

## A European Football League

The file **matches.txt** is a text file containing results of football matches of a fantasy European league. Each line contains the result of a match. The format of each line is as follows:

*Team A, Team B, Goals A, Goals B*

For instance:

```
Inter Milan, Arsenal, 2,1
Chelsea, Real Madrid, 2,2
...
```

There are 10 teams and 180 matches.

You are required to create the following functions:

1. Convert the text file **matches.txt** into a binary file **matches.bin** (20 marks)  
Define a record structure to store the result of a single match, then read the text file and convert it into a binary file.  
*IMPORTANT: if you want to use fscanf() to read the text file, use the following format string "%[^,] , %[^,] , %i , %i" instead of "%s , %s , %i , %i"*  
*The first one works even if the name of the team contains spaces (the second one uses the space as a delimiter, so it will not work).*

2. Show the table  
Create a function that reads the binary files of matches and shows the league table.  
The table contains, for each team, the name of the team, number of points, goals scored and goals conceded. Give 3 points for a win and 1 point for a draw.

(25 marks for the table)

(10 extra if the table is sorted by points)

Sample output:

```
League Table
=====
1. Inter_Milan          45    49    12
2. Arsenal              41    77    23
3. Chelsea              39    55     9
...
```

3. Create a function to insert a new result, asking the user to insert team A, team B, Goals A, Goals B. You are free to add new teams as well. (15 marks)
4. Create a function to display the match with the highest number of goal scored. (15 marks)
5. Create a function that displays all the matches of a team (the name of the team is inserted by the user via keyboard). (15 marks)
6. Implement a text menu. (10 marks)

**Total marks: 100 + 10 extra**