TALLINN UNIVERSITY OF TECHNOLOGY
School of Information Technologies

Kristjan Kattus 185146IADB

Football Association System

Home project in subject "Building Distributed Systems"

Supervisor: Andres Käver
[Academic degree]

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1 Introduction

Football league system is designed to offer football associations and other league type competition organizer a platform where they will be able to showcase, manage and schedule their league games. Organizers will be able to create either new league or multiple leagues. Add teams to every league. Add players or give managers power to add players to their team. Showcase league tables, fixtures, results and protocols. Regulars users will be able to see all league tables, statistics, search club or players by name and view upcoming fixtures and also past fixtures protocols. Referees or other match officials will be able to fill out the match protocol in its details, yellow/red cards, goals, substitution I chose this topic because I do see a need for a universal league creating and managing tool where associations and other league type competition organizers will be able to create and manage their own league system. With very little systems available at the moment, with most of them being developed by each competitions own associations, I see the need for such system in current football world. Also being inside the football all the time shows me some weak points with current systems.

2 System overview

The overall system will evolve in the upcoming stages. The general idea will be to implement features step by step, while keeping the system usable. All features during the development have the possibility to be changed, removed or otherwise altered with. Features will be implemented by looking at features priority in system. Initial stage feature is per say “must be”, hence they will be implemented first. Extra features will be shown and implemented in later stages of development. Initial webpage design will include main screen mock up, login mock up. Webpage design will also be changed. Entity relationship diagram (ERD), which database will be based of from can also be altered with during systems development.

2.1 Initial stage

1. Design and define database and its attributes

2. Design main client proposed screens

3. Create domain models and Model-View-Controller controllers.

4. Design admin screen

5. Implement creating leagues

6. Implement creating and adding teams

7. Implement players to the system

8. Implement user authentication and authorization

9. Create user roles

10. Implement adding match fixtures, league table and protocols

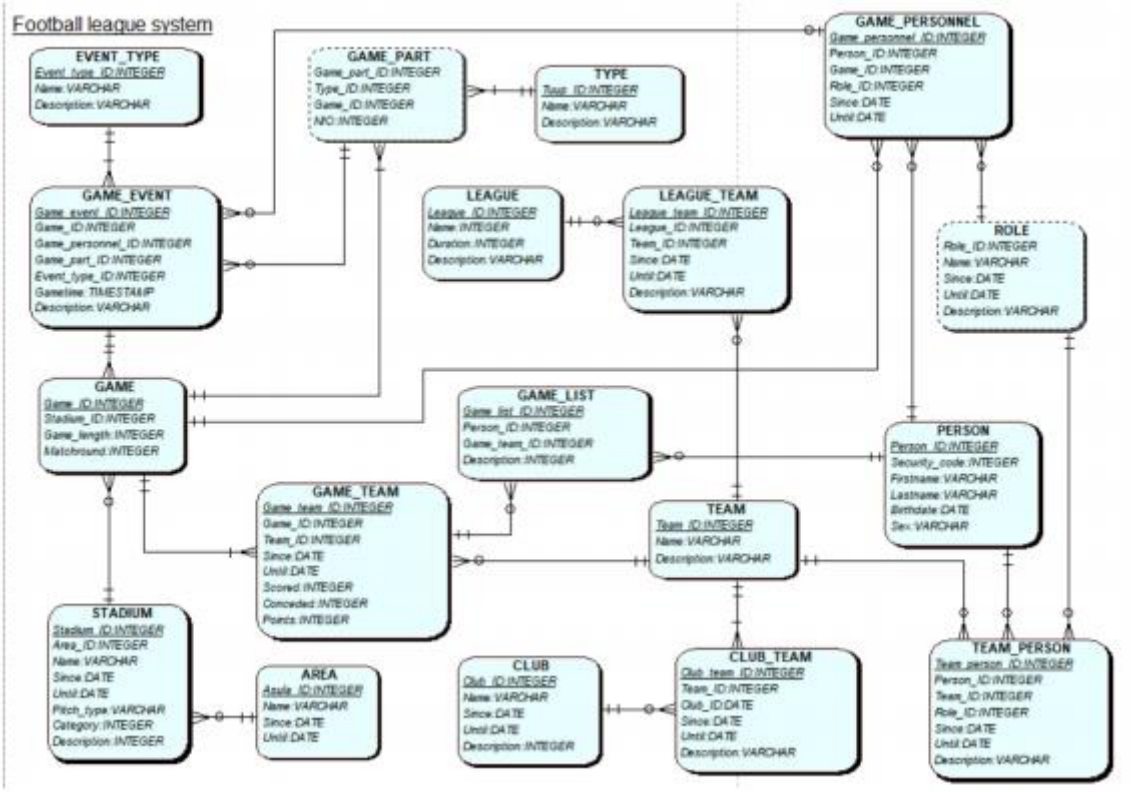

Diagram 1: Entity relationship diagram

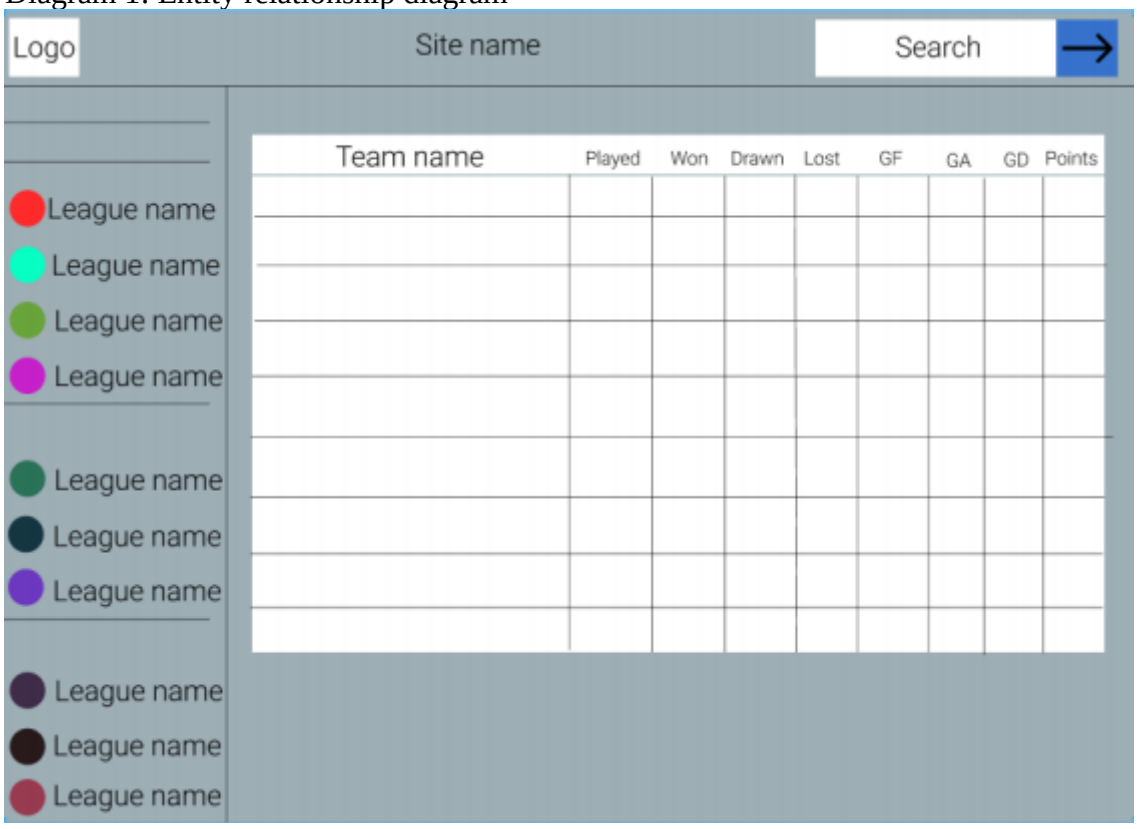

Diagram 2: League table screen

2.2 What got done

Initially planned project stages got completed in the order they were intended, with slight modifications in the given order. As work went on it became clear that with given timeframe, taken into account the project size, complexity and requirements, initially planned project grew too big for all of the planned usage flows and features. In order to tackle this problem, I had to cut down on some of the tables in ERD scheme, whilst still keeping them as an opportunity to implement later on if need be. All the cut out table entities are still implement, with the correct mapping and database functions in the project and are available to be implemented in the future if there will be the need for those entities and their function as features.

Project had fair bit of complexity in business logic level, whether it be gathering all the necessary information from various data transfer objects or calculating game results itself. All of the used entities were layered between many different layers, in order to keep the systems availability to be maintained and developed further on. Since the nature of the project did not require a lot of translation, therefore it got implement for the most necessary parts.

Writing the system was challenging task with it's many problems regarding to business logic, custom queries, keeping the system structured and also easily maintainable. It was rather difficult at some points, but that made the development more interesting.