#include <cstdlib>

#include <iostream>

#include <fstream>

#include <string.h>

#include <time.h>

using namespace std;

char f[10] = "f";

char s[10] = "s";

int addr, ad, flag, f1, d, m, i, amt;

float tamt;

class login

{

public:

char id[100];

char pass[100];

char password[10];

void getid()

{

cout << "\nEnter your id:";

cin >> id;

cout << "Enter the Password: ";

cin >> password;

cout << "\n";

strcpy(pass,password);

}

void displayid()

{

cout << "\n|" << "User ID:" << "\t" << "|" << "Password\n";

cout << "|" << id << "\t\t" << "|" << pass << "\n\n";

}

};

class Detail

{

public:

int tno;

char tname[100];

char bp[100];

char dest[100];

int c1,c1fare;

int c2,c2fare;

int d,m,y;

void getDetail()

{

cout << "\n--Add New details--\n";

cout << "Train no: ";

cin >> tno;

cout << "Train Name: ";

cin >> tname;

cout << "Boarding point: ";

cin >> bp;

cout << "Destination pt: ";

cin >> dest;

cout << "No of seats in first class & fare per ticket: ";

cin >> c1 >> c1fare;

cout << "No of seats in second class & fare per ticket: ";

cin >> c2 >> c2fare;

cout << "Date of travel\n";

cout << "Day: ";

cin >> d;

cout << "Month: ";

cin >> m;

cout << "Year: ";

cin >> y;

}

void displaydetail()

{

cout << "\n|Train No." << "\t" << "|Train Name" << "\t" << "|Boarding pt." << "\t" << "|Destination pt." <<"\t";

cout << "|F-Class" << "\t"<< "|F-Class Fare" << "\t" << "|S-Class" << "\t" << "|S-Class Fare" <<"\t";

cout << "|Day" << "-" << "Month" << "-" << "Year" << "\n";

cout << "|" << tno << "\t\t" << "|" << tname << "\t\t" << "|" << bp << "\t\t" << "|" << dest <<"\t\t\t";

cout << "|" << c1 << "\t\t" << "|"<< c1fare << "\t\t" << "|" << c2<< "\t\t" << "|" << c2fare <<"\t\t";

cout << "|" << d << "-" << m << "-" << y << "\n";

}

};

class reser

{

public:

int pnr;

int tno;

char tname[100];

char bp[10];

char dest[100];

char pname[10][100];

int age[20];

char clas[10];

int nosr;

int i;

int d,m,y;

int con;

float amc;

void getresdet()

{

cout<<"Enter the details as follows\n";

cout<<"Train no:";

cin>>tno;

cout<<"Train name:";

cin>>tname;

cout<<"Boarding point:";

cin>>bp;

cout<<"Destination pt:";

cin>>dest;

cout<<"No of seats required:";

cin>>nosr;

for(i=0;i<nosr;i++)

{

cout<<"Passenger name:";

cin >> pname[i];

cout<<"Passenger age:";

cin>>age[i];

}

cout<<"Enter the class f-first class s-second class:";

cin >> clas;

cout<<"Date of travel:";

cin>>d>>m>>y;

cout<<"Enter the concession category\n";

cout<<"1.Military\n2.Senior citizen\n";

cout<<"3.Children below 5 yrs\n4.None\n";

cin>>con;

cout<<"…………END OF GETTING DETAILS…………\n";

}

void displayresdet()

{

cout<<"Pnr no: "<<pnr;

cout<<"\nTrain no: "<<tno;

cout<<"\nTrain name: "<<tname;

cout<<"\nBoarding point: "<<bp;

cout<<"\nDestination pt: "<<dest;

cout<<"\nNo of seats reserved: "<<nosr;

for(i=0;i<nosr;i++)

{

cout<<"\nPassenger name: ";puts(pname[i]);

cout<<"Passenger age: "<<age[i];

}

cout<<"\nYour class: ";puts(clas);

cout<<"\nDate of reservation: "<<d<<"-"<<m<<"-"<<y;

cout<<"\nYour concession category: "<<con;

cout<<"\nYou must pay: "<<amc<<endl;

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

}

};

class canc

{

public:

int pnr;

int tno;

char tname[100];

char bp[10];

char dest[100];

char pname[10][100];

int age[20];

int i;

char clas[10];

int nosc;

int d, m, y;

float amr;

void getcancdet()

{

cout << "Enter the details as follows\n";

cout << "Pnr no:";

cin >> pnr;

cout << "Date of cancellation:";

cin >> d >> m >> y;

cout << "………..END OF GETTING DETAILS………..\n";

}

void displaycancdet()

{

cout << "…………………………………….\n";

cout << "…………………………………….\n";

cout << "Pnr no:" << pnr;

cout << "\nTrain no:" << tno;

cout << "\nTrain name:";

cout << tname;

cout << "Boarding point:";

cout << bp;

cout << "Destination pt:";

cout << dest;

cout << "\nYour class:";

cout << clas;

cout << "no of seats to be cancelled:" << nosc;

for (i = 0; i < nosc; i++)

{

cout << "Passenger name:";

cout << pname[i];

cout << "passenger age:" << age[i];

}

cout << "\nDate of cancellation:" << d << "-" << m << "-" << y;

cout << "\nYou can collect:" << amr << "rs" << endl;

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

cout << "………END OF CANCELLATION………….\n";

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

}

};

void manage();

void can();

void user();

void database();

void res();

void reserve();

void displaypassdetail();

void cancell();

void enquiry();

int main(void)

{

int ch;

cout << "----- RAILWAY RESERVATION SYSTEM ----- \n";

do

{

cout << "\n MAIN MENU \n";

cout << "1.Admin mode\n2.User mode\n3.Exit \n";

cout << "Enter your choice : ";

cin >> ch;

switch(ch)

{

case 1:

database();

break;

case 2:

user();

break;

default:

exit(0);

}

}while(ch<3);

return 0;

}

void database()

{

char password[10];

char pass[10] = "admin";

std::cout << "\nEnter the Admin Password: ";

std::cin >> password;

Detail a;

fstream f;

int ch;

char c;

if(strcmp(pass,password)!=0)

{

cout << "Enter the password correctly \n";

cout << "You are not permitted to login this mode\n";

}

if(strcmp(pass,password)==0)

{

char c;

do

{

cout << "\n --- ADMINISTRATOR MENU --- \n";

cout << "1. Create detail Database \n";

cout << "2. Add details \n";

cout << "3. Display details \n";

cout << "4. User Management \n";

cout << "5. Diplay Passenger details \n";

cout << "6. Return to Main Menu \n";

cout << "Enter your choice : ";

cin >> ch;

switch(ch)

{

case 1:

f.open("t.txt",ios::out);

do

{

a.getDetail();

f.write((char \*) & a,sizeof(a));

cout << "\nDo you want to add one more record?\n";

cout << "y-for Yes\nn-for No\n";

cin >> c;

}while(c=='y');

f.close();

break;

case 2:

f.open("t.txt",ios::in|ios::out|ios::app);

a.getDetail();

f.write((char \*) & a,sizeof(a));

f.close();

break;

case 3:

f.open("t.txt",ios::in|ios::out|ios::app);

f.seekg(0);

while(f.read((char \*) & a,sizeof(a)))

{

a.displaydetail();

}

f.close();

break;

case 4:

manage();

break;

case 5:

displaypassdetail();

break;

}

}while(ch<=5);

}

}

void reserve()

{

int ch;

do

{

cout << "1.Reserve\n2.Return to the main menu\n";

cout << "Enter your choice:";

cin >> ch;

cout << endl;

switch (ch)

{

case 1:

res();

break;

}

} while (ch == 1);

}

void res()

{

Detail a;

reser b;

fstream f1, f2;

time\_t t;

f1.open("t.txt", ios::in | ios::out);

f2.open("p.txt", ios::in | ios::out | ios::app);

int ch;

b.getresdet();

while (f1.read((char \*)&a, sizeof(a)))

{

if (a.tno == b.tno)

{

if (strcmp(b.clas, f) == 0)

{

if (a.c1 >= b.nosr)

{

amt = a.c1fare;

addr = f1.tellg();

ad = sizeof(a.c1);

f1.seekp(addr - (7 \* ad));

a.c1 = a.c1 - b.nosr;

f1.write((char \*)&a.c1, sizeof(a.c1));

if (b.con == 1)

{

cout << "Concession category:MILITARY PERSONNEL\n";

b.amc = b.nosr \* ((amt \* 50) / 100);

}

else if (b.con == 2)

{

cout << "Concession category:SENIOR CITIZEN\n";

b.amc = b.nosr \* ((amt \* 60) / 100);

}

else if (b.con == 3)

{

cout << "Concession category:CHILDERN BELOW FIVE\n";

b.amc = 0.0;

}

else if (b.con == 4)

{

cout << "You cannot get any concession\n";

b.amc = b.nosr \* amt;

}

srand((unsigned)time(&t));

b.pnr = rand();

f2.write((char \*)&b, sizeof(b));

b.displayresdet();

cout << "\n-----Your ticket is reserved-----\n";

}

else

{

cout << "\*\*\*\*\*\*\*\*\*\*Sorry req seats not available\*\*\*\*\*\*\*\*\n";

}

}

else if (strcmp(b.clas, s) == 0)

{

if (a.c2 >= b.nosr)

{

amt = a.c2fare;

addr = f1.tellg();

ad = sizeof(a.c2);

f1.seekp(addr - (5 \* ad));

a.c2 = a.c2 - b.nosr;

f1.write((char \*)&a.c2, sizeof(a.c2));

if (b.con == 1)

{

cout << "Concession category:MILITARY PRESONNEL\n";

b.amc = b.nosr \* ((amt \* 50) / 100);

}

else if (b.con == 2)

{

cout << "Concession category:SENIOR CITIZEN\n";

b.amc = b.nosr \* ((amt \* 60) / 100);

}

else if (b.con == 3)

{

cout << "Concession category:CHILDERN BELOW FIVE\n";

b.amc = 0.0;

}

else if (b.con == 4)

{

cout << "You cannot get any concession\n";

b.amc = b.nosr \* amt;

}

f2.write((char \*)&b, sizeof(b));

b.displayresdet();

cout << "\n-----Your ticket is reserved-----\n";

}

else

{

cout << "\*\*\*\*\*\*\*\*Sorry req no of seats not available\*\*\*\*\*\*\*\n";

}

}

}

else

{

flag = 0;

}

}

if (flag == 0)

{

cout << "!\n";

}

f1.close();

f2.close();

}

void displaypassdetail()

{

cout << "\n--------Passenger Details--------\n";

fstream f;

reser b;

f.open("p.txt",ios::in|ios::out);

f.seekg(0);

while(f.read((char \*) & b,sizeof(b)))

{

b.displayresdet();

}

f.close();

}

void enquiry()

{

fstream f;

f.open("t.txt",ios::in|ios::out);

Detail a;

while(f.read((char \*) & a,sizeof(a)))

{

a.displaydetail();

}

}

void cancell()

{

Detail a;

reser b;

canc c;

fstream f1, f2, f3;

f1.open("t.txt",ios::in|ios::out);

f2.open("p.txt",ios::in|ios::out);

f3.open("cn.txt",ios::in|ios::out);

cout<<"\*\*\*\*\*\*\*\*\*\*CANCELLATION MENU\*\*\*\*\*\*\*\*\*\n";

c.getcancdet();

while(f2.read((char \*) & b,sizeof(b)))

{

if (b.pnr == c.pnr)

{

c.tno = b.tno;

strcpy(c.tname, b.tname);

strcpy(c.bp, b.bp);

strcpy(c.dest, b.dest);

c.nosc = b.nosr;

for (int j = 0; j < c.nosc; j++)

{

strcpy(c.pname[j], b.pname[j]);

c.age[j] = b.age[j];

}

strcpy(c.clas, b.clas);

if (strcmp(c.clas, f) == 0)

{

while (f1.read((char \*)&a, sizeof(a)))

{

if (a.tno == c.tno)

{

a.c1 = a.c1 + c.nosc;

d = a.d;

m = a.m;

addr = f1.tellg();

ad = sizeof(a.c1);

f1.seekp(addr - (7 \* ad));

f1.write((char \*)&a.c1, sizeof(a.c1));

tamt = b.amc;

if ((c.d == d) && (c.m == m))

{

cout << "You are cancelling at the date of departure\n";

c.amr = tamt - ((tamt \* 60) / 100);

}

else if (c.m == m)

{

cout << "You are cancelling at the month of departure\n";

c.amr = tamt - ((tamt \* 50) / 100);

}

else if (m > c.m)

{

cout << "You are cancelling one month before the date of departure\n";

c.amr = tamt - ((tamt \* 20) / 100);

}

else

{

cout << "Cancelling after the departure\n";

cout << "Your request cannot be completed\n";

}

goto h;

c.displaycancdet();

}

}

}

else if (strcmp(c.clas, s) == 0)

{

while (f1.read((char \*)&a, sizeof(a)))

{

if (a.tno == c.tno)

{

a.c2 = a.c2 + c.nosc;

d = a.d;

m = a.m;

addr = f1.tellg();

ad = sizeof(a.c2);

f1.seekp(addr - (5 \* ad));

f1.write((char \*)&a.c2, sizeof(a.c2));

tamt = b.amc;

if ((c.d == d) && (c.m == m))

{

cout << "You are cancelling at the date of departure\n";

c.amr = tamt - ((tamt \* 60) / 100);

}

else if (c.m == m)

{

cout << "You are cancelling at the month of departure\n";

c.amr = tamt - ((tamt \* 50) / 100);

}

else if (m > c.m)

{

cout << "You are cancelling one month before the date of departure\n";

c.amr = tamt - ((tamt \* 20) / 100);

}

else

{

cout << "Cancelling after the departure\n";

cout << "Your request cannot be completed\n";

}

goto h;

c.displaycancdet();

}

}

}

}

else

{

flag = 0;

}

}

h:

if(flag==0)

{

cout << "Enter the correct pnr no\n";

}

f1.close();

f2.close();

f3.close();

}

void can()

{

int ch;

do

{

cout << "……………..CANCELLATION MENU………\n";

cout << "1.Cancel\n2.Return to the main menu\n";

cout << "Enter your choice:";

cin >> ch;

cout << endl;

switch (ch)

{

case 1:

cancell();

break;

}

} while (ch == 1);

}

void user()

{

login a;

int ch;

cout<<"\n-----Login User-----\n";

char password[10];

fstream f;

f.open("id.txt",ios::in|ios::out);

char id[100];

cout << "Enter your ID : ";

cin >> id;

cout << "Enter your Password : ";

cin >> password;

while(f.read((char \*) & a,sizeof(a)))

{

if((strcmp(a.id,id)==0)&&(strcmp(a.pass,password)==0))

{

do

{

cout<<"\n1.Reserve\n2.Cancel\n3.Enquiry\n4.Return to the main menu\n";

cout<<"Enter your choice:";

cin>>ch;

switch(ch)

{

case 1:

reserve();

break;

case 2:

cancell();

break;

case 3:

enquiry();

break;

}

}while(ch<=3);

}

else

{

d=1;

}

}

if(d==1)

{

cout<<"Enter your user id and password correctly\n";

}

}

void manage()

{

int ch;

fstream f;

char c;

login a;

cout<<"\n---WELCOME TO THE USER MANAGEMENT MENU---\n";

do

{

cout << "1. Create id database\n";

cout << "2. Add details\n";

cout << "3. Display details\n";

cout << "4. Return to the main menu\n";

cout << "Enter your choice: ";

cin>>ch;

switch(ch)

{

case 1:

f.open("id.txt",ios::out);

do

{

a.getid();

f.write((char \*) & a,sizeof(a));

cout << "Do you want to add one more record\n";

cout << "y-Yes\nn-No\n";

cin>>c;

}while(c == 'y');

f.close();

break;

case 2:

f.open("id.txt",ios::in|ios::out|ios::app);//open file to read , write,append to the file

a.getid();

f.write((char \*) & a,sizeof(a));

f.close();

break;

case 3:

f.open("id.txt",ios::in|ios::out);

f.seekg(0);//moves get pointer to a specified position//fstream library

while(f.read((char \*) & a,sizeof(a)))

{

a.displayid();

}

f.close();

break;

}

}while(ch<=3);

}