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#include<iostream>
#include<fstream>
#include<cstdio>
using namespace std;

class student {
public:
    int rollno;
    char name[50];
    char add[50];
    char div[5];

    void setData() {
        cout<<"Enter Roll no: ";
        cin>>rollno;
        cout<<"Enter Name: ";
        cin>>name;
        cout<<"Address of student: ";
        cin>>add;
        cout<<"Division of student: ";
        cin>>div;
    }

    void showData() {
        cout<<"\n Roll no. of student: "<<rollno;
        cout<<"\n Name of the student: "<<name;
        cout<<"\n Address of student: "<<add;
        cout<<"\n Division of student: "<<div;
    }

    int retrrollno() {
        return rollno;
    }
};

void write_record() {
    ofstream outfile;
    outfile.open("StudentDatabase", ios::binary | ios::app);
    student obj;
    obj.setData();
    outfile.write((char*)&obj, sizeof(obj));
    outfile.close();
}

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void display_record() {
    ifstream infile;
    infile.open("StudentDatabase", ios::binary);
    student obj;
    while(infile.read((char*)&obj, sizeof(obj))) {
        obj.showData();
    }
    infile.close();
}

void search_record(int n) {
    bool flag=false;
    ifstream infile;
    infile.open("StudentDatabase", ios::binary);
    student obj;
    while (infile.read((char*)&obj, sizeof(obj))) {
        if(obj.rollno==n) {
            flag=true;
            obj.showData();
            break;
        }
    }
    if(flag==false) {
        cout<<"Record for roll no. is not found in the file.";
    }
}

void delete_record(int n) {
    student obj;
    ifstream infile;
    infile.open("StudentDatabase", ios::binary);
    ofstream outfile;
    outfile.open("StudentNewData", ios::out | ios::binary);
    while(infile.read((char*)&obj, sizeof(obj))) {
        if(obj.rollno() != n) {
            outfile.write((char*)&obj, sizeof(obj));
        }
    }
    infile.close();
    outfile.close();
    remove("StudentDatabase");
    rename("StudentNewData", "StudentDatabase");
}

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int main() {
    int ch;
    do {
        cout<<"\n*****File Operations*****\n 1.Add Record. \n 2.Display Record. \n 3.Search a
particular Record. \n 4.Delete particular Record.";
        cout<<"\n Enter your choice: ";
        cin>>ch;
        switch(ch) {
            case 1:
                cout<<"Enter total no. of records you want to store in a file: ";
                int n;
                cin>>n;
                for(int i=0; i<n; i++) {
                    write_record();
                }
                break;
            case 2:
                cout<<"\n List of records: ";
                display_record();
                break;
            case 3:
                cout<<"Enter student roll no. whose record you want search: ";
                int s;
                cin>>s;
                search_record(s);
                break;
            case 4:
                cout<<"Enter student roll no. whose record you want delete: ";
                int t;
                cin>>t;
                delete_record(t);
                cout<<"Record Deleted Successfully!!";
                break;
            case 5:
                return 0;
        }
    } while(ch != 6);
}

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