Lebanese University
Faculty of Sciences
- Section I -

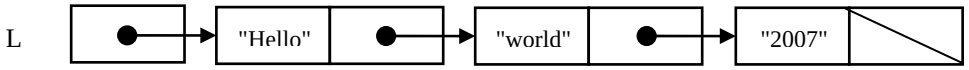
Final 2006/2007
Duration : 2 hours
Closed book examination

INFO 206
IMPERATIVE PROGRAMMING II

Exercise 1

Write a function that displays the elements (strings) of a simple linked list in reverse order.

Example:



The result is: "2007 world Hello"

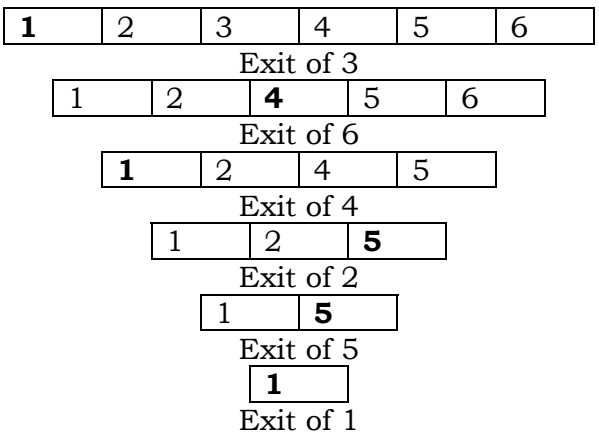
Exercise 2

To play the AM-STRAM-GRAM game, N children form a circle, choose a child to be the first, start counting from this child till the k^{th} child who leaves the circle, then we continue counting from current child till the next k^{th} child who will leave the circle , and so on until no child is left in the circle.

We represent the circle of children by a circular list (the last element points to the first one):

1. Define the adequate data structure,
2. Write a function that displays the set of children in the order of their removal from the circle. We suppose that a child is represented by an integer number (the list becomes a list of integers) and the number k is a parameter of the function.

Example: for k = 3 and the following list



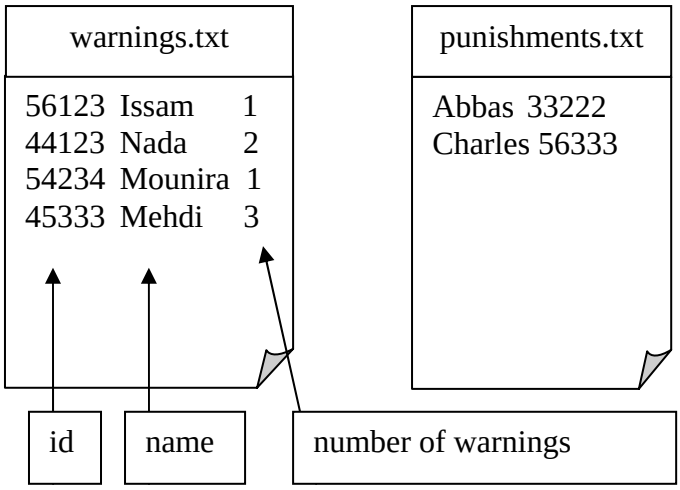
We mark the current element in **bold**. Thus the result is: 3, 6, 4, 2, 5, 1.

Exercise 3

The administration of the university records information concerning the "warned" students in a file "warnings.txt".

Write the function void warn (int id, char * name) which adds a student being given his number and name, to this file by taking account of the following diagram:

If the student already exists in the file, we must only increment his number of warnings, but if this number becomes 4, then the student will be removed from file "warnings.txt" and added in another file "punishments.txt".



GOOD LUCK