Student Report Card System In C++

PROJECT

```
//*************************************************************
*
//              HEADER FILE USED IN PROJECT
//*************************************************************
**


#include<iostream>
#include<fstream>
#include<iomanip>
using namespace std;



//*************************************************************
*
//              CLASS USED IN PROJECT
//*************************************************************
**


class student
{
        int rollno;
        char name[50];
        int p_marks, c_marks, m_marks, e_marks, cs_marks;
```

```
        double per;
        char grade;
        void calculate();    //function to calculate grade
public:
        void getdata();              //function to accept data from user
        void showdata() const;   //function to show data on screen
        void show_tabular() const;
        int retrollno() const;
}; //class ends here


void student::calculate()
{
        per=(p_marks+c_marks+m_marks+e_marks+cs_marks)/5.0;
        if(per>=60)
                grade='A';
        else if(per>=50)
                grade='B';
        else if(per>=33)
                grade='C';
        else
                grade='F';
}

void student::getdata()
{
```

```
        cout<<"\nEnter The roll number of student ";
        cin>>rollno;
        cout<<"\n\nEnter The Name of student ";
        cin.ignore();
        cin.getline(name,50);
        cout<<"\nEnter The marks in physics out of 100 : ";
        cin>>p_marks;
        cout<<"\nEnter The marks in chemistry out of 100 : ";
        cin>>c_marks;
        cout<<"\nEnter The marks in maths out of 100 : ";
        cin>>m_marks;
        cout<<"\nEnter The marks in english out of 100 : ";
        cin>>e_marks;
        cout<<"\nEnter The marks in computer science out of 100 : ";
        cin>>cs_marks;
        calculate();
}

void student::showdata() const
{
        cout<<"\nRoll number of student : "<<rollno;
        cout<<"\nName of student : "<<name;
        cout<<"\nMarks in Physics : "<<p_marks;
        cout<<"\nMarks in Chemistry : "<<c_marks;
        cout<<"\nMarks in Maths : "<<m_marks;
        cout<<"\nMarks in English : "<<e_marks;
```

```
        cout<<"\nMarks in Computer Science :"<<cs_marks;
        cout<<"\nPercentage of student is  :"<<per;
        cout<<"\nGrade of student is :"<<grade;
}

void student::show_tabular() const
{
        cout<<rollno<<setw(6)<<"
"<<name<<setw(10)<<p_marks<<setw(4)<<c_marks<<setw(4)<<m_marks<<s
etw(4)

        <<e_marks<<setw(4)<<cs_marks<<setw(8)<<per<<setw(6)<<grade<<en
dl;
}

int  student::retrollno() const
{
        return rollno;
}



//**************************************************************
*
//      function declaration
//**************************************************************
**

void write_student();     //write the record in binary file
```

```
void display_all();  //read all records from binary file

void display_sp(int);       //accept rollno and read record from binary file

void modify_student(int);        //accept rollno and update record of binary file

void delete_student(int);        //accept rollno and delete selected records from binary file

void class_result();         //display all records in tabular format from binary file

void result();               //display result menu

void intro();          //display welcome screen

void entry_menu();


//***************************************************************
*
//      THE MAIN FUNCTION OF PROGRAM
//***************************************************************
**



int main()

{

        char ch;

        cout.setf(ios::fixed|ios::showpoint);

        cout<<setprecision(2); // program outputs decimal number to two decimal places

        intro();

        do

        {
```

```
                system("cls");
                cout<<"\n\n\n\tMAIN MENU";
                cout<<"\n\n\t01. RESULT MENU";
                cout<<"\n\n\t02. ENTRY/EDIT MENU";
                cout<<"\n\n\t03. EXIT";
                cout<<"\n\n\tPlease Select Your Option (1-3) ";
                cin>>ch;
                switch(ch)
                {
                        case '1': result();
                                break;
                        case '2': entry_menu();
                                break;
                        case '3':
                                break;
                        default :cout<<"\a";
                }
   }while(ch!='3');
        return 0;
}

//*************************************************************
*
//      function to write in file
//*************************************************************
**
```

```
void write_student()
{
	student st;
	ofstream outFile;
	outFile.open("student.dat",ios::binary|ios::app);
	st.getdata();
	outFile.write(reinterpret_cast<char *> (&st), sizeof(student));
	outFile.close();
	cout<<"\n\nStudent record Has Been Created ";
	cin.ignore();
	cin.get();
}

//***************************************************************
*
//	function to read all records from file
//***************************************************************
**

void display_all()
{
	student st;
	ifstream inFile;
	inFile.open("student.dat",ios::binary);
	if(!inFile)
	{
		cout<<"File could not be open !! Press any Key...";
```

```
                cin.ignore();
                cin.get();
                return;
        }
        cout<<"\n\n\n\t\tDISPLAY ALL RECORD !!!\n\n";
        while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
        {
                st.showdata();
                cout<<"\n\n====================================\n";
        }
        inFile.close();
        cin.ignore();
        cin.get();
}

//***************************************************************
*
//      function to read specific record from file
//***************************************************************
**

void display_sp(int n)
{
        student st;
        ifstream inFile;
        inFile.open("student.dat",ios::binary);
        if(!inFile)
```

```
	{
		cout<<"File could not be open !! Press any Key...";
		cin.ignore();
		cin.get();
		return;
	}
	bool flag=false;
	while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
	{
		if(st.retrollno()==n)
		{
			st.showdata();
			flag=true;
		}
	}
	inFile.close();
	if(flag==false)
		cout<<"\n\nrecord not exist";
	cin.ignore();
	cin.get();
}

//***************************************************************
*
//	function to modify record of file
//***************************************************************
**
```

```
void modify_student(int n)
{
	bool found=false;
	student st;
	fstream File;
	File.open("student.dat",ios::binary|ios::in|ios::out);
	if(!File)
	{
		cout<<"File could not be open !! Press any Key...";
		cin.ignore();
		cin.get();
		return;
	}
	while(!File.eof() && found==false)
	{

		File.read(reinterpret_cast<char *> (&st), sizeof(student));
		if(st.retrollno()==n)
		{
			st.showdata();
			cout<<"\n\nPlease Enter The New Details of
student"<<endl;
			st.getdata();
			int pos=(-1)*static_cast<int>(sizeof(st));
			File.seekp(pos,ios::cur);
```

```
                    File.write(reinterpret_cast<char *> (&st), sizeof(student));
                    cout<<"\n\n\t Record Updated";
                    found=true;
                }
        }
        File.close();
        if(found==false)
                cout<<"\n\n Record Not Found ";
        cin.ignore();
        cin.get();
}

//***************************************************************
*
//      function to delete record of file
//***************************************************************
**

void delete_student(int n)
{
        student st;
        ifstream inFile;
        inFile.open("student.dat",ios::binary);
        if(!inFile)
        {
                cout<<"File could not be open !! Press any Key...";
                cin.ignore();
```

```
                cin.get();
                return;
        }
        ofstream outFile;
        outFile.open("Temp.dat",ios::out);
        inFile.seekg(0,ios::beg);
        while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
        {
                if(st.retrollno()!=n)
                {
                        outFile.write(reinterpret_cast<char *> (&st),
sizeof(student));
                }
        }
        outFile.close();
        inFile.close();
        remove("student.dat");
        rename("Temp.dat","student.dat");
        cout<<"\n\n\tRecord Deleted ..";
        cin.ignore();
        cin.get();
}

//*************************************************************
*
//      function to display all students grade report
```

```
//*************************************************************
**


void class_result()
{
        student st;
        ifstream inFile;
        inFile.open("student.dat",ios::binary);
        if(!inFile)
        {
                cout<<"File could not be open !! Press any Key...";
                cin.ignore();
                cin.get();
                return;
        }
        cout<<"\n\n\t\tALL STUDENTS RESULT \n\n";
        cout<<"==========================================================
======\n";
        cout<<"R.No      Name      P   C   M   E   CS   %age   Grade"<<endl;
        cout<<"==========================================================
======\n";
        while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
        {
                st.show_tabular();
        }
        cin.ignore();
        cin.get();
```

```
        inFile.close();
}

//*************************************************************
*
//      function to display result menu
//*************************************************************
**

void result()
{
        char ch;
        int rno;
        system("cls");
        cout<<"\n\n\n\tRESULT MENU";
        cout<<"\n\n\n\t1. Class Result";
        cout<<"\n\n\t2. Student Report Card";
        cout<<"\n\n\t3. Back to Main Menu";
        cout<<"\n\n\n\tEnter Choice (1/2/3)? ";
        cin>>ch;
        system("cls");
        switch(ch)
        {
        case '1' :      class_result(); break;
        case '2' :      cout<<"\n\n\tEnter Roll Number Of Student : "; cin>>rno;
                                display_sp(rno); break;
        case '3' :      break;
```

```
        default:       cout<<"\a";
        }
}

//*************************************************************
*
//      INTRODUCTION FUNCTION
//*************************************************************
**

void intro()
{
        cout<<"\n\n\n\t\t  STUDENT";
        cout<<"\n\n\t\tREPORT CARD";
        cout<<"\n\n\t\t  PROJECT";
//      cout<<"\n\n\n\tMADE BY : DISHA COMPUTER";
        cout<<"\n\tSCHOOL : DISHA SCHOOL";
        cin.get();
}

//*************************************************************
*
//      ENTRY / EDIT MENU FUNCTION
//*************************************************************
**

void entry_menu()
```

```
{
        char ch;
        int num;
        system("cls");
        cout<<"\n\n\n\tENTRY MENU";
        cout<<"\n\n\t1.CREATE STUDENT RECORD";
        cout<<"\n\n\t2.DISPLAY ALL STUDENTS RECORDS";
        cout<<"\n\n\t3.SEARCH STUDENT RECORD ";
        cout<<"\n\n\t4.MODIFY STUDENT RECORD";
        cout<<"\n\n\t5.DELETE STUDENT RECORD";
        cout<<"\n\n\t6.BACK TO MAIN MENU";
        cout<<"\n\n\tPlease Enter Your Choice (1-6) ";
        cin>>ch;
        system("cls");
        switch(ch)
        {
        case '1':       write_student(); break;
        case '2':       display_all(); break;
        case '3':       cout<<"\n\n\tPlease Enter The roll number "; cin>>num;
                        display_sp(num); break;
        case '4':       cout<<"\n\n\tPlease Enter The roll number "; cin>>num;
                        modify_student(num);break;
        case '5':       cout<<"\n\n\tPlease Enter The roll number "; cin>>num;
                        delete_student(num);break;
        case '6':       break;
        default:        cout<<"\a"; entry_menu();
```

```
        }
}


//*************************************************************
*
//                    END OF PROJECT
//*************************************************************
*
```