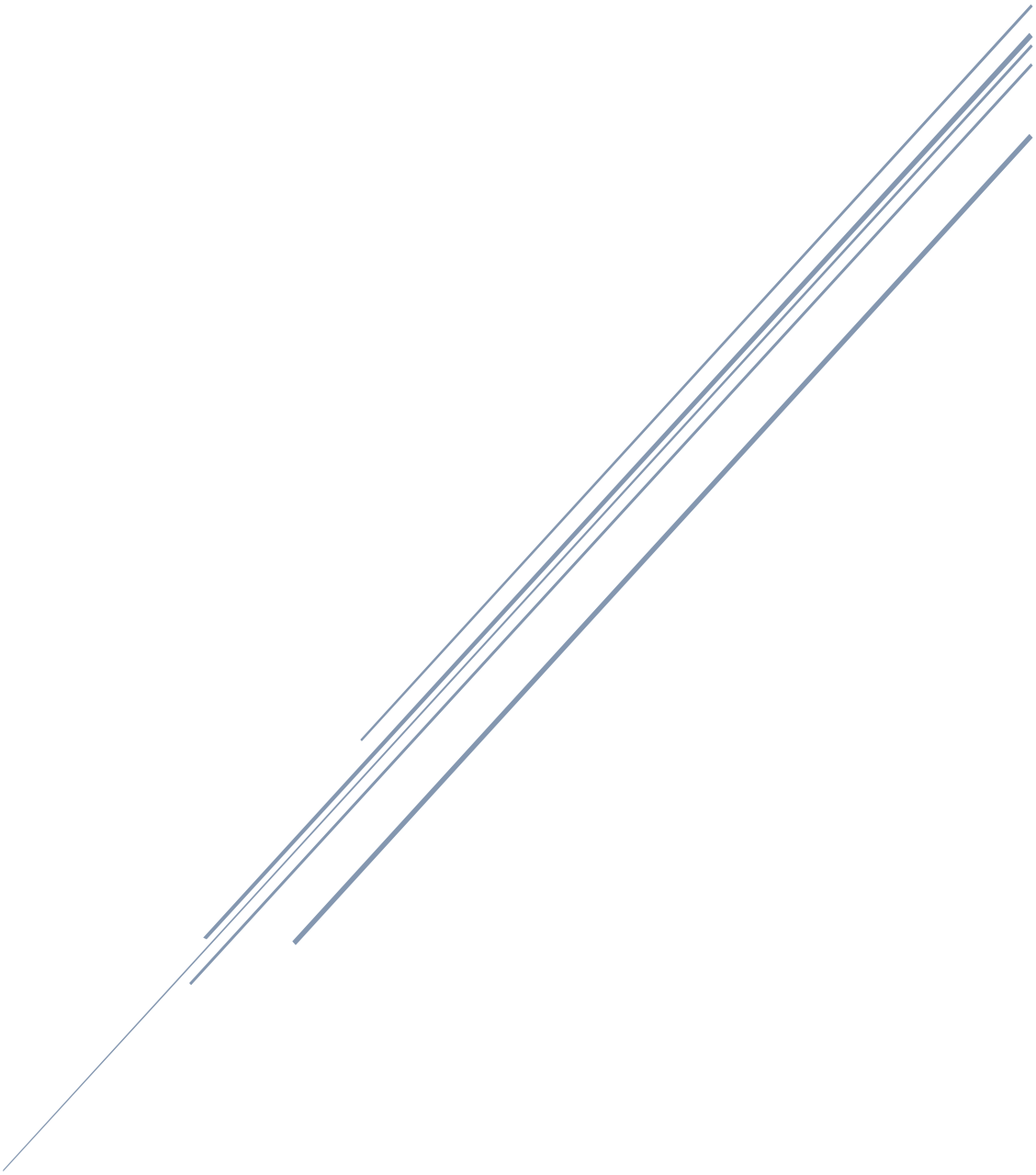
PROGRAMMING ASSIGNMENT 3

21604552 - Emre Hancı



Hacettepe University - Department of Computer Engineering
BBM203 Software Lab.

-What was the problem?

In this assignment our advisors expect that to teach us “How can I use Linked List struct?” and “How can I use Doubly Linked List struct?” with a simple implementation about football player statistics. This program is about storing football player and their scores on linked lists. While doing this every player have to been storing one time and every score of them should be added to scored players statistic record. In this program there are two input file one of them for footballer information and the other one for operations, and one file for output.
Before operations file being process there are five header which are going to print-out to output file those are;
1)Most Scored Half: first information which will print-out is most scored half.
2)Goal Scorer: second information which will print-out most scored footballer, if there are more than one player who share the top scorer title all of them should been print-out.
3)The Names Of Footballer Who Scored Hat-Trick: third information which will print-out the names of footballer who are scored more than 2 goals at a single match.
4)List Of Teams: The program will print-out list of teams all the scored footballers.
5)List Of Footballers: the last information before operations file is about, print-out all the scored footballers.
While doing operation file process, there are three line on that file, first one is about matches of given two footballer, while doing that the expectation of print-out all the score info of given footballer. I get this idea from second sample-output because a footballer print out two times when this command given. Second line of operation file is about asc. order of given two footballers match according to matchID, the last line of operation file is about desc. order of given two footballers match according to matchID.

-The Data Structs I Used;

Footballer;

```
struct footballer{
    string footballerName;
    string footballerTeam;
    footballerStatistics* head;
    footballer* next;
};
```

I create this struct for storing the informations about footballers, as request in assignment paper.

Footballer Statistics;

```
struct footballerStatistics{
    string awayTeam;
    int minuteOfGoal;
    int matchID;
    footballerStatistics* prev;
    footballerStatistics* next;
};
```

I create this struct for storing the informations about footballers statistics, as request in assignment paper.

-The explanation of my functions

Functions getting data from files;

int getTotalFootballer(char filePath);*
This function returns the number of footballers in input file.
void getFootballerInfo(char filePath)*
This function gets the informations about footballers from input file then create a variable which is type footballer, then add it to linked list in alphabetic order.

Functions for output file;

void createFile()
This function create the output file.
void printToFile(string line)
This function append the given line to output file.

Functions for request information;

void mostScoredHalf()
This function print-out the most scored half to output file.
void goalScorer()
This function print-out the most scroed footballer or footballers to output file.
void hattrick()
This function print-out players who are scored more than two goals in a match.
void listOfTeams(char filePath)*
This function print-out teams whom has scored footballer.
void listOfFootballers()
This function print-out all the footballers in linked list.
void matchOfGivenFootballer(string name)
This function print-out given footballers match.
void ascOrderOfMatchID(string name)
This function print-out given footballers match asc. order.
void descOrderOfMatchID(string name)
This function print-out given footballers match desc. order.

Functions which are working on linked list;

void addFootballer(char name,char* team,char* awayTeam,int minuteOfGoal,int matchID)*
This function adds created footballer to linked list.
int search(string name)
This function returns 1 if given footballer name in the likned list.
footballer getFootballer(string name)*
This function returns footballer pointer which is point to given footballer name.
void addStatistic(footballer head,char* awayTeam,int minuteOfGoal,int matchID)*

This function create statistic information variable and add it to given footballers statistic linked list according to matchID.

int searchTeam(int numberOfFootballer, string teams[], string name)

This function returns 1 if given team names have been already added to given array.

footballerStatistics reverse(footballerStatistics* head)*

This function make it reverse given footballer statistic.

void operations(char filePath*)

This function calls the functions which are about operations file.

void sortStatistics()

This function send first statistic of footballer to bubble sort function.

*void bubbleSort(footballerStatistics *start)*

This function sort the given statistics using bubble sort algorithm.