**Assignment 8:**

Write a program in C++ to implement sequential file for students' database and perform

following operations on it

i) Create Database

ii) Display Database

iii) Add a record

iv) Delete a record

v) Modify a record

#include<iostream>

#include<stdio.h>

#include<stdlib.h>

#include<fstream>

#include<iomanip>

using namespace std;

class student

{

string name,dob;

float m1,m2;

int rollno;

public :

void input()

{

cout<<"\nEnter the Roll No. : ";

cin>>rollno;

cout<<"\nEnter the Name : ";

cin>>name;

cout<<"\nEnter the DOB : ";

cin>>dob;

cout<<"\nEnter the Marks 1 : ";

cin>>m1;

cout<<"\nEnter the Marks 2 : ";

cin>>m2;

}

void modify()

{

cout<<"\nStudent Roll No. : "<<rollno;

cout<<"\n\nEnter the Name : ";

cin>>name;

cout<<"\nEnter the DOB : ";

cin>>dob;

cout<<"\nEnter the Marks 1 : ";

cin>>m1;

cout<<"\nEnter the Marks 2 : ";

cin>>m2;

}

void display()

{

cout<<"\n Roll No. : "<<rollno;

cout<<"\n Name : "<<name;

cout<<"\n DOB : "<<dob;

cout<<"\n Marks 1 : "<<m1;

cout<<"\n Marks 2 : "<<m2;

}

void report()

{

printf("%-15d%-18s%-18s%-8.2f%-8.2f\n",rollno,name.c\_str(),dob.c\_str(),m1,m2);

}

int roll()

{

return rollno;

}

friend fstream & operator >> (fstream &in,student &a);

friend fstream & operator << (fstream &out,student &a);

};

fstream & operator >> (fstream &in,student &a)

{

in>>a.name>>a.dob>>a.m1>>a.m2>>a.rollno;

return in;

}

fstream & operator << (fstream &out,student &a)

{

out<<" "<<a.name<<" "<<a.dob<<" "<<a.m1<<" "<<a.m2<<" "<<a.rollno;

return out;

}

void create\_student()

{

fstream fp;

student st;

char ch;

cout<<"\n\n";

cout<<"\n\n\tCREATE STUDENT RECORD... ";

fp.open("student.txt",ios::trunc|ios::out);

do

{

st.input();

fp<<st;

cout<<"\n\ndo you want to add more record..(y/n?)";

cin>>ch;

}while(ch=='y'||ch=='Y');

fp.close();

}

void insert\_student()

{

fstream fp;

student st;

char ch;

cout<<"\n\n";

cout<<"\n\n\tINSERT STUDENT RECORD... ";

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

do

{

st.input();

fp<<st;

cout<<"\n\ndo you want to add more record..(y/n?)";

cin>>ch;

}while(ch=='y'||ch=='Y');

fp.close();

}

void display\_student()

{

fstream fp;

student st;

int n;

int found=0;

cout<<"\n\n";

cout<<"\n\n\tSEARCH STUDENT RECORD... ";

cout<<"\n\n\tEnter The Roll No. of The student : ";

cin>>n;

cout<<"\nSTUDENT DETAILS\n";

int flag=0;

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

while(!fp.eof())

{

fp>>st;

if(st.roll()==n)

{

st.display();

flag=1;

}

}

fp.close();

if(flag==0)

cout<<"\n\nStudent does not exist";

;

}

void modify\_student()

{

fstream fp,fp2;

student st;

int n;

int found=0;

cout<<"\n\n";;

cout<<"\n\n\tMODIFY STUDENT RECORD... ";

cout<<"\n\n\tEnter The Roll No. of The student : ";

cin>>n;

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

fp2.open("temp.txt",ios::out);

while(fp.eof()==0 && found==0)

{

fp>>st;

if(st.roll()==n)

{

st.display();

cout<<"\nEnter The New Details of student"<<endl;

st.modify();

fp2<<st;

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

found=1;

}

else { fp2<<st;}

}

fp.close();

fp2.close();

remove("student.txt");

rename("temp.txt","student.txt");

if(found==0)

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

}

void delete\_student()

{

fstream fp;

student st;

int n;

int flag=0;

cout<<"\n\n";

cout<<"\n\n\n\tDELETE STUDENT...";

cout<<"\n\nEnter The Roll No. of the Student You Want To Delete : ";

cin>>n;

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

fstream fp2;

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

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

while(!fp.eof())

{

fp>>st;

if(st.roll()!=n)

fp2<<st;

else

flag=1;

}

fp2.close();

fp.close();

remove("student.txt");

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

if(flag==1)

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

else

cout<<"\n\nRecord not found";

}

void display\_all()

{

fstream fp;

student st;

cout<<"\n\n";

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

if(!fp)

{

cout<<"ERROR!!! FILE COULD NOT BE OPEN ";

return;

}

cout<<"\n\n\t\tSTUDENT LIST\n\n";

cout<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n";

printf("%-15s%-18s%-18s%-8s%-8s\n","Roll No.","Name","DOB","M1","M2");

cout<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n";

while(!fp.eof())

{

fp>>st;

st.report();

}

fp.close();

}

int menu()

{

int o=0,o1;

printf("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

printf("\n1.Create Database");

printf("\n2.Display Database");

printf("\n3.Display Record");

printf("\n4.Insert Record");

printf("\n5.Delete Record");

printf("\n6.Modify Record");

printf("\n0.Exit");

printf("\n\nEnter your choice : ");

scanf("%d",&o1);

if(o1==0) exit(0);

else if(o1>-1 && o1<7) {}

else printf("\nERROR...!!!");

return o1;

}

int main(int argc, char const \*argv[])

{ int o=4;

while(o!=0)

{

o=menu();

switch(o)

{

case 1 : create\_student();

break;

case 2 : display\_all();

break;

case 3 : display\_student();

break;

case 4 : insert\_student();

break;

case 5 : delete\_student();

break;

case 6 : modify\_student();

break;

}

}

return 0;

}