C - Assignment 09 (100 pts)

Preparation

You will need all the functions from the previous assignment, as well as the structure `course`:

- Department (string, 15 characters)
- Course number (integer, 4 digits, leading 0 if necessary)
- Course title (string, 30 characters)
- Credits (short, 1 digit)

Exercise 01 (20 pts)

Write a function `saveAllCoursesText()` which receives an array of `course` pointers and the array's size, then outputs the content of the array in text format to a file named "courses.txt".

- Save the entire structure on 1 line (all the members of the structure should be saved in 1 fprintf() command)

Exercise 02 (20 pts)

Write a function `loadAllCoursesText()` which receives a predefined array of `course` pointers and fills it with the data loaded from "courses.txt" created in Exercise 01. We suppose that the number of records is always less than or equal to the size of the array.

Exercise 03 (20 pts)

Write a function `saveAllCoursesData()` which receives an array of `course` pointers and the array's size, then outputs the content of the array in binary format to a file named "courses.dat".

Exercise 04 (20 pts)

Write a function `loadAllCoursesData()` which receives a predefined array of `course` pointers and fills it with the data loaded from "courses.dat" created in Exercise 03. We suppose that the number of records is always less than or equal to the size of the array.

Exercise 05 (20 pts)

Write a `main()` function using the following requirements:

- Define a `SIZE` constant (the value is irrelevant, but for testing, you may want to keep it small enough – no bigger than 5)

- Create an array of course pointers using `SIZE`
- Dynamically allocate each element of the array
- Call `inputAllCourses()` (from the previous assignment)
- Save the array using `saveAllCoursesText()` and `saveAllCoursesData()`.
- Load the data using `loadAllCoursesText()` and `loadAllCoursesData()`.
    - Check that the correct data is being loaded for each function by calling `printAllCourses()` (from the previous assignment)
    - Use 2 arrays, one for each function.

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