

Exercise I (30 points)

- Write the function **"findAndReplaceAll"** with three arguments (the name of a text file and two strings), which replaces all the occurrences of the first string with the second, in the given file and returns the number of replacements. The two strings are not necessarily of same length.

Example : the call `findAndReplaceAll("exo1.txt", "jour", "soir")` returns 3.

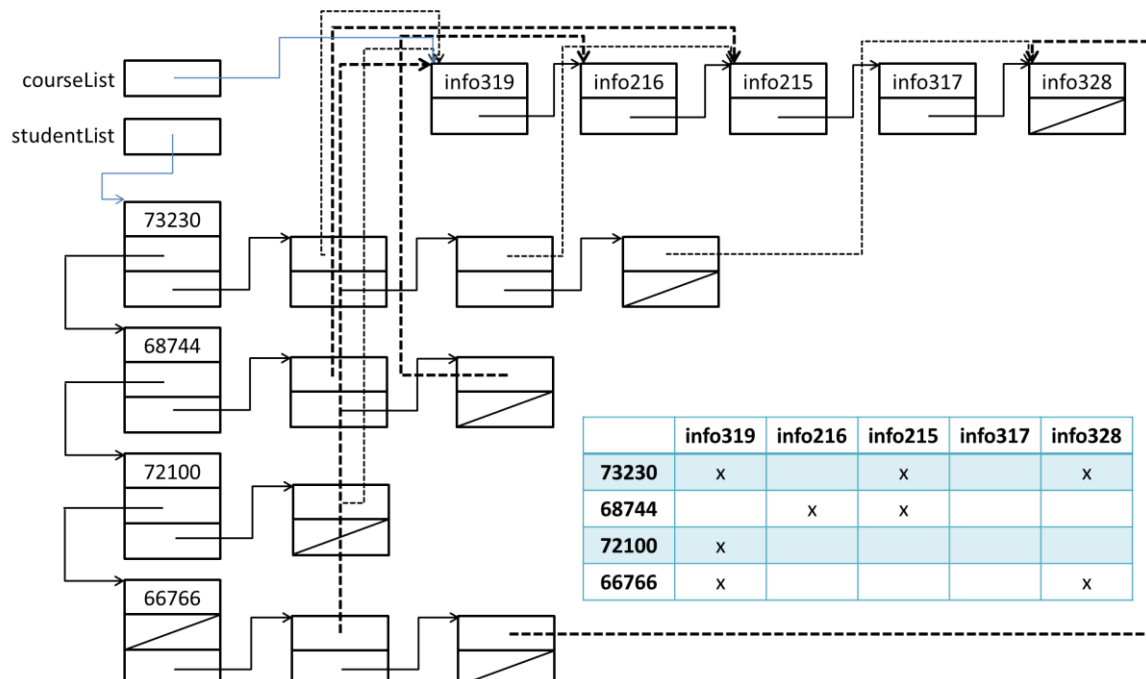
The file "exo1.txt" before calling the function <code>findAndReplaceAll</code> :	The file "exo1.txt" after calling the function <code>findAndReplaceAll</code> :
Bonjour monsieur, bonjour madame, bonjour joulou.	Bonsoir monsieur, bonsoir madame, bonsoir joulou.

Exercise II (40 points)

In an institution of higher education, open courses, students and student enrollments in open courses are represented as follows:

- a linked list for courses, containing for each course its code (alphanumeric), and
- a linked list for students, containing for each student his id (an integer) and a pointer to a linked list describing the different courses he is following.

The schema below shows an example of the foregoing description. In the figure there are five open courses and four students. To facilitate understanding of the scheme, it is translated by a matrix that connects students to their courses. The matrix is only given to support the figure and **should not** be used in the solution.



- Define all the necessary data types, translating in C language, the previous description.
- Write the function **"deleteVoidCourses"** that removes from the list of courses all the courses who are followed by no one.

The End