Bilkent University

Department of Computer Engineering

Football Database System

CS-353 Group 10, Section 1

Project Proposal

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1. Introduction

In this project we will design and implement football management web application which will store the information using Football Database System.The purpose of this proposal is to describe our database, its essential functionalities and the design.This proposal will contain functional, non-functional requirements, limitations, restrictions of the project and high-level design of database.

The report starts with the project description which gives a short summary and a brief explanation of the project. It further explains the importance of database system in such application and also the ways to integrate the database with website. After, the main functionalities of the project are explained in a detailed manner. Each crucial requirement is interpreted separately. Additionally, the system's non-functionalities are demonstrated. The report's functionality part wraps up with the technological and software constraints.

Finally, the proposal provides the limitations and the high-level design in the form of ER diagram which shows the entities and relations between them. Moreover, the proposal provides some final thoughts, link to github project and link to a wiki page integrated through github.

2. Description

Football database system mainly focuses on transfers. In the database system football players performance recorded as goals, assists and cards that has been taken. In the system there are clubs that are playing in leagues and their performances in the league. Moreover, the system can be used by special type of users which are mainly directors of the teams, the coaches and agents. The database's main functionality is to show and direct a transfer process online which involves two parties, a director and an agent. Directors request other directors for players. Then if the contract is coming to an end the decision is left only for director, in other case the decision also depends on the agent.

This application also is a useful tool for the coaches since it can project some important statistics about teams and players. By looking at these important statistics coach can observe the players and other teams' performances so that manager can see the players success in the teams and if it is needed make a request to his director to transfer the football player to his team.

Moreover, this application also gives many advantages to directors. By using this database system following the financial situation of the club will be much more easy. For instance, in this app the director can see the wage, annual transfer budget and the expected price for the football players that are wanted to be transferred by the team. Therefore, director can compare the players costs and come up with the decision whether to transfer the football player.

To sum up, this application will present large amount of data in a very easy way so that it is easy to search through the website for particular matches, players, coaches, clubs, transfers and leagues.

2.1 Importance of database system

Football is a universal and very popular game so there are many clubs, players, managers, coaches thus there is a large amount of data. The data in such sport is correlated and linked in lots of ways. Also, the transactions in the website require lot of operations and manipulations of data. In order for the website to be fast and successful we should have a technique for working with data. Therefore, it is essential for the web page to have an efficient database system, so that the data is interpreted and retrieved in an efficient way.

2.2 The role of database in the system

Database will be the foundation of our system. It will store all the datas that are related to football. It will return data from tables with given database queries. Database queries will do operations on the database such as update, insert, join and others. Database will be updated frequently and manipulated according to the users need. Moreover, it will store and protect private information about users. Database will provide detailed information about players, clubs and leagues.

3. Requirements

3.1 Functional Requirements

The system can be used by 4 user types which are Director, Fan, Agent and Coach. Director,Agent and Coach will have to login to the system in order to manage their work; however, a fan does not need to login to the system.

3.1.1 Director

- Directors can accept and reject the incoming transfer offers. Director then transmits this offer to Agent.
- Directors can set the value of the player in the trade market.
- Directors decide the contract extension of the player.
- Directors can offer transfer for a specific player.
- Directors can manage the transfer budget and an annual wage budget. for players. Also he/she display expenses and loans of the club.
- Directors can change the club coach and transfer coach from the trade market.

3.1.2 Fan

- Fan can search and view information about league's clubs and league matches.
- Fan can search for player and view information about that specific player.
- Fan can view club information.
- Fan can not login to the system.

3.1.3 Agent

- An agent can see the transfer requests that has been made to transfer the football player or coach that he work with.
- Agent can accept or reject the transfer request according to the contract.
- Agent can work with multiple football players.
- Agent can make a request to director to extend the contract of the player or coach that he work with.

3.1.4 Coach

- Coach trains a single team.
- Coach can make request to director to buy the player that they want him in his team.

3.2 Non-functional Requirements

3.2.1 Reliability

The system will work smoothly and it will provide the needed functionality to the user without any interruption. It should prevent the failure and it will maintain its functionality when failure occurs.

3.2.2 Security

The login process will involve authentication process so that the privacy of user is protected. Encryption and decryption of the password will be handled during authentication process and all the records of usernames and hashed passwords will be in protected database table.

3.2.3 Efficiency

The system should work fast enough so that users have a nice experience while using it. In order to do so the efficient and well-designed database will be implemented. Also the technologies to implement the UI and backend will reflect the efficiency.

3.2.4 Friendly UI

The website should have a friendly user interface so that users don't get confused while navigating through the website. To achieve the aim, the UI will be well designed and developed using React JS.

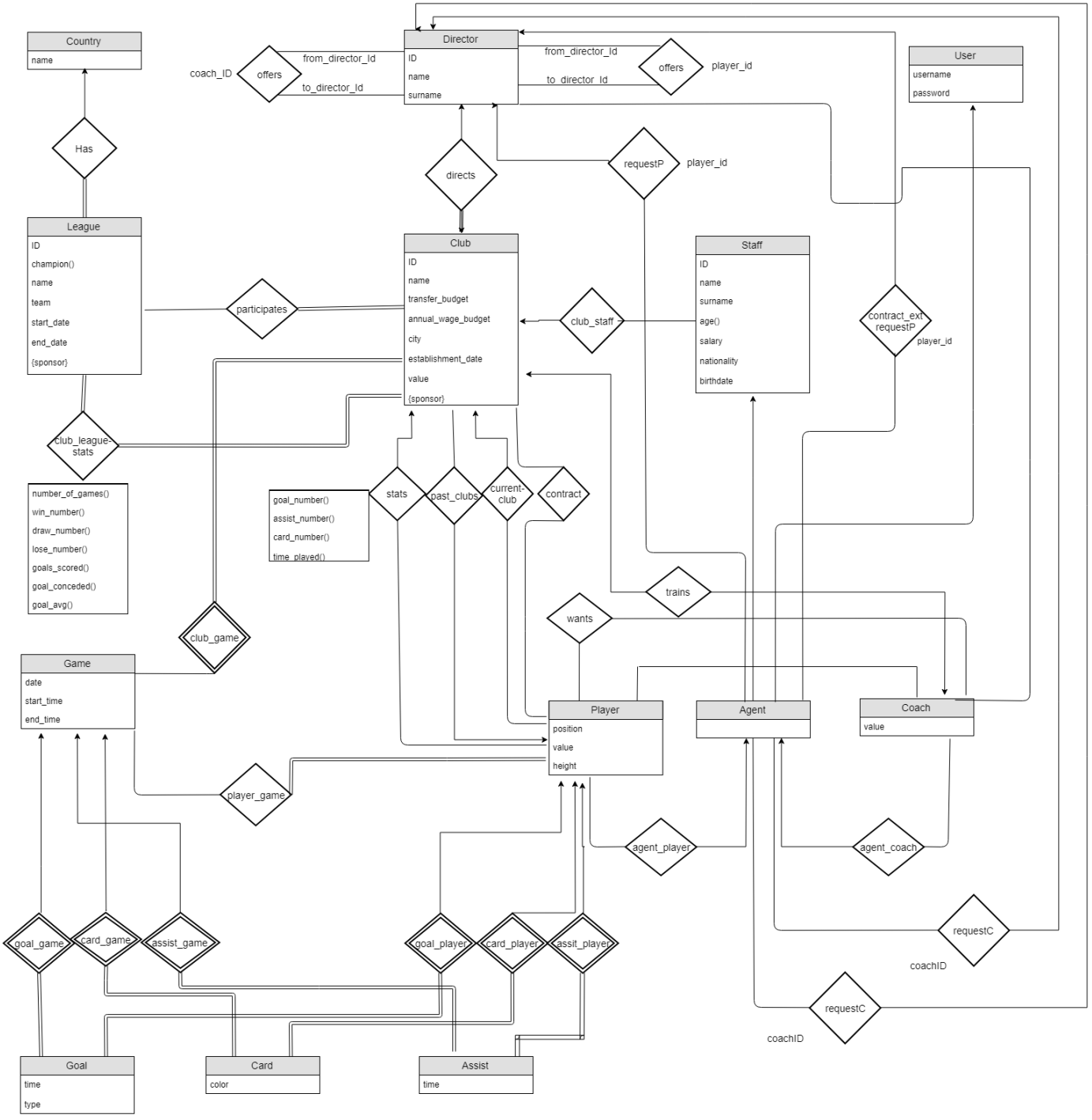
3.3 Pseudo Requirements

- MySQL - will be used for the creation of database.
- HTML, CSS, Javascript, React JS - will be used for building UI of the website.
- Express JS - will be used for the authentication system.
- Node JS - will be used for accessing database.

4. Limitations

- Coach can only make request to director for transfering the football player.
- Coach cannot work in multiple teams.
- Director cannot direct more than one team.
- Football player cannot play in multiple teams.
- Director cannot transfer a player whose wage is more than director’s team’s budget.
- A club’s player’s annual wage cannot be more than the the club’s annual budget.
- Ordinary fan cannot sign up and login to the system.
- The reliability, efficiency and user friendliness depends solely on the design of the system.
- The system is secured by https protocol.

5. Entity Relationship Model (ER Diagram)



6. Website

All the code of the project will be store in github and can be accessed using this link:

https://github.com/soleh23/Football-Management-System

For the wiki page, we have used github pages tool associated with the github repository of the project. The wiki page can be accessed using this link:

https://soleh23.github.io/Football-Management-System