Advanced Data Structures Assignment

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Problem Statement:

Department maintains a student information. The file contains roll number, name, division and address. Allow user to add, delete information of student. Display information of particular employee. If record of student does not exist an appropriate message is displayed. If it is, then the system displays the student details. Use sequential file to main the data.

Code:

#include<iostream>

#include<fstream>

#include<string.h>

using namespace std;

int n,i;

class emp{

public:

int roll\_no;

char div;

char address[100],name[50];

void insert(int );

void display();

void getname(int);

char\* getaddress(int);

}o[30];

void emp :: insert(int i){

cout<<"\nRoll No. : ";

cin>>o[i].roll\_no;

cout<<"Division : ";

cin>>o[i].div;

cout<<"Name : ";

ws(cin);

cin.getline(o[i].name,50);

cout<<"Address : ";

cin.getline(o[i].address,100);

}

void emp :: display(){

cout<<"\nRoll no. : "<<o[i].roll\_no<<endl;

cout<<"Division : "<<o[i].div<<endl;

cout<<"Name : "<<o[i].name<<endl;

cout<<"Address : "<<o[i].address<<endl;

}

void emp :: getname(int j){

int f=0;

int h = max(strlen(o[j].name),strlen(o[j+1].name));

while(f<h)

{

o[j].name[f]=o[j+1].name[f];

f++;

}

}

char\* emp :: getaddress(int j){

int f=0;

int h = max(strlen(o[j].address),strlen(o[j+1].address));

while(f<h)

{

o[j].address[f]=o[j+1].address[f];

f++;

}

}

int main(){

emp obj;

fstream f;

int ch,v,id,flag=0,divi;

do{

cout<<"\n1:Create\n2:Display\n3:Insert\n4:Update\n5:Delete\nEnter your choice : ";

cin>>ch;

switch(ch){

case 1 :cout<<"Enter number of records : ";

cin>>n;

f.open("abc.txt",ios::app);

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

{

obj.insert(i);

f.write((char \*)&o[i],sizeof(o[i]));

}

v=i;

break;

case 2 : cout<<"\nDetails of file are \n ";

f.seekg(0);

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

{

f.read((char \*)&o[i],sizeof(o[i]));

obj.display();

}

break;

case 3 : obj.insert(v);

f.write((char \*)&o[v],sizeof(o[v]));

v++; n++;

break;

case 4 :cout<<"Enter the roll no whose info is to be updated : ";

cin>>id;

cout<<"Enter the divisoin : ";

cin>>divi;

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

{

f.read((char \*)&o[i],sizeof(o[i]));

if(o[i].roll\_no==id && o[i].div==divi)

{

cout<<"Enter the updated details \n ";

cout<<"Division : ";

cin>>o[i].div;

cout<<"\nName : ";

ws(cin);

cin.getline(o[i].name,50);

cout<<"\nAddress : ";

cin.getline(o[i].address,100);

f.write((char \*)&o[i],sizeof(o[i]));

flag=1;

break;

}

else{

continue;

}

}

if(flag==0)

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

// f.close();

break;

case 5 : cout<<"Enter the roll\_no which is to be deleted : ";

cin>>id;

cout<<"Enter the division : ";

cin>>divi;

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

{

f.read((char \*)&o[i],sizeof(o[i]));

if(o[i].roll\_no==id && o[i].div==divi)

{

for(int j=i;j<n;j++)

{

o[j].roll\_no=o[j+1].roll\_no;

o[j].div=o[j+1].div;

obj.getname(j);

obj.getaddress(j);

break;

}

}

}

n--;

break;

}

}while(ch!=0);

}

Output:

1:Create

2:Display

3:Insert

4:Update

5:Delete

Enter your choice : 1

Enter number of records : 4

Roll No. : 12

Division : a

Name : abc

Address : oune

Roll No. : 34

Division : b

Name : xyz

Address : delhi

Roll No. : 56

Division : c

Name : stu

Address : umbai

Roll No. : 98

Division : x

Name : asd

Address : chennai

1:Create

2:Display

3:Insert

4:Update

5:Delete

Enter your choice : 2

Details of file are

Roll no. : 12

Division : a

Name : abc

Address : oune

Roll no. : 34

Division : b

Name : xyz

Address : delhi

Roll no. : 56

Division : c

Name : stu

Address : umbai

Roll no. : 98

Division : x

Name : asd

Address : chennai

1:Create

2:Display

3:Insert

4:Update

5:Delete

Enter your choice : 3

Roll No. : 56

Division : c

Name : rty

Address : fghu

1:Create

2:Display

3:Insert

4:Update

5:Delete

Enter your choice : 5

Enter the roll\_no which is to be deleted : 98

Enter the division : x

1:Create

2:Display

3:Insert

4:Update

5:Delete

Enter your choice : 2

Details of file are

Roll no. : 12

Division : a

Name : abc

Address : oune

Roll no. : 34

Division : b

Name : xyz

Address : delhi

Roll no. : 56

Division : c

Name : stu

Address : umbai

Roll no. : 56

Division : c

Name : rty

Address : fghu

1:Create

2:Display

3:Insert

4:Update

5:Delete

Enter your choice : 0