Exercise I [40 min – 25 points]

Write a function mute() which, given a file name and a string, replaces each word in the file, present in the string, with as many asterix characters as the length of the replaced word. You may not rewrite the file. You should alter the file content.

Example:

file (before)	string	file (after)
hello **world**	"happy vacation world"	hello *****
I am so **happy** to be in this faculty		I am so ***** to be in this faculty
I love programming		I love programming
happy summer **vacation**		***** summer *******

Exercise II [80 min – 45 points]

It is football season. Below is the file "euro2016.txt" containing the groups of the Euro2016. Each group on a line, the team names are separated by tabs (character '\t'):

```
A    France      Switzerland        Romania              Albania
B    Wales       England            Russia               Slovakia
C    Poland      Northern_Ireland   Germany              Ukraine
D    Croatia     Czech_Republic     Spain                Turkey
E    Belgium     Italy              Republic_of_Ireland  Sweden
F    Austria     Hungary            Iceland              Portugal
```

1. Define the type Team containing : the group letter, the team name, the numbers of wins, the number of plays and the points.

2. Define the type Node for a doubly linked list of Team (the data field is of type Team).

3. Write the function Push() which pushes a new node to the head of a given doubly linked list of Team, given the field values.

4. Write the function load() which constructs and returns a doubly linked list of Team, using Push function, out of the file "euro2016.txt". At the moment of construction, the number of wins, the number of plays and the points for each team are all set to zero.

5. Write the function match() which, given two team names, their respective scores, and a doubly linked list of Team, updates the list in the following manner:
    -   the number of plays is incremented by 1 for both teams,
    -   the number of wins is incremented by 1 for the winner team (if any),
    -   the number of points is incremented by 3 for the winner team, or, by 1 for both teams in case of equality,
    -   the list must be maintained sorted descending according to the number of points, thus after updating the numbers of the teams, the nodes must be moved to their new places. You are not allowed to deallocate nor allocate nodes, neither to exchange the data fields in nodes.