C++)
- **IDE:** Visual Studio Code

6 Advantages of this Project

- Help the schools and colleges to manage the student information.
- Time saver application for schools and colleges.
- Easy to retrieve information of the student.
- Easy to enter/update/delete and search the student information.

7 Any Assumptions

None

8 Future Scope and further enhancement of the Project

The future scope and the further enhancement of the project have been given below:-

- Login function for admin, so that other person cannot insert, delete, update or retrieve the confidential information.
- More user-friendly and easy to use.

9 Conclusion

Time is essential for any organization. Implementing this type of system for any region will be highly useful in the current scenario. Nowadays schools and colleges do not want to waste their time. This application will provide them with ease to manage student information in terms of time, money, comfort, and help. This will be highly useful in this modern and digital era. It will help a lot to the uncountable schools and colleges today and in the future.

10 Source Code

```
/*-----STUDENT MANAGEMENT SYSTEM-----*/

//IMPORING PACKAGES:

# include <iostream>
# include <fstream>
# include <stdlib.h>
# include <cstdlib>
# include <conio.h>

using namespace std;

//CREATING CLASS FOR STUDENT :
class student
{
private:
    string First_Name,Last_Name,Class,Roll_No,Section,City,Mobile_No;

public:
    void menu();           // MENU FUNCTION
    void insert();         // INSERT FUNCTION
    void update();         // UPDATE FUNCTION
    void del();            // DELETE FUNCTION
    void search();         // SEARCH FUNCTION
    void display();        // DISPLAY FUNCTION
};

// FUNCTION FOR MENU:

void student::menu()
{
    menustart:

    system("cls");
    int option;
    char x;
```

```
cout<<"\n\n\n\n"<<endl;
cout<<"\t\t\t-----"<<endl;
cout<<"\t\tSTUDENT MANAGEMENT SYSTEM"<<endl;
cout<<"\t\t\t-----"<<endl;
cout<<"\t\t1. Enter Record"<<endl;
cout<<"\t\t2. Update Record"<<endl;
cout<<"\t\t3. Delete Record"<<endl;
cout<<"\t\t4. Search Record"<<endl;
cout<<"\t\t5. Display Record"<<endl;
cout<<"\t\t6. Exit"<<endl;
cout<<"\t\t\t-----"<<endl;
cout<<"\n"<<endl;
cout<<"Choose Your Option [1/2/3/4/5/6] : ";
cin>>option;
cout<<"\n"<<endl;

switch (option)
{
    case 1: // INSERT RECORD
        do
        {
            insert();
            cout<<"\t\t\tDo You Want To Add Another Student Record?(Y/N) : ";
            cin>>x;
        }
        while (x=='y' || x=='Y');
        break;

    case 2: // UPDATE RECORD
        update();
        break;

    case 3: // DELETE RECORD
        del();
        break;

    case 4: // SEARCH RECORD
        search();
        break;

    case 5: // DISPLAY RECORD
        display();
        break;

    case 6: // EXIT

system("cls");
```



```

cout<<"\t\t Enter Mobile      :      ";
cin>>Mobile_No;
cout<<"\t      -----"<<endl;
cout<<"\t      Record Saved Successfully."<<endl;

file.open("Record.txt", ios::app | ios::out);
file<<" "<< First_Name<<" "<<Last_Name <<" "<< Class <<" "<< Roll_No<<" "<< Section<<" "<<
City <<" "<< Mobile_No<<"\n";
file.close();

}

// FUNCTION FOR DISPLAY THE RECORD:

void student::display()
{
system("cls");
fstream file;
int a=0;
cout<<"\n\n\t      -----"<<endl;
cout<<"\t\t      STUDENT RECORD"<<endl;
cout<<"\t      -----"<<endl;

file.open("Record.txt", ios::in);

if (!file)
{
cout<<"\n\n\t\tData Not Available!!"<<endl;
file.close();
}

else{

file >> First_Name >> Last_Name >> Class >> Roll_No>> Section>> City >> Mobile_No;

while (!file.eof())
{

cout<<"\t\t Name      :      "<<First_Name<<" "<<Last_Name<<endl;
cout<<"\t\t Class      :      "<<Class<<endl;
cout<<"\t\t Roll      :      "<<Roll_No<<endl;
cout<<"\t\t Section    :      "<<Section<<endl;
cout<<"\t\t City      :      "<<City<<endl;
cout<<"\t\t Mobile    :      "<<Mobile_No<<endl;

```

```

cout<<"\t      -----" <<endl;
file >> First_Name >> Last_Name >> Class >> Roll_No>> Section>> City >> Mobile_No;

}

if(a==0)
{
    cout<<"\t      Press Any Key To Exit ";

}
file.close();

}
}

// FUNCTION FOR UPDATING THE RECORD:

void student::update(){

    system("cls");
    fstream file, file1;
    string rn;
    int f=0;

    cout<<"\n\n\n\n" <<endl;
    cout<<"\t      -----" <<endl;
    cout<<"\t\t      UPDATE STUDENT RECORD" <<endl;
    cout<<"\t      -----" <<endl;

    file.open("Record.txt", ios::in);
    if (!file)
    {

        cout<<"\n\n\t\tData Not Available!!" <<endl;
        file.close();
    }

    else{
        cout<<"\n\t\tEnter Roll Number      :          ";
        cin>>rn;
        cout<<"\n\t      -----" <<endl;

        file1.open("SRecord.txt", ios::app | ios::out);
        file >> First_Name >> Last_Name >> Class >> Roll_No>> Section>> City >> Mobile_No;
        while (!file.eof())

```

```

{
    if (rn != Roll_No)
    {
        file1<<" "<< First_Name<<" "<<Last_Name <<" "<< Class <<" "<< Roll_No<<" "<< Section<<"
"<< City <<" "<< Mobile_No<<"\n";
    }

    else{
        cout<<"\t\t Enter First Name      :      ";
        cin>>First_Name;
        cout<<"\t\t Enter Last Name       :      ";
        cin>>Last_Name;
        cout<<"\t\t Enter Class           :      ";
        cin>>Class;
        cout<<"\t\t Enter Roll            :      ";
        cin>>Roll_No;
        cout<<"\t\t Enter Section          :      ";
        cin>>Section;
        cout<<"\t\t Enter City              :      ";
        cin>>City;
        cout<<"\t\t Enter Mobile            :      ";
        cin>>Mobile_No;
        cout<<"\t      -----"<<endl;
        cout<<"\t      Record Updated Successfully."<<endl;
        cout<<"\t      Press Any Key To Exit ";

        file1<<" "<< First_Name<<" "<<Last_Name <<" "<< Class <<" "<< Roll_No<<" "<< Section<<" "<<
City <<" "<< Mobile_No<<"\n";

        f++;

    }

    file >> First_Name >> Last_Name >> Class >> Roll_No>> Section>> City >> Mobile_No;

}
if (f==0)
{
    cout<<"\n      Invalid Roll Number!!"<<endl;
    cout<<"\n\t      -----"<<endl;
}
file1.close();
file.close();

```



```

    file1<<" "<< First_Name<<" "<<Last_Name <<" "<< Class <<" "<< Roll_No<<" "<< Section<<"
"<< City <<" "<< Mobile_No<<"\n";
}

else{
cout<<"\t\t Name          :    "<<First_Name<<" "<<Last_Name<<endl;
cout<<"\t\t Class          :    "<<Class<<endl;
cout<<"\t\t Roll           :    "<<Roll_No<<endl;
cout<<"\t\t Section        :    "<<Section<<endl;
cout<<"\t\t City           :    "<<City<<endl;
cout<<"\t\t Mobile         :    "<<Mobile_No<<endl;
cout<<"\t      -----"<<endl;
cout<<"\t      Record Deleted Successfully."<<endl;
cout<<"\t      Press Any Key To Exit ";

f++;

}

file >> First_Name >> Last_Name >> Class >> Roll_No>> Section>> City >> Mobile_No;

}
if (f==0)
{
    cout<<"\n                Invalid Roll Number!!"<<endl;
    cout<<"\n\t      -----"<<endl;
}
file1.close();
file.close();
remove("Record.txt");
rename("SRecord.txt","Record.txt");

}
}

// FUNCTION FOR SEARCHING THE RECORD:

void student::search()
{

    system("cls");
    fstream file;
    string rn;

```



```
cout<<"\n                Invalid Roll Number!!"<<endl;
cout<<"\n\t      -----"<<endl;

}
}

file.close();
}

// MAIN FUNCTION:

main(){

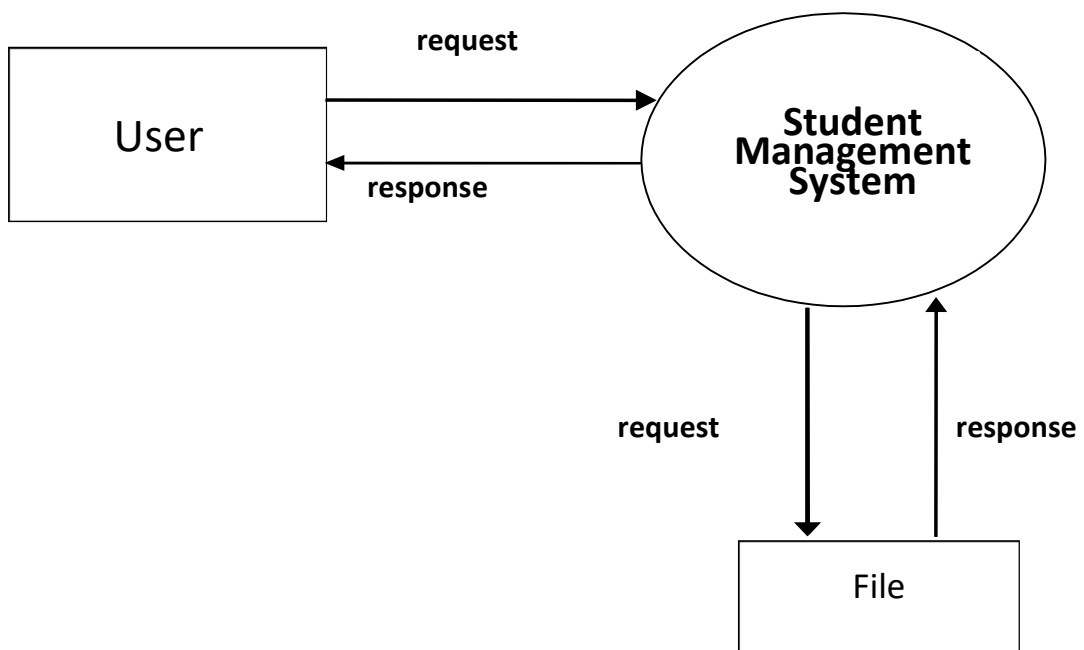
    student project;
    project.menu();
    return 0;

}
```

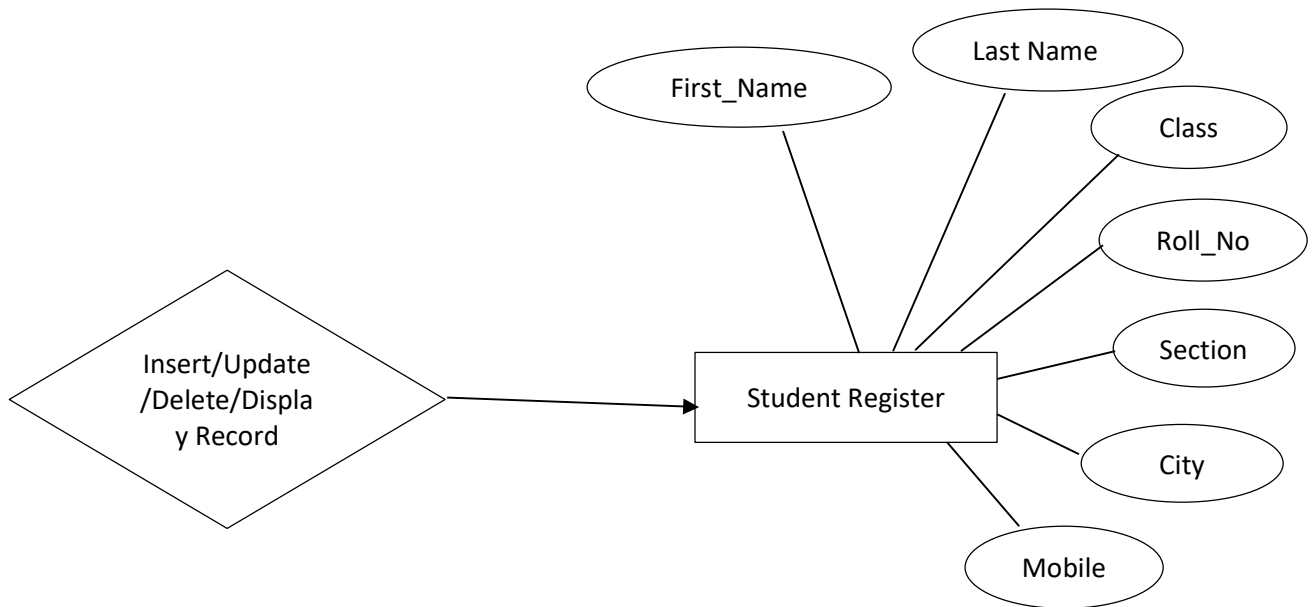
Annexure A

Data Flow Diagram (DFD)

0 – Level DFDs



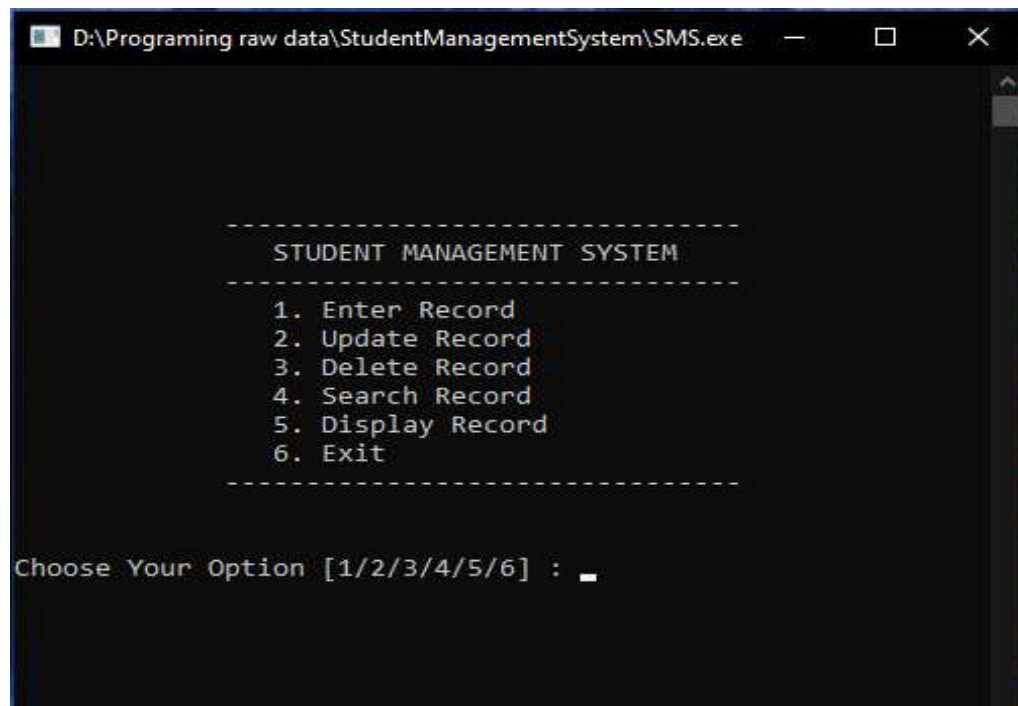
Entity-Relationship Diagram (ERD)



Annexure C

Screen Shots

Home Page



Enter Record

```
Select D:\Programing raw data\StudentManagementSystem\SMS.exe

-----
                        ADD STUDENT RECORD
-----
Enter First Name      :      Akash
Enter Last Name       :      Gupta
Enter Class           :      5th
Enter Roll            :      250
Enter Section         :      A
Enter City            :      Patna
Enter Mobile          :      8526547854
-----
Record Saved Successfully.
Do You Want To Add Another Student Record?(Y/N) : █
```

Update Record

```
D:\Programing raw data\StudentManagementSystem\SMS.exe

-----
                        UPDATE STUDENT RECORD
-----

Enter Roll Number    :      25
-----
Enter First Name     :      Karan
Enter Last Name      :      Kumar
Enter Class          :      4th
Enter Roll           :      269
Enter Section        :      C
Enter City           :      Sasaram
Enter Mobile         :      8547458569
-----
Record Updated Successfully.
Press Any Key To Exit █
```


Delete Record

```
D:\Programing raw data\StudentManagementSystem\SMS.exe

-----
                        DELETE STUDENT RECORD
-----

Enter Roll Number   :           45

-----
Name      : Rizwan Fatmi
Class     : 12th
Roll      : 45
Section   : A
City      : Patna
Mobile    : 8452658575
-----

Record Deleted Successfully.
Press Any Key To Exit
```

Search Record

```
D:\Programing raw data\StudentManagementSystem\SMS.exe


-----
                        SEARCH STUDENT RECORD
-----

Enter Roll Number   :           25

-----
Name      : Neha Devi
Class     : 4th
Roll      : 25
Section   : A
City      : Patna
Mobile    : 8527419635
-----

Press Any Key To Exit
```

Display Record



```
D:\Programing raw data\StudentManagementSystem\SMS.exe

-----
                        STUDENT RECORD
-----
      Name      :    Rizwan Fatmi
      Class     :    12th
      Roll      :    45
      Section   :    A
      City      :    Patna
      Mobile    :    8452658575
-----
      Name      :    Neha Devi
      Class     :    11th
      Roll      :    46
      Section   :    A
      City      :    Gaya
      Mobile    :    8549855447
-----
Press Any Key To Exit _
```