Student Database

Introduction : -

This program is basically used for managing student database and it is written in C++ language. This program will manage data according to user’s choice. The user just have to enter the information of the student and then this program will save the information in a file. The file will be saved as “student.dat”. The program will automatically create this file in the BIN folder itself. Program will insert the data in the file and can also display the data on output screen.

Various types of functions are available in this program like Searching, Modifying ,Deleting,Etc to make the program user friendly. This program is being p help people to manage the database in a proper manner. Four types of header files are used in this program and they are iostream.h,fstream.h, iomanip.h, conio.h.

Algorithm of program: -

Step 1:-Start.

Step 2:-Display Introduction.

Step 3:-Enter your choice ‘1’ for result menu,’2’ for Entry /Edit menu and ‘3’for Exit.

Step 4:- according to choice

switch (ch)

{

Case 1: result();

break;

Case 2: entry\_menu();

break;

Case 3:break;

}

Step 5:- Display the menu according to choice.

Step 6:- After entering “1” result() will be selected.

In result there are there are three options such as class result, student report card & back to menu.

* In class report all the reports of class are displayed.
* In student report card only particular report card of student is displayed.

Step 7:- After entering “2” entry\_menu() will selected.

In this there are 6 options in this option & they are:-

* Create student record:

In this user have to enter all the information of student. Information like name, roll no, & student marks in all subjects.It will be saved by the program.

* Display all student record:

In this all the records will displayed.

* Search student record:

This option will search a particular student record in student database.

* Modify student record:

This option will modify student data base of a particular student record.

* Delete student record:

This option will delete a student record.

* Exit :

This option will exit from the Entery/Edit menu and go back in Main menu.

Step 9:- After entering “3” the program will be exit.

Step 10:- Stop.

Flow chart of program:-

start

Display introduction

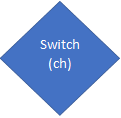
Display Main Menu

Switch(ch)

result()

entry\_menu()

Exit



Switch(no.)

1. Create student record:
2. Display all student record:
3. Search student record:
4. Modify student record:
5. Delete student record:
6. Exit

Class result

Student result

Exit

Insert Student Information

Display

student

result

Display all student

result

Display student data

Stop

Program of student database:-

#include<fstream.h>

#include<iomanip.h>

#include<conio.h>

class student

{

int rollno;

char name[50];

int DTM\_marks, PDB\_marks, DSU\_marks, OOP\_marks, DCO\_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=(DTM\_marks+PDB\_marks+DSU\_marks+OOP\_marks+DCO\_marks)/5;

if(per>=80)

grade='A';

else if(per>=60)

grade='B';

else if(per>=50)

grade='C';

else if(per>=35)

grade='D';

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 DTM out of 100 : ";

cin>>DTM\_marks;

cout<<"\nEnter The marks in PDB out of 100 : ";

cin>>PDB\_marks;

cout<<"\nEnter The marks in DSU out of 100 : ";

cin>>DSU\_marks;

cout<<"\nEnter The marks in OOP out of 100 : ";

cin>>OOP\_marks;

cout<<"\nEnter The marks in DCO out of 100 : ";

cin>>DCO\_marks;

calculate();

}

void student::showdata()

{

cout<<"\nRoll number of student : "<<rollno;

cout<<"\nName of student : "<<name;

cout<<"\nMarks in DTM : "<<DTM\_marks;

cout<<"\nMarks in PDB : "<<PDB\_marks;

cout<<"\nMarks in DSU : "<<DSU\_marks;

cout<<"\nMarks in OOP : "<<OOP\_marks;

cout<<"\nMarks in DCO : "<<DCO\_marks;

cout<<"\nPercentage of student is :"<<per;

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

}

void student::show\_tabular()

{

cout<<rollno<<setw(5)<<" "<<name<<setw(10)<<DTM\_marks<<setw(5)<<PDB\_marks<<setw(5)<<DSU\_marks<<setw(5)<<OOP\_marks<<setw(6)<<DCO\_marks<<setw(8)<<per<<setw(10)<<" "<<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<<"Wrong choice";

}

}while(ch!='3');

return 0;

}

void write\_student()

{

student st;

ofstream outFile;

outFile.open("stud.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("stud.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("stud.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("stud.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("stud.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("stud.dat");

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

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

getch();

}

void class\_result()

{

student st;

ifstream inFile;

inFile.open("stud.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<<"========================================================\n";

cout<<"R.No NAME DTM PDB DSU OOP DCO PERCENTAGE 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\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 : SYIF ";

cout<<"\n\t ROLL NO. :33 \t & \t 21 ";

cout<<"\n\t SUBJECT : OBJECT ORIENTED PROGRAMMING USING 'C++'";

cout<<"\n\t COLLEGE: SANDIP POLYTECHNIC";

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 of Program:-

