

# INDEX

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## Acknowledgement

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# INTRODUCTION

Student report card system project in C++ is a simple console application built without the use of graphics. This project student report card system helps in managing the record of students according to their roll no. In this project we tried to enter all details of students like roll no, name, marks in all five subjects, etc. and tried to maintain all the possibility which may help the user to enter more record if he/she requires. Some of the features of the program are:

- 1) Create student report card record: This feature creates a new student record containing his marks.
- 2) Read all students report card record: This features helps us to read all records of student report card system project present in the binary file of the in C++ program.
- 3) Read specific student's report card record: This feature is same as the one explained above, except it shows the progress report and relevant data related to a particular student.
- 4) Modify student's report card record: In student report card system project in C++, this feature is used to edit the report card record of a particular student.
- 5) Delete student record: This feature deletes the report card record of a particular student

# Header Files Used:

## **1) #include<iostream>**

It is the predefined library function used for input and output also called as header files. **iostream** is the header file which contains all the functions of program like cout, cin etc. and **#include** tells the preprocessor to **include** these header file in the program. ... The file **iostream** is located in your **include** path.

## **2) #include<fstream>**

File streams **include** two member functions specifically designed to read and write binary data sequentially: write and read. The first one (write) is a member function of ostream (inherited by ofstream). And read is a member function of istream (inherited by ifstream). Objects of class **fstream** have both.

## **3) #include<iomanip>**

The header <**iomanip**> is part of the Input/output library of the C++ Standard Library. It defines the manipulator functions resetiosflags() , setiosflags() , setbase() , setfill() , setprecision() , and setw() . These functions may be conveniently used by C++ programs to affect the state of iostream objects.

## SOURCE CODE

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

class student
{
    int rollno;
    char name[50];
    int p_marks, c_marks, m_marks, e_marks, cs_marks;
    double per;
    char grade;
    void calculate(); // calculate grade

public:
    void getdata();          //accept data
    void showdata() const;   //show data
    void show_tabular() const;
```

```
intretrollno() const;  
};  
  
void student::calculate()  
{  
    per=(p_marks+c_marks+m_marks+e_marks+cs_marks)/5.0;  
    if(per>=90)  
        grade='A';  
    else if(per>=80&&per<90)  
        grade='B';  
    else if(per>=70)  
        grade='C';  
    else if(per>=60)  
        grade='B';  
    else if(per>=50)  
        grade='D';  
    else if(per>=40)  
        grade='E';  
    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)<<"\t
"<<name<<"\t"<<setw(10)<<p_marks<<setw(4)<<c_marks<<setw(4)<<
m_marks<<setw(4)
```

```
    <<e_marks<<setw(4)<<cs_marks<<setw(8)<<per<<setw(6)<<grad
e<<endl;
}

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

void write_student(); //write
void display_all();    //read
void display_sp(int);  //accept rolno and read record
void modify_student(int); //accept rolno and update record OF FILE
void delete_student(int); //accept rolno and delete selected records
void class_result();    //display all records
void result();          //display result
void entry_menu();      //entry
```

## // 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

    cout<<"\n\n\n\t STUDENT";

    cout<<"\n\n\tREPORT CARD";

    cout<<"\n\n\t PROJECT";

    cout<<"\n\n\n\tMADE BY : AKSHAT & VIREN";

    cout<<"\n\tSCHOOL : N.G International SCHOOL";

    do

    {

        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 FROMM 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();

}
```

### **// FILES TO READ SPECIFIC RECORDS FROM FILES**

```
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 RECORDS 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();  
  
    intpos=(-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)

{
    studentst;
    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.rollno()!=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();

}
```

### **// FUNTION TO DISPLAY ALL STUDENT GRADE REPORT**

```
voidclass_result()

{

studentst;

ifstreaminFile;

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();

}

void result()

```

```
{  
    charch;  
    intrno;  
  
    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;  
  
    switch(ch)  
    {  
        case '1' : class_result();  
        break;  
        case '2' : class_result();  
        cout<<"=====\\n";  
        cout<<"\\nChoose from the above list: "<<endl;  
        cout<<"\n\n\tEnter Roll Number Of Student : "; cin>>rno;  
    }  
}
```

```
        display_sp(rno);

        break;

    case '3' :  break;

    default:   cout<<"\a";

    }

}

//  ENTRY / EDIT MENU FUNCTION

void entry_menu()

{

    charch;

    intnum;

    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;

switch(ch)

{

case '1':   write_student();

break;

case '2':   display_all();

break;

case '3':   class_result();

cout<<"=====\\n";

cout<<"\\nChoose from the above list: "<<endl;

cout<<"\\n\\n\\tPlease Enter The roll number "; cin>>num;

display_sp(num);

break;

case '4':   class_result();

cout<<"=====\\n";

cout<<"\\nChoose from the above list: "<<endl;

cout<<"\\n\\n\\tPlease Enter The roll number "; cin>>num;

modify_student(num);
```

```
        break;

    case '5':   class_result();

    cout<<"=====
=====\\n";

    cout<<"\\nChoose from the above list: "<<endl;

    cout<<"\\n\\n\\tPlease Enter The roll number "; cin>>num;

            delete_student(num);

            break;

    case '6':   break;

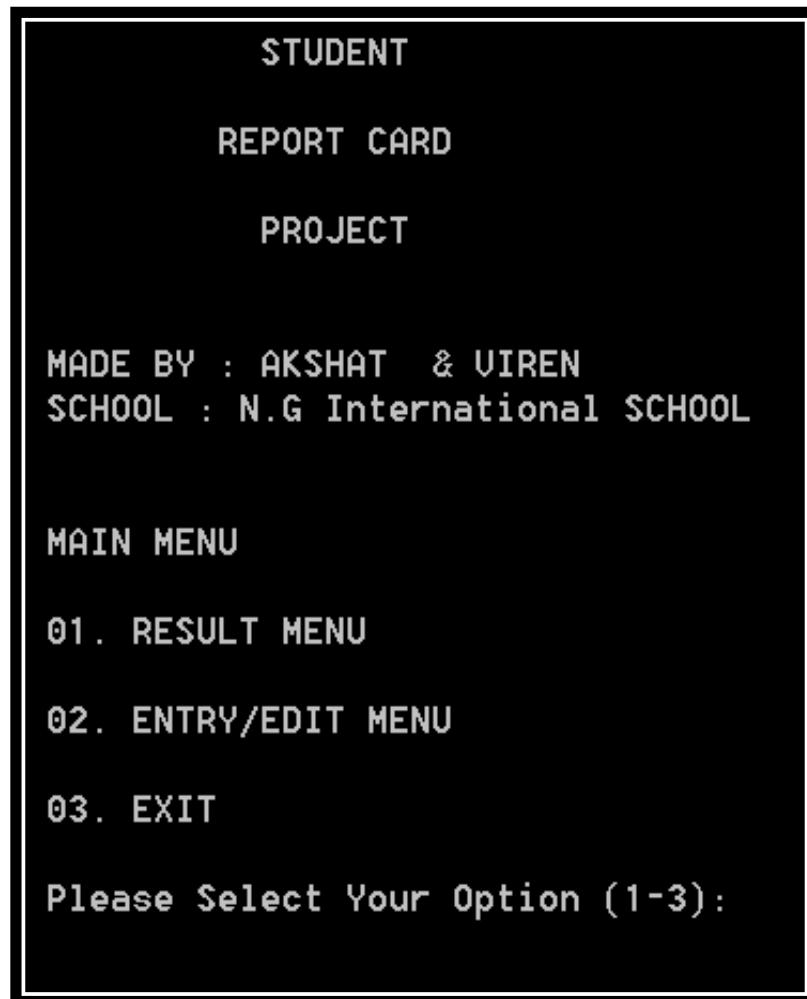
    default:   cout<<"\\a"; entry_menu();

}

}
```

*OUTPUT WINDOWS  
OF THE  
ABOVE PROGRAM*

*FROM THE MAIN MENU*



## *RESULT MENU*

### RESULT MENU

1. Class Result
2. Student Report Card
3. Back to Main Menu

Enter Choice (1/2/3)?

*SELECTING THE OPTION CLASS RESULT(1.)*

Enter Choice (1/2/3)? 1

### ALL STUDENTS RESULT

R.No	Name	P	C	M	E	CS	%age	Grade
1	rahul	78	89	85	84	90	85.20	B
2	rohit	88	87	86	85	84	86.00	B
3	naman	87	84	83	82	81	83.40	B

## ***SELECTING THE OPTION STUDENT REPORT CARD(2.)***

```
ALL STUDENTS RESULT
-----
R.No      Name          P   C   M   E   CS  %age  Grade
-----
1        rahul         78  89  85  84  90  85.20  B
2        rohit         88  87  86  85  84  86.00  B
3        naman         87  84  83  82  81  83.40  B
-----
Choose from the above list:
-----
Enter Roll Number Of Student : 1
-----
Roll number of student : 1
Name of student : rahul
Marks in Physics : 78
Marks in Chemistry : 89
Marks in Maths : 85
Marks in English : 84
Marks in Computer Science :90
Percentage of student is :85.20%
Grade of student is :B
```

**IF YOU PRESS 3 THEN THE PROGRAMS WILL  
RETURN TO MAIN MENU**

***From The Main Menu Again***

**ENTRY MENU**

- 1 . CREATE STUDENT RECORD**
- 2 . DISPLAY ALL STUDENTS RECORDS**
- 3 . SEARCH STUDENT RECORD**
- 4 . MODIFY STUDENT RECORD**
- 5 . DELETE STUDENT RECORD**
- 6 . BACK TO MAIN MENU**

**Please Enter Your Choice (1-6) :**

## *SELECTING THE CREATE OPTION*

Enter The roll number of student 4

Enter The Name of student rakesh

Enter The marks in physics out of 100 : 76

Enter The marks in chemistry out of 100 : 88

Enter The marks in maths out of 100 : 89

Enter The marks in english out of 100 : 94

Enter The marks in computer science out of 100 : 92

Student record Has Been Created

## ***SELECTING THE DISPLAY OPTION***

**DISPLAY ALL RECORD !!!**

```
Roll number of student : 1
Name of student : rahul
Marks in Physics : 78
Marks in Chemistry : 89
Marks in Maths : 85
Marks in English : 84
Marks in Computer Science :90
Percentage of student is   :85.20%
Grade of student is :B
=====

```

```
Roll number of student : 2
Name of student : rohit
Marks in Physics : 88
Marks in Chemistry : 87
Marks in Maths : 86
Marks in English : 85
Marks in Computer Science :84
Percentage of student is   :86.00%
Grade of student is :B
=====
```

## ***SELECTING THE SEARCH OPTION***

Please Enter The roll number 2

Roll number of student : 2

Name of student : rohit

Marks in Physics : 88

Marks in Chemistry : 87

Marks in Maths : 86

Marks in English : 85

Marks in Computer Science :84

Percentage of student is :86.00%

Grade of student is :B

## ***SELECTING THE MODIFY OPTION***

```
Please Enter The roll number 4  
Roll number of student : 4  
Name of student : rakesh  
Marks in Physics : 76  
Marks in Chemistry : 88  
Marks in Maths : 89  
Marks in English : 94  
Marks in Computer Science :92  
Percentage of student is :87.80%  
Grade of student is :B  
  
Please Enter The New Details of student  
  
Enter The roll number of student 4  
  
Enter The Name of student rupesh  
Enter The marks in physics out of 100 : 76  
Enter The marks in chemistry out of 100 : 75  
Enter The marks in maths out of 100 : 68  
Enter The marks in english out of 100 : 95  
Enter The marks in computer science out of 100 : 84  
  
Record Updated
```

## *SELECTING THE DELETE OPTION*

Please Enter Your Choice (1-6) 5

Please Enter The roll number 4

Record Deleted ..

*After this if you press 3 then the programs gets exit*

## ***CONCLUSION***

This software has its advantages and disadvantages but it can surely help with the record storage system. We don't have to worry about the misplacing of record which is a great clash while storing the record on separate files.

## ***Limitations***

- 1)** Does not support mouse.
- 2)** If some string is given as input i.e. in place where integer should have been input, the program crashes and data file gets spoiled.
- 3)** This project can only work in particular software (CODEBLOCKS).

# *Bibliography*

Sumitaarora class 12

Website:

<http://www.google.co.in>

<http://www.wikipedia.com>

*Thank  
you*