Homework 1 CSE 283
Due: 11:59pm, Thursday, Feb. 4

Develop your design for a program to create and manage a data base of students and their classes.
Each student in the university may take a different number of courses, so the registrar has decided to use a linked list to store each student's class schedule, and to use an array of structures to represent the whole student body.
The structure for the array of students contains a student ID and a pointer to a class structure.
The structure for each class contains the name of the course, the section number, the number of credits, and a pointer to the next class structure in the linked list of classes.
An example of this data structure follows:
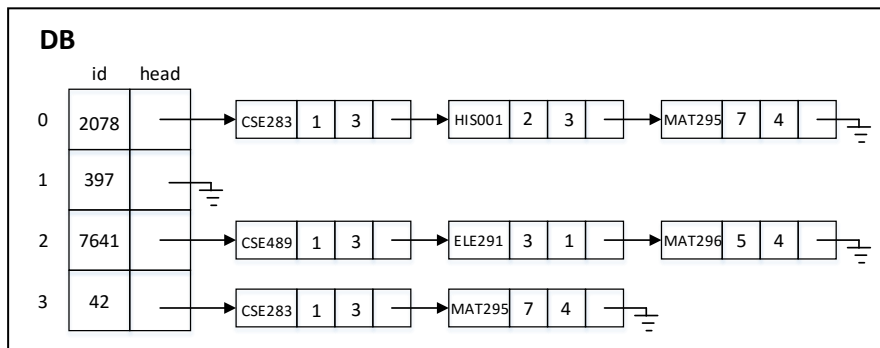
The records show that the first student (array element 0, id 2078) is taking Section 1 of CSE283 for 3 credits, Section 2 of HIS001 for 3 credits, and Section 7 of MAT295 for 4 credits; the second student (array element 1, id 397) is not enrolled in any classes, and so on.
Define the necessary data types for creating each of these data structures. Provide functions for creating the original array of student ID numbers, inserting a student's initial class schedule, adding a course, dropping a course and printing out information. Design a menu-driven main function to use these structures and functions.
Write a C++ program that will:

1. Add a student to the data base.
2. Add a course to a student in the data base.
3. Find and remove a student from the data base.
4. Find and remove a course for a student in the data base.
5. Return the number of credits for a student.
6. Check to see if a student is in the DB.
7. Check to see if a student is taking a specific course.
8. Print out the courses for a student in the data base.
9. Print out all the students in the data base.
10. Print out all of the students and all the courses they are taking in the data base.
11. (optional; bonus) Sort students and sort courses of each students.

It is important for your program to take care of special/boundary cases. For example, if a course already exists in a student's course list, then it should not be added again; if a student already exists in the data base, then the student should not be added again.

You can use string data type as long as you #include <string>. "CSE283" is of string type.