Assignment: Football League Management System using Linked Lists

Course: Data Structures and Algorithm I Lab

Topic: Linked List

Total Marks: 5

Deadline: 17/10/25

You are assigned to build a simplified Football League Management System (for example, La Liga) using linked lists in C.

In this system:

- Each Team will maintain information such as its name, year of formation, and yearly revenue.
- Each team will also maintain its own list of Players who are currently under contract.
- Each player will have personal details such as name, age, rating, salary, and playing position.
- The league should support multiple teams, and each team may have multiple players. Your implementation should be fully dynamic, using linked list concepts (no arrays for data storage).

Program Requirements:
1. Add a New Team – Insert a team into the league at a specific position in the list. Input details such as name, year of formation, and yearly revenue.
2. Delete a Team – Delete a team by its name. All players belonging to that team must also be removed.
3. Display All Teams and Players – Show a list of all registered teams along with their player information. If a team has no players, display an appropriate message.
4. Swap Two Teams – Swap the positions of two teams in the league's team list.
5. Add a Player to a Team – Add a player under contract to a specific team. Input player details such as name, age, rating, salary, and position.
6. Delete a Player from a Team – Remove a player by name from a specified team.

Program Behavior Example

La Liga Database Initializing...

What do you want to do?
1. Create club
2. Delete club
3. View Club info
4. Swap Clubs
5. Add player
6. Delete player

Example 1: Add Two Clubs

Choice: 1
Enter Name: Barcelona
Enter Year of Formation: 1899
Enter Yearly Revenue: 780.4
Enter position in the list: 1

Choice: 1
Enter Name: Real Madrid
Enter Year of Formation: 1902
Enter Yearly Revenue: 850.5
Enter position in the list: 2

Example 2: Add Players to Teams

Choice: 5
Player Name: Pedri
Age of Player: 21
Player rating: 88
Yearly Salary: 8.5
Position: Midfielder
Club contract: Barcelona

Choice: 5
Player Name: Vinicius Jr
Age of Player: 23
Player rating: 92
Yearly Salary: 10.2
Position: Forward

Club contract: Real Madrid

Example 3: View All Teams and Players

Choice: 3

List of Teams:
Barcelona
Year: 1899
Revenue: 780.400000
List of players in contract:
Pedri
Age: 21, Rating: 88, Salary: 8.500000, Position: Midfielder

Real Madrid
Year: 1902
Revenue: 850.500000
List of players in contract:
Vinicius Jr
Age: 23, Rating: 92, Salary: 10.200000, Position: Forward

Example 4: Swap Two Teams

Choice: 4
Which two positions do you want to swap?
1 2
Teams swapped successfully.

Example 5: Delete a Player

Choice: 6
Enter the name of the player to be deleted: Pedri
Enter the Team name of the player: Barcelona
Player deleted successfully.

Example 6: Delete a Team

Choice: 2
Enter team name to be deleted: Real Madrid

Team deleted successfully.

Example 7: View After Deletions

Choice: 3

List of Teams:
Barcelona
Year: 1899
Revenue: 780.400000
No player contracts!

Submission Instructions:
- Submit a zip file named: YourStudentID_LeagueManagement.zip
- Your zip should include your C/C++ source file and sample input/output screenshots.
- Plagiarism will result in zero marks.
- Code must compile and run without errors.