Bilkent University

CS 353

Database Systems

Project Proposal

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1. Introduction

This proposal report is about our database project which is a social betting platform for football and basketball matches with social features. This report includes the description of our application and explains why and how a database system will be used, its functional and non-functional requirements, its limitations and conceptual design of the database, by using an E/R diagram.

E/R diagram will be the base of our design , we will do our changes, updates and implementation according to our E/R diagram. The report is accessible at: https://github.com/sekin72/Database-Betting-Project

2. Project Description

Betball.com is a web-based social betting platform in which users can bet on football and basketball matches. The website will be used by people who want to bet on several football and basketball matches, create slips of bets and gamble with these slips on football and basketball matches. Moreover, users can also get socialized in the website by commenting to matches and bet slips, and joining chat rooms to debate about the matches.

After logging in, users can see the upcoming matches, select matches to bet on, create bet slips, comment on bet slips, join public or private chat rooms and write inside and see the news. There are two types of users: normal and premium. Their difference is that a premium user can own a room, where he is an administrator there, adding and removing people as they wish. Normal users can only join to a room, which is either a public room or a user gets an invite. Apart from that, all users can create a bet slip, select matches and bet on their choices, see how much the multiplier gets as the bets added, pays an amount to bet with that multiplier and wait to see whether he/she has won the bet or not. Also, the user can see his/hers upcoming and previous bets in a menu. Bet slips have three types; regular, system and duel. On regular betting , users pick some bets and creates a normal betting slip. A system bet is made up of several combination and single bets. As soon as the user have added at least 3 or more picks (up to 8) to the bet slip, user can place a system bet regarding to those matches. Each bets combination is generated with users pick and users pay to all those bets. By doing so, even if they have mispredicted a match, as long as other predictions hold up, they can win money or lessen their losses. On duel system, some teams are matched against each other, even though they do not play to each other physically that day, but to others. For example, Real Madrid is playing against Getafe and Bayern München

is playing against Schalke 04. Real Madrid and Bayern München is set to be duelers and bets are placed on in the same way as normal bets.

Each bet slip has a comment section under it and users can comment under that bet, like “Wow, a nice bet, I will also play with those matches!” or “No way, you can never win with those matches” etc. Users can also reply to those comments. Matches also have a comment section under each one and users can also write comments below to give predictions about the game or cheer during the game.

In News section, users can see “Best Winning Slips”, “Incoming Matches”, and “News” under each topic to browse. On “Best Winning Slips”, users will be able to see who has won the most in a weekly manner. On “Incoming Matches”, users can see which matches are about to be played and see the betting ratios for each case. On the “News” there is news about important teams and matches. Moreover, users can also see the leagues, their standings, team informations and those teams upcoming matches, previous matches, previous win counts, lose counts, tie counts and their average predictions. A team’s average prediction is the average of the predictions of their previous matches. This data shows how this team has been playing, being on the low end means they win a lot and the high end means they lose a lot.

From all those datas, users can gather information about upcoming matches and get some ideas from it to bet on.

2.1 Reasons of use of a database for BetBall.com

Betting platforms keep a lot of data in an organised manner. There are many teams, leagues, matches and their bet ratios to keep. Moreover, each bet slip keeps the data of matches and comments of other users for each user’s bet. There is a vast array of

information that needs to be handled and the data about matches, comments, bet slips is updated often. Working with such a large amount of data would be pretty hard to handle unless a database system is used.

3. Requirements

3.1 Functional Requirements

Users can:

- ❏ Sign up
- ❏ Login
- ❏ Logout
- ❏ Ask for a new password if they forgot theirs
- ❏ Create bet slips
- ❏ Select matches and bets for their slips
- ❏ Use different betting types
- ❏ Pay for the slip via credit card
- ❏ Receive winnings if any
- ❏ Comment on bet slips, matches and other comments
- ❏ Like or dislike a slip or a comment
- ❏ Enter a chat room
- ❏ Write on chat room
- ❏ Follow other users
- ❏ View “Best Winning Slips”, “Incoming Matches”, “News” pages
- ❏ View matches, teams and leagues with their attributes

Premium users also can:

- ❏ Create a room

- ❏ Invite people to a room
- ❏ Ban people from a room

3.2 Non-functional Requirements

Usability: The interface will be attractive and easy to use to present users a pleasant online betting experience.

Performance: Efficient usage of the internet will allow users to access easily and place their bets to matches from leagues in all around the world. Effective database codes will help users to access the pleased data in short amount of time.

Security: This system will include online purchasing and trade operations therefore security is one of the main issues. Password limitations in terms of length and complexity, confirmation by mail and other issues related to bank accounts for online money transfer have to be maintained by system.

Legal Requirements: In our system users may store their money in their accounts and bet their money on matches.Those processes should be done according to the rules of online money transfer.

Reliability: This application should be able to handle hundreds even thousands of users simultaneously without crashing or lagging. It should detect faults and failures in an acceptable mean time.

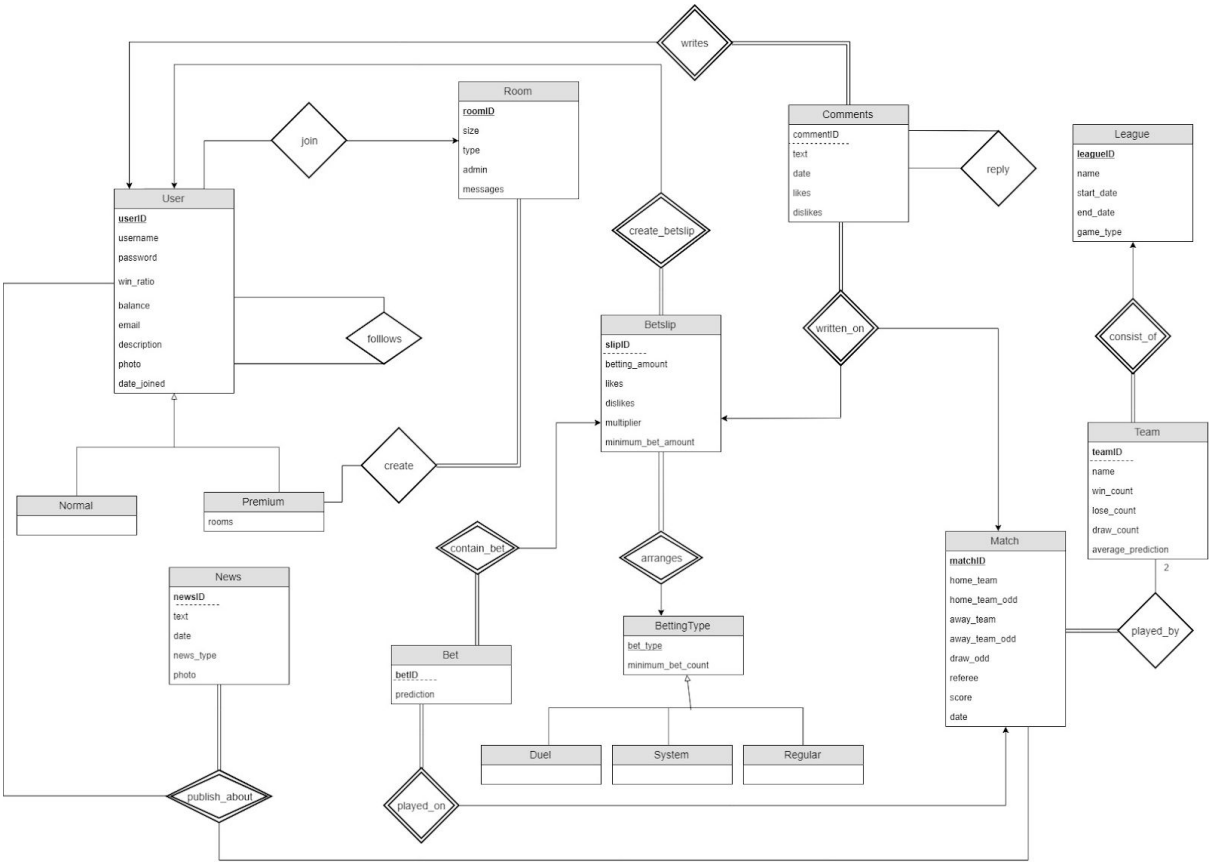
3.3 Pseudo Requirements

MySQL will be used for database management. FileZilla will be used for the server needs. CSS 3, HTML5, JavaScript and JQuery will be used for the front end development and implementation of the website. Visual Studio 2017 will be used as the development platform. Github will be used for version control, merging and branching.

4. Limitations

- ❏ Every user must log in via password and do their activities with that account.
- ❏ Normal users can not create a room
- ❏ Premium users can have only 3 rooms active at the same time
- ❏ Users can be active only in one room
- ❏ Users must make the minimum amount of bets to create a bet slip
- ❏ Every user must pay the minimum betting amount to create a bet slip
- ❏ In “Duel” system, users can’t combine football and basketball teams.

5. Conceptual Design, ER Diagram



Entity Sets:

User(<u>userID</u>, username, password, win_ratio, balance, email, description, photo, day_joined)
Room(<u>roomID</u>, size, type, admin, messages)
BetSlip(<u>userID</u>, <u>slipID</u>, betting_amout, likes, dislikes, multiplier, minimum_bet_amount)
Bet(<u>slipID</u>, <u>matchID</u>, <u>betID</u>, prediction)
BettingType(<u>bet_type</u>, minimum_bet_count)
Comments(<u>userID</u>, <u>commentID</u>, <u>commentedEntityID</u>, text, date, time, likes, dislikes)
News(<u>newsID</u>, <u>publishedEntityID</u>, text, date, news_type, photo)
Match(<u>matchID</u>, home_team, away_team, home_team_odd, away_team_odd, draw_odd, referee, score, date)
Team(<u>leagueID</u>, <u>teamID</u>, name, win_count, lose_count, draw_count, average_prediction)
League(<u>leagueID</u>, name, start_date, end_date, game_type)

Relation Sets:

join(userID, roomID)
follows(userID, followerID)
create(userID, roomID)
contain_bet(slipID, matchID, betID)
publish_about(newsID, publishedEntityID)
played_on(betID, matchID)
writes(userID, commentID, commentedEntityID)
create_betslip(userID, slipID)
arranges(userID, slipID, bet_type)
written_on(userID, commentID, commentedEntityID)
reply(userID, commentID, commentedCommentID)
consist_of(leagueID, teamID)
played_by(matchID, leagueID, teamID)

6. References

- https://github.com/sekin72/Database-Betting-Project

- https://www.nesine.com
- https://www.iddaa.com
- https://www.tuttur.com