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SOCCER PREDICTIONS APPLICATION

Distributed systems course project

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Author's declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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1 Overview

The goal of this project is to create an application where group of people can make predictions on soccer results and compete with each other. It solves the problem that there is no avalaible platform where only group of friends can participate in betting and do it for free.

There are currently tons of online betting platforms where you can make bets on sport events for money and there are also some platforms where to do it for free, but none of them are limited to some group only.

In this application only registered users can make predictions and view participants of betting. Registering is restricted by knowing invite code and this code can be distributed among friends and friends of friends or workplace collegues etc.

Betting in application is limited for only one champinship at a time for example FIFA world cup 2022 Qatar or UEFA euro 2024 Germany, but it can be used for other tournaments like Champions League. For any new tournament old data will be discarded and new participants are registered.

All betting is done for exact game score and there are no other betting options. Predictions are divided into different levels of championship. First level includes every teams first game, last level includes final and 3rd place game etc. Betting for current level ends when first game starts in current level. Each participant can make only one prediction on one game, but until prediction level has not closed, current prediction can be changed.

Admins responsibility is adding new games into schedule and after game ending inserting game outcomes. System will generate participants points based on game scores.

Points are given to participants according to their predictions. Exact score prediction earns 5 points. Predicting right winner gives 1 point and if the goal difference is also corrent will earn 2 extra points. Betting on draw but not exact score will give always 3 points.

As result of prediction points leaderbord is formed and always accessible for participants.
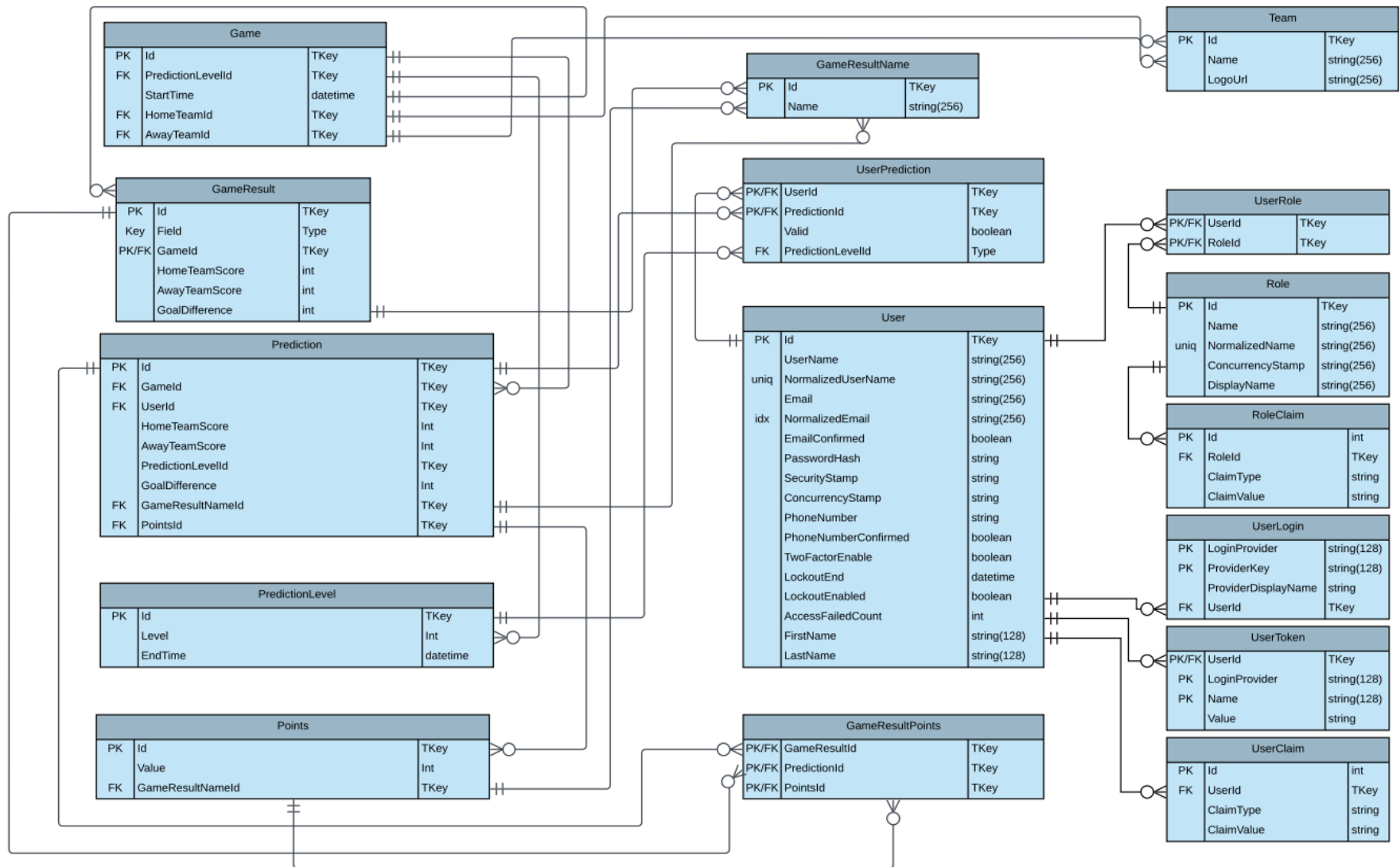
2 ERD Schema and analyses

There two types of users in betting system – participants and admins.

Admins are creating new championships and deleting previous championships data from system. For new cup new registering code is also generated by admin and old participants data erased. They insert timetables for match events and dividing championships into separate prediction levels. Usually world cup consists of 7 levels: every teams first game, every teams second game, every selection group last game, 1/8 finals, quarter finals, semifinals and finals. This structure is adjustable for admin for different type of championship can be adjusted accordingly. During championship after each game ending, admin inserts game results to database and systema can generate points for correct predictions.

Participants are main type of users using the betting system. After admins have created new championship data and shared invite code, participants can register on application and take part in betting. On registering invite code is required to keep unwanted participants away and only invited poeple can take part. When participant have registered they can make their predictions for the first level of predictions. Participants can change their predictions before first game on current prediction level has started. If participant is registered and not entered predictions before level closes, he/she will not earn points for current level, but can still take part in later levels. For every game exact score for normal time is predicted. Overtime and penalties after overtime is not counted so for example final games draw is also possible altough in reality - there is always winner in final game.

Points stucture is: 5 pts for exact score, 1 pt for correct winner and 2 pts for correct goal difference. For correctly predicting draw it is always 3 pts minimum. After each event and scores added by admin – points are given by system to participants and leaderboard is formed which is visible for all participants.

Game

PK	Id	TKey
FK	PredictionLevelId	TKey
	StartTime	datetime
FK	HomeTeamId	TKey
FK	AwayTeamId	TKey

Team

PK	Id	TKey
	Name	string(256)
	LogoUrl	string(256)

GameResultName

PK	Id	TKey
	Name	string(256)

GameResult

PK	Id	TKey
Key	Field	Type
PK/FK	GameId	TKey
	HomeTeamScore	int
	AwayTeamScore	int
	GoalDifference	int

UserPrediction

PK/FK	UserId	TKey
PK/FK	PredictionId	TKey
	Valid	boolean
FK	PredictionLevelId	Type

UserRole

PK/FK	UserId	TKey
PK/FK	RoleId	TKey

Role

PK	Id	TKey
	Name	string(256)
uniq	NormalizedName	string(256)
	ConcurrencyStamp	string(256)
	DisplayName	string(256)

Prediction

PK	Id	TKey
FK	GameId	TKey
FK	UserId	TKey
	HomeTeamScore	Int
	AwayTeamScore	Int
	PredictionLevelId	TKey
	GoalDifference	Int
FK	GameResultNameId	TKey
FK	PointsId	TKey

User

PK	Id	TKey
	UserName	string(256)
uniq	NormalizedUserName	string(256)
	Email	string(256)
idx	NormalizedEmail	string(256)
	EmailConfirmed	boolean
	PasswordHash	string
	SecurityStamp	string
	ConcurrencyStamp	string
	PhoneNumber	string
	PhoneNumberConfirmed	boolean
	TwoFactorEnable	boolean
	LockoutEnd	datetime
	LockoutEnabled	boolean
	AccessFailedCount	int
	FirstName	string(128)
	LastName	string(128)

RoleClaim

PK	Id	int
FK	RoleId	TKey
	ClaimType	string
	ClaimValue	string

UserLogin

PK	LoginProvider	string(128)
PK	ProviderKey	string(128)
	ProviderDisplayName	string
FK	UserId	TKey

PredictionLevel

PK	Id	TKey
	Level	Int
	EndTime	datetime

UserToken

PK/FK	UserId	TKey
PK	LoginProvider	string(128)
PK	Name	string(128)
	Value	string

Points

PK	Id	TKey
	Value	Int
FK	GameResultNameId	TKey

GameResultPoints

PK/FK	GameResultId	TKey
PK/FK	PredictionId	TKey
PK/FK	PointsId	TKey

UserClaim

PK	Id	int
FK	UserId	TKey
	ClaimType	string
	ClaimValue	string

3 Participant positive flow screens

EURO2024 GERMANY

Register   Log in

Predictions
Leaderboard
Schedule
Rules

Register

Firstname:

Username:

Invitecode:

Email:

Register

Register   Log in

Predictions
Leaderboard
Schedule
Rules

Log in

Username: [   ]

Password: [   ]

Log in

EURO2024
GERMANY

Koit Oras   Log out

Predictions

Leaderboard

Schedule

Rules

Predictions

Time before round closes: 485 days

Save

	VS		3	VS	1

	VS		2	VS	0

	VS		1	VS	4

	VS		0	VS	1

Admin   Log out

Predictions

Leaderboard

Schedule

Rules

New Cup

Add result

Add game

Results entering   **Add result**

🇪🇪 VS 🇪🇸 | 3 | VS | 1 |

🇧🇪 VS 🇩🇰 | | VS | |

🇸🇪 VS 🇵🇹 | | VS | |

🇨🇭 VS 🇫🇷 | | VS | |