**IMPLEMENTATION OF STUDENT REPORT CARD GENERATION**

**AIM:**

To implement student report card generation using file handling concepts using c++.

**OBJECTIVE:**

To learn how to implement the generation of student report card using file handling concepts.

**ALGORITHM:**

**Step 1**: START

**Step2:** Create a class student with member variables and member functions.

**Step3:** The calculate() function used to calculate student grade, the getdata() function used to get data from student and the showdata() function used to show details of student .

**Step 4**: Binary file called student.dat is created to add, delete, update, modify, search a particular record in the binary file.

**Step5**: The following file functions are

void write\_student() used to write the record in binary file,

void display\_all() used to read all records from binary file,

void display\_sp(int) used to accept rollno and read record from binary file,

void modify\_student(int) used to accept rollno and update record of binary file,

void delete\_student(int) used to accept rollno and delete selected records from binary file,

void class\_result() used to display all records in tabular format from binary file,

void result() used to display result menu,

void intro() used to display welcome screen and

void entry\_menu() used to display entry menu on screen

**Step6:** In main function switch case is used to get choices of menu from the user.

**Step7:** STOP

**DESCRIPTION:**

In this project, users can perform typical report card related functions like adding a new student record and displaying, modifying, editing and deleting it. File handling has been effectively used to perform all these. This project implements the concept of file handling in C++ -- add, read, display, search, modify and delete record from file.

File handling has been used for the effective implementation of all the typical features of this project. The key features of Student Report Card System are:

1. **Create student report card record**: This feature creates a new student record containing his marks. For this the information to be provided are the name and roll no. of the student, and the marks obtained by him/her in 5 subjects – Physics, Chemistry, Maths, English and Computer Science.

2. **Read all students report card record**: The void display\_all() function in this student report card system project in C++ has been used for this feature. It basically shows the progress report of all the students added in file. This feature displays the roll no. and name of all the students, the marks obtained by them in 5 subjects – Physics, Chemistry, Maths, English and Computer Science, along with the percentage and grade of each student.

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. **Display all students’ grade report**: This feature enlists all the students’ record saved in file. The grade report is displayed in a tabular form with roll no. and name of the students, marks achieved in the five subjects, and the grade and percentage obtained by them.

5. **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. For this, the name and roll no. of the student is sought. Upon successful modification, the program displays the message “Record Updated”. If no record of student is found in file, it displays the message “Record not found”.

6. **Delete student record**: This feature deletes the report card record of a particular student; it first of all asks for the name and roll no. of the student whose record is to be deleted.

**PROGRAM:**

#include<iostream.h>

#include<fstream.h>

#include<iomanip.h>

#include<stdio.h>

#include<conio.h>

class student

{

int rollno; char name[50] , grade;

int p\_marks, c\_marks, m\_marks, e\_marks, cs\_marks;

float per;

char grade;

void calculate(); //function to calculate grade

public:

void getdata(); //function to accept data from user

void showdata(); //function to show data on screen

void show\_tabular();

int retrollno();

}; //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 ";

gets(name);

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()

{

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()

{

cout<<rollno<<setw(6)<<" "<<name<<setw(10)<<p\_marks<<setw(4)<<c\_marks<<setw(4)<<m\_marks<<setw(4)<<e\_marks<<setw(4)<<cs\_marks<<setw(6)<<per<<setw(6)<<" "<<grade<<endl;

}

int student::retrollno()

{

return rollno;

}

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(); //display entry menu on screen

int main()

{

char ch;

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

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

clrscr();

intro();

do

{

clrscr();

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;

clrscr();

switch(ch)

{

case '1': result();

break;

case '2': entry\_menu();

break;

case '3':

break;

default :cout<<"\a";

}

}while(ch!='3');

return 0;

}

void write\_student()

{

student st;

ofstream outFile;

outFile.open("student.dat",ios::binary|ios::app);

st.getdata();

outFile.write((char \*) &st, sizeof(student));

outFile.close();

cout<<"\n\nStudent record Has Been Created ";

cin.ignore();

getch();

}

void display\_all()

{

student st;

ifstream inFile;

inFile.open("student.dat",ios::binary);

if(!inFile)

{

cout<<"File could not be open !! Press any Key...";

getch();

return;

}

cout<<"\n\n\n\t\tDISPLAY ALL RECORD !!!\n\n";

while(inFile.read((char \*) &st, sizeof(student)))

{

st.showdata();

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

}

inFile.close();

getch();

}

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...";

getch();

return;

}

int flag=0;

while(inFile.read((char \*) &st, sizeof(student)))

{

if(st.retrollno()==n)

{

st.showdata();

flag=1;

}

}

inFile.close();

if(flag==0)

cout<<"\n\nrecord not exist";

getch();

}

void modify\_student(int n)

{

int found=0;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...";

getch();

return;

}

while(File.read((char \*) &st, sizeof(student)) && found==0)

{

if(st.retrollno()==n)

{

st.showdata();

cout<<"\n\nPlease Enter The New Details of student"<<endl;

st.getdata();

int pos=(-1)\*sizeof(st);

File.seekp(pos,ios::cur);

File.write((char \*) &st, sizeof(student));

cout<<"\n\n\t Record Updated";

found=1;

}

}

File.close();

if(found==0)

cout<<"\n\n Record Not Found ";

getch();

}

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...";

getch();

return;

}

ofstream outFile;

outFile.open("Temp.dat",ios::out);

inFile.seekg(0,ios::beg);

while(inFile.read((char \*) &st, sizeof(student)))

{

if(st.retrollno()!=n)

{

outFile.write((char \*) &st, sizeof(student));

}

}

outFile.close(); inFile.close();

remove("student.dat");

rename("Temp.dat","student.dat");

cout<<"\n\n\tRecord Deleted ..";

getch();

}

void class\_result()

{

student st;

ifstream inFile;

inFile.open("student.dat",ios::binary);

if(!inFile)

{

cout<<"File could not be open !! Press any Key...";

getch();

return;

}

cout<<"\n\n\t\tALL STUDENTS RESULT \n\n";

cout<<"R.No Name P C M E CS %age Grade"<<endl;

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

while(inFile.read((char \*) &st, sizeof(student)))

{

st.show\_tabular();

}

getch();

inFile.close();

}

void result()

{

char ch; int rno;

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;

clrscr();

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";

}

}

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 : HARINI AND MONISHA";

getch();

}

void entry\_menu()

{

char ch;

int num;

clrscr();

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;

clrscr();

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();

}

}

**OUTPUT:**





























