#include <iostream>

#include <string>

#include <fstream>

using namespace std;

class Student{

private:

string nm,div,add;

int rollno;

public:

Student(){

nm = "";

div="";

rollno=0;

add="";

}

void setDetails(int r,const string &n,const string &d,const string &a){

nm=n;

rollno=r;

div=d;

add=a;

}

void dispStudents(){

cout<<"Roll No : "<<rollno<<endl;

cout<<"Name : "<<nm<<endl;

cout<<"Division : "<<div<<endl;

cout<<"Address : "<<add<<endl;

}

int getRollno(){

return rollno;

}

void saveToFile(ofstream &file){

file<<rollno<<endl;

file<<nm<<endl;

file<<div<<endl;

file<<add<<endl;

}

void readFromFile(ifstream &file){

file>>rollno;

file>>nm;

file>>div;

file>>add;

}

};

void addStudents(){

Student std;

int roll;

string name,div,add;

cout<<"Enter the roll no of the Student : ";

cin>>roll;

cout<<"Enter the name of the Student : ";

cin>>name;

cout<<"Enter the division : ";

cin>>div;

cout<<"Enter the address : ";

cin>>add;

std.setDetails(roll,name,div,add);

ofstream file("students.txt",ios::app);

if(!file){

cout<<"Unable to open the file."<<endl;

}

else{

std.saveToFile(file);

file.close();

}

}

void deleteStudents(){

int roll;

cout<<"Enter the roll no to delete : ";

cin>>roll;

ifstream file("students.txt");

ofstream temp("temp.txt");

bool found = false;

Student std;

if(file.is\_open() && temp.is\_open()){

while(true){

std.readFromFile(file);

if(file.eof()) break;

if(std.getRollno() == roll){

found = true;

cout<<"Deleting Student"<<endl;

continue;

}

std.saveToFile(temp);

}

file.close();

temp.close();

remove("students.txt");

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

if(found){

cout<<"Student Deleted Successfully."<<endl;

}

else{

cout<<"Student not found."<<endl;

}

}

else{

cout<<"Unable to find the student"<<endl;

}

}

void dispStudent(){

int roll;

cout<<"Enter the roll no of the student : ";

cin>>roll;

ifstream fin("students.txt");

bool found = false;

Student std;

if(fin.is\_open()){

while(true){

std.readFromFile(fin);

if(fin.eof()) break;

if(std.getRollno() == roll){

found = true;

std.dispStudents();

break;

}

}

fin.close();

}

else{

cout<<"Unable to open the file"<<endl;

}

}

int main(){

char ch;

do{

cout<<"Student Information System"<<endl;

cout<<"1.Add student \n 2.Delete Student \n 3.Display student \n 4.Exit"<<endl;

cin>>ch;

switch(ch){

case '1':

addStudents();

break;

case '2':

deleteStudents();

break;

case '3':

dispStudent();

break;

case '4':

cout<<"Exiting"<<endl;

break;

default:

cout<<"Invalid Choice"<<endl;

}

}

while(ch!='4');

return 0;

}