



T.C.

MARMARA UNIVERSITY

FACULTY of ENGINEERING

COMPUTER ENGINEERING DEPARTMENT

CSE 3055 – Database Systems

Requirement Analysis & Conceptual Database Design

Project Name: Football Tournament

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03 December 2020

1.a)

PITCH: Place where the matches are played.

MANAGER: Person who is responsible of coaching the team.

TEAM: Organization consist of football players.

PLAYER: Professional football player involved in a team.

REFEREE: Person who is in charge of officiating the match played.

MATCH: Even where two team play against each other.

GOAL: Score that is recorded in a match.

GROUPS: For the first phase each team is assigned to a group by a draw.

QUARTER_FINAL: Top two teams from each group will be raised to next phase, quarter final.

SEMI_FINAL: Top four teams in the quarter final will be raised to the next phase, semi final.

FINAL: Top two teams in the semi final will play against each other in the final phase, final.

- Pitches are identified by their identification number. Its name, location, owner name and business number must be recorded.
- Teams are identified by their belonging identification number to team. Its name, location, number of won/lost/draw matches, goal scored, goal conceded and number of matches played needs to be recorded. At each season resulted point and average value will be derived from these values which described in section 1.c.
- Regarding which group teams belongs to, group's name, group position is recorded in team. Also, stage is recorded to indicate whether it is a group, quarter-final, semi-final or final stage.
- Managers are identified by their identification number. Each manager's first name, last name, nationality, birthdate and years of experience needs to be recorded.
Manager's age is calculated from the birthdate.
- Considering a match, a team can only play in a pitch but pitch is played in by one or more teams.
- Each manager coaches only a team and a team is coached by only a manager at a time.
- Players are identified by their identification number. A player's first name, last name, nationality, birthdate and number of goals needs to be recorded. Age of player is derived from recorded birthdate. Also, a player can have the ability of playing in several positions.
- Each player plays for only a team but a team consisting of one or more players.
- Goals are recorded with their match week and identification number. Identification number is an identifier of the goal which is composite of match ID, player ID, minute it was done by the player.
- Referees are identified by their identification number. Referee's first name, last name and years of experience must be recorded.
- Each goal is scored by only a player at a time and player can have many goals in a match.
- Referees are the responsible unit in a match which officiates it. A referee can officiate many matches but a match is only officiated by a referee.
- In a match, there may be not a score occurred by a team. Date and week information contained in the matches.

1.b)

Step1: Determination of groups

By the time the new season is opened, draw is being made by the responsible organization. Depending on the results each team is assigned to corresponding group.

Step2: Group matches

By the rules defined in the section 1.3., each team plays matches for the whole seasons against the teams that are in the same group. Succeeding teams will have the right to play further matches in quarter finals.

Step3: Elimination matches

This stage starts with quarter finals which contains teams that succeeded in group stage. Every group leader matches randomly with a team that finished the group stage second. After quarter finals remaining teams match in semifinals. At last, remaining two teams match in the finals and tournament concludes. Teams plays two times with each other in every round and loser is out of the tournament.

1.c)

- Number of teams inside the database is determined as 16.
- Number of groups inside the database is determined as 4.
- In each group teams must play with each other at least twice.
- First two teams in each group will be able to go next round.
- After group matches handled next will be in elimination manner.
- Determination of each team's opponent is done randomly.
- If the points of the two teams are equal, the higher average will be placed higher.
- Match scores can range from 0 to 10
- Average is calculated by goal scored – conceded goal

1.d)

- In each group the two teams with most point is going to advance to elimination round
- Elimination rounds have a future of first overtime then penalty shootout in case of total draw with equal scores for each team.
- An API is required for handling communication between backend and frontend
- In the first step group matches will be fetched from the backend via API service.

04.12.2020

CLUB AYDINOĞLU

Cem Güleç, Muhammet Mustafa Selimoğlu ve Enes Ülker'in dahil olduğu ekibin yapmakta olduğu Spor Similasyonu prejesinde onlara destek vermekteyiz.

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