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#include <iostream>
#include <string>
using namespace std;

#define MAX 100

// ENUM
enum Department { CS, IT, SE, IS };

// STRUCTS
struct Date { int day, month, year; };
struct Address { string city; string country; };

struct Student {
    int id;
    string name;
    float gpa;
    Department dept;
    Date dob;
    Address address;
};

// PROTOTYPES
void addStudent(Student[], int&);
void listStudents(Student[], int);
void searchStudent(Student[], int);
void updateGPA(Student&);
void displayStudent(Student);
string getDeptName(Department);

// MAIN
int main() {
    Student students[MAX];
    int count = 0;
    int choice;

    do {
        cout << "\n==== Student Record System ==== \n";
        cout << "1. Add Student\n2. List\n3. Search\n4. Update GPA\n0. Exit\n";
        cin >> choice;

        switch(choice) {
            case 1: addStudent(students, count); break;
            case 2: listStudents(students, count); break;
            case 3: searchStudent(students, count); break;
            case 4: {
                int id;
                cin >> id;
                for(int i=0; i<count; i++)
                    if(students[i].id==id) updateGPA(students[i]);
                break;
            }
        }
    } while(choice!=0);
}

// ADD STUDENT
void addStudent(Student s[], int &count) {
    if(count >= MAX) { cout << "Full\n"; return; }

    cout << "ID: "; cin >> s[count].id;
    cin.ignore();
}

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    cout << "Name: "; getline(cin, s[count].name);
    cout << "GPA: "; cin >> s[count].gpa;

    int d; cin >> d;
    s[count].dept = (Department)d;

    cin >> s[count].dob.day >> s[count].dob.month >> s[count].dob.year;

    cin.ignore();
    getline(cin, s[count].address.city);
    getline(cin, s[count].address.country);

    count++;
}

// LIST
void listStudents(Student s[], int c) {
    for(int i=0;i<c;i++) displayStudent(s[i]);
}

// DISPLAY
void displayStudent(Student s) {
    cout << s.id << " " << s.name << " " << s.gpa << endl;
}

// SEARCH
void searchStudent(Student s[], int c) {
    int id; cin >> id;
    for(int i=0;i<c;i++)
        if(s[i].id==id) displayStudent(s[i]);
}

// UPDATE
void updateGPA(Student &s) {
    cin >> s.gpa;
}

// ENUM HELPER
string getDeptName(Department d) {
    switch(d) {
        case CS: return "CS";
        case IT: return "IT";
        case SE: return "SE";
        default: return "IS";
    }
}

```