#include<iostream>

#include<fstream>

#include<iomanip>

#include<string>

using namespace std;

**class** student

{

**int** rollno;

**char** name[50];

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

**float** per;

**char** grade;

**int** std;

**void** calculate()

{

per=(p\_marks+c\_marks+m\_marks+e\_marks+cs\_marks)/5.0;

**if**(per>=60)

grade='A';

**else** **if**(per>=50 && per<60)

grade='B';

**else** **if**(per>=33 && per<50)

grade='C';

**else**

grade='F';

}

public:

**void** getdata()

{

cout<<"\nEnter The roll number of student ";

cin>>rollno;

cout<<"\n\nEnter The Name of student ";

cin>>(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** 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 :"<<setprecision(2)<<per;

cout<<"\nGrade of student is :"<<grade;

}

**void** show\_tabular()

{

cout<<rollno<<setw(12)<<name<<setw(10)<<p\_marks<<setw(3)<<c\_marks<<setw(3)<<m\_marks<<setw(3)<<e\_marks<<setw(3)<<cs\_marks<<setw(6)<<setprecision(3)<<per<<" "<<grade<<endl;

}

**int** retrollno()

{

**return** rollno;

}

};

fstream fp;

student st;

**void** write\_student()

{

fp.open("student.dat",ios::out|ios::app);

st.getdata();

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

fp.close();

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

}

**void** display\_all()

{

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

fp.open("student.dat",ios::in);

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

{

st.showdata();

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

}

fp.close();

}

**void** display\_sp(**int** n)

{

**int** flag=0;

fp.open("student.dat",ios::in);

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

{

**if**(st.retrollno()==n)

{

st.showdata();

flag=1;

}

}

fp.close();

**if**(flag==0)

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

}

**void** modify\_student()

{

**int** no,found=0;

cout<<"\n\n\tTo Modify ";

cout<<"\n\n\tPlease Enter The roll number of student";

cin>>no;

fp.open("student.dat",ios::in|ios::out);

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

{

**if**(st.retrollno()==no)

{

st.showdata();

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

st.getdata();

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

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

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

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

found=1;

}

}

fp.close();

**if**(found==0)

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

}

**void** delete\_student()

{

**int** no;

cout<<"\n\n\n\tDelete Record";

cout<<"\n\nPlease Enter The roll number of student You Want To Delete";

cin>>no;

fp.open("student.dat",ios::in|ios::out);

fstream fp2;

fp2.open("Temp.dat",ios::out);

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

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

{

**if**(st.retrollno()!=no)

{

fp2.write((**char**\*)&st,**sizeof**(student));

}

}

fp2.close();

fp.close();

remove("student.dat");

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

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

}

**void** class\_result()

{

fp.open("student.dat",ios::in);

**if**(!fp)

{

cout<<"ERROR!!! FILE COULD NOT BE OPEN\n\n\n Go To Entry Menu to create File";

cout<<"\n\n\n Program is closing ....";

exit(0);

}

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

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

cout<<"Roll No. Name P C M E CS %age Grade\n";

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

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

{

st.show\_tabular();

}

fp.close();

}

**void** result()

{

**int** ans,rno;

**char** ch;

cout<<"\n\n\nRESULT MENU";

cout<<"\n\n\n1. Class Result\n\n2. Student Report Card\n\n3.Back to Main Menu";

cout<<"\n\n\nEnter Choice (1/2)? ";

cin>>ans;

switch(ans)

{

**case** 1 :

class\_result();

**break**;

**case** 2 :

{

**do**

{

**char** ans;

cout<<"\n\nEnter Roll Number Of Student : ";

cin>>rno;

display\_sp(rno);

cout<<"\n\nDo you want to See More Result (y/n)?";

cin>>ans;

}

**while**(ans=='y'||ans=='Y');

**break**;

}

**case** 3:

**break**;

default:

cout<<"\a";

}

}

**void** intro()

{

cout<<" STUDENT REPORT CARD PROJECT ";

}

**void** entry\_menu()

{

**char** ch2;

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) ";

ch2=getchar();

switch(ch2)

{

**case** '1':

write\_student();

**break**;

**case** '2':

display\_all();

**break**;

**case** '3':

**int** num;

cout<<"\n\n\tPlease Enter The roll number ";

cin>>num;

display\_sp(num);

**break**;

**case** '4':

modify\_student();

**break**;

**case** '5':

delete\_student();

**break**;

**case** '6':

**break**;

default:

cout<<"\a";

entry\_menu();

}

}

**int** main()

{

**char** ch;

intro();

**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) ";

ch=getchar();

**switch**(ch)

{

**case** '1':

result();

**break**;

**case** '2':

entry\_menu();

**break**;

**case** '3':

exit(0);

**default** :

cout<<"\a";

}

}

**while**(ch!='3');

}