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Course : BBM203

Experiment : 2018 Autumn Semester Programming Assignment 3

Subject : Linked Lists

Data Due : 16th December 2018

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1. SOFTWARE DESIGN NOTES

1.1. Description of the program

The program basically uses 4 kinds of linked nodes. One is for players and has the name of the player, the team he/she's playing for, the address of the opponents' linked list and the link. Other one is for the opponents' linked list that holds the opponent team name, minute of the goal, match's ID and two links: previous and the next nodes' links. There is one node type for both goal scorer and hattricks. It holds only the name and the link. Finally, there is a team node that holds the name of the team and the link in order to list the teams for the output.

1.2. Algorithm

The program first opens the input file and reads it. It adds the players as player nodes to the linked list. While adding, it calculates which period has more goals. Then it goes on the list again and calculates hattricks, goal scorers and the team list. While calculating hattricks it uses a bool to check if it's a hattrick or not. Both hattricks and goal scorers are holding in a linked lists with their names only in order to save from space. Then it prints out the whole lists. Then it prints all of the players' names in the league. Then it takes operations file and reads that one too. After reading, the program searches for the names and when it finds it prints out its wanted properties.

1.3 Functions Implemented

There is a lot of functions that has been implemented. For 6th, 7th and 8th calculations I have different functions in order to make the code clear and readable.

There is a lot of functions in classes I've used. I've written a function that compares the objects with each other. There is a function that inserts node to the linked lists in every node class.

The most important function in my program is the **playerLL** function. It takes the input line as a list and adds it to the linked list, at the right place. Alphabetically for players and ascending order for the opponents' list.