

# **BLG 317E PROJECT REPORT**

**Student Name:** MUSTAFA YAVUZ ENGİN

**Student Number:** 150200708

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# Project Report: Football Hub

## 1. Overview

This project consists of a web-based "Football Hub" designed to handle the addition, listing, and removal of matches in a database.

Database taken from <https://www.kaggle.com/datasets/technika148/football-database>. Some modifications were applied to the database and some of them are removed. In the project, 'appearances', 'games', 'leagues', 'teams' and 'players' tables are used. The system is implemented using PHP and includes the following key files:

- **add\_match.php:** Handles the addition of new matches to the database.
- **index.php:** Serves as the main user interface for listing and managing matches.
- **remove\_match.php:** Manages the removal of matches from the database.
- **styles.css:** Manages the visual styles.

## 2. Purpose and Functionality

### 2.1. index.php

The index.php file serves as the main interface of the application. Its functionalities include:

- **User Interaction:** Displays 'Leagues', 'Teams', 'Games', 'Players', 'Favorites', 'Appearances' data to users in a structured format.
- **Integration:** Provides links or forms to access functionalities like adding or removing matches.
- **Dynamic Content:** Fetches data from the database and displays it dynamically.

### 2.2. add\_match.php

This script is responsible for adding match details to the database. Key functionalities include:

- **Input Validation:** Ensures that all required fields are provided and properly formatted.
- **Database Interaction:** Inserts match details (e.g., teams, scores, date) into the database.

- **Error Handling:** Displays messages for any issues encountered during the insertion process.

### 2.3. `remove_match.php`

This script allows users to delete match records from the database. Key functionalities include:

- **Record Identification:** Identifies matches based on unique criteria (e.g., match ID).
- **Database Interaction:** Removes the identified match from the database.
- **Error Handling:** Ensures only valid and existing records are removed.

### 2.4. `styles.css`

This file contains the styling rules for the web application, enhancing its visual presentation and user experience.

## 3. Features

- **User-Friendly Interface:** The application provides an easy-to-navigate structure for adding, viewing, and deleting games, adding or removing favorite players. Visual contribution is implemented with the usage of CSS.
- **Dynamic Operations:** Data operations are conducted dynamically using PHP and SQL.
- **Validation and Security:** Basic input validation is implemented to ensure data integrity.

## 4. CRUD Operations and SQL Queries

### 4.1. Create Operations

The Create operation is implemented to add new match records to the database. This functionality is handled by the **add\_match.php** script.

**SQL Query:**

```
INSERT INTO games (leagueID, season, homeTeamID, awayTeamID, date,
homeGoals, awayGoals)
VALUES ('$leagueID', '$season', '$homeTeamID',
'$awayTeamID', '$date', '$homeGoals', '$awayGoals');
```

**Explanation:**

- The `INSERT INTO` statement is used to add a new row to the `games` table.
- The column names `leagueID`, `season`, `homeTeamID`, `awayTeamID`, `homeGoals`, `awayGoals`, and `date` correspond to the details of the match being added.
- Values are dynamically inserted from user input through PHP scripts.

Also in 'Favorites' section, 'Create Table' operation is used. If table is already exist, only 'Insert into' operation works.

**SQL Query:**

```
CREATE TABLE IF NOT EXISTS favorites (
    id INT AUTO_INCREMENT PRIMARY KEY,
    playerID INT NOT NULL,
    name VARCHAR(255) NOT NULL,
    added_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    CONSTRAINT fk_player FOREIGN KEY (playerID) REFERENCES players(playerID)
) ENGINE=InnoDB;
```

```
INSERT INTO favorites (playerID, name) VALUES (?, ?);
```

### 4.2. Read Operation

The Read operation retrieves match records from the database and displays them on the main interface, handled by the **index.php** script.

**SQL Query 1:**

```
SELECT leagueID, name FROM leagues;
```

**Explanation:**

- Retrieves all league IDs and names from the `leagues` table.
- Used to populate dropdown menus or lists for league selection.

**SQL Query 2:**

```
SELECT t.teamID, t.name AS team_name, l.name AS league_name
FROM teams t
JOIN leagues l ON t.leagueID = l.leagueID;
```

**Explanation:**

- Joins the `teams` and `leagues` tables on the `leagueID` field.
- Provides a combined view of teams and their associated leagues.

**SQL Query 3:**

```
SELECT DISTINCT season FROM games;
```

**Explanation:**

- Fetches unique seasons from the `games` table.
- Useful for filtering games by season.

**SQL Query 4:**

```
SELECT g.gameID, l.name AS leagueName, g.season, g.date,
g.leagueID, ht.name AS homeTeamName,
at.name AS awayTeamName,
g.homeGoals, g.awayGoals
FROM games g
JOIN leagues l ON l.leagueID = g.leagueID
JOIN teams ht ON ht.teamID = g.homeTeamID
JOIN teams at ON at.teamID = g.awayTeamID;
```

**Explanation:**

- Joins the `games`, `leagues`, and `teams` tables to fetch detailed match information.
- Includes league name, season, match date, home and away team names, and scores.
- Serves as the primary query for displaying game data.

**SQL Query 5:**

```
SELECT COUNT(*) AS total FROM appearances a
JOIN players p ON a.playerID = p.playerID
JOIN games g ON a.gameID = g.gameID
JOIN leagues l ON a.leagueID = l.leagueID
JOIN teams ht ON g.homeTeamID = ht.teamID
JOIN teams at ON g.awayTeamID = at.teamID
WHERE 1=1;
```

**Explanation:**

- Calculates the total number of rows matching the conditions in the `appearances` table.
- Joins multiple tables to gather comprehensive data for pagination.
- `WHERE 1=1` is used as a placeholder for adding optional dynamic filters.

### 4.3. Update Operations

Update operation used for leagueID updates. In the project, when leagueID is changed, also in games.leagueID s are changed automatically due to the relation between them. The SQL query for this operation is provided below.

#### SQL Query:

```
$update_sql = "UPDATE leagues SET leagueID = ?  
WHERE leagueID = ?";
```

#### Explanation:

- The UPDATE statement modifies data in the `matches` table.
- The SET clause specifies the new values for `score1` and `score2`.
- The WHERE clause ensures that only the record with `match_id = 1` is updated.

### 4.4. Delete Operations

The Delete operation removes specific match records from the database. This functionality is managed by the `remove_match.php` script.

#### SQL Query:

```
DELETE FROM games WHERE gameID = ?;
```

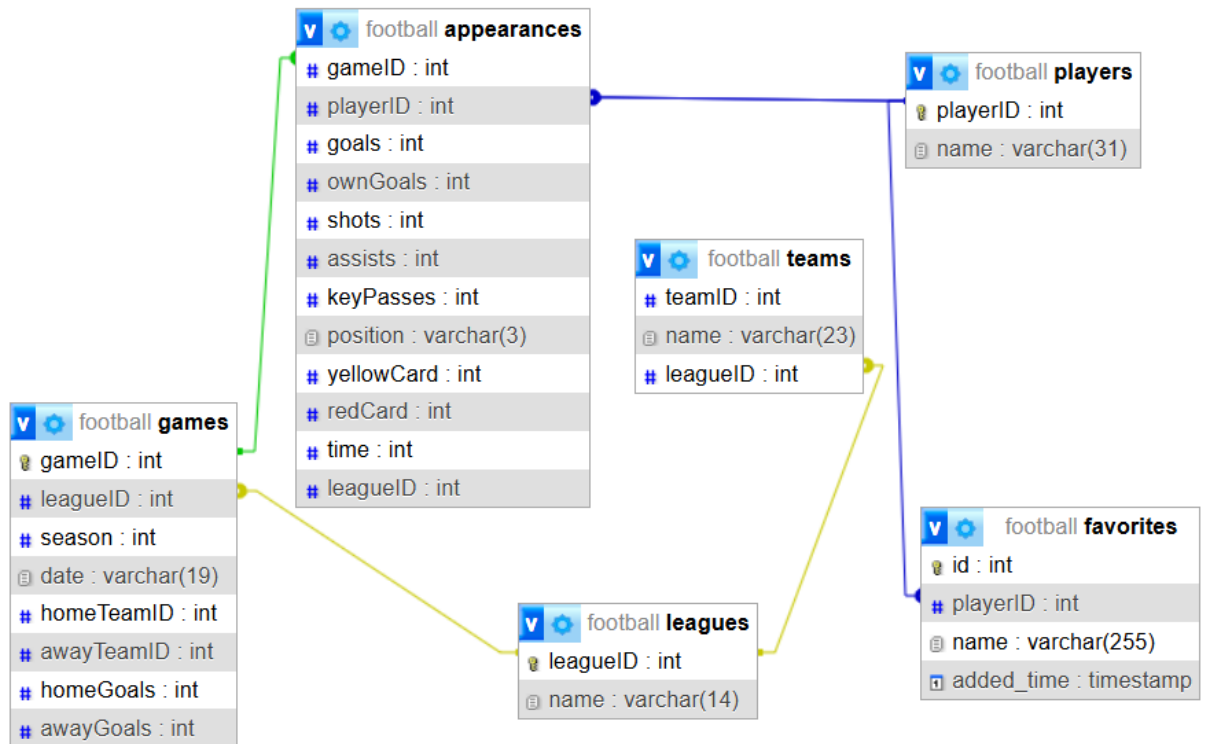
#### Explanation:

- The DELETE FROM statement removes rows from the `games` table.
- The WHERE clause specifies which row(s) to delete, based on the unique `game_id`.
- Without a WHERE clause, all records in the table would be deleted, so careful use is essential.

## 5. Conclusion

This report highlights the CRUD operations and SQL queries implemented in the Football Hub. The SQL queries demonstrate efficient handling of data within the `matches` table. Also ERD diagram and screenshots from website project added for demonstration.

# ERD DIAGRAM



# MAIN (LEAGUES PAGE)

In this page, leagueID’s can be changed.

Football Hub

Leagues

Teams

Games

Players

Favorites

Appearances

Football Leagues

Welcome to the Football Hub! Below are the current football leagues:

League ID	League Name	Action
1	Premier League	<input type="text" value="1"/> <button>Edit League ID</button>
2	Serie A	<input type="text" value="2"/> <button>Edit League ID</button>
3	Bundesliga	<input type="text" value="3"/> <button>Edit League ID</button>
4	La Liga	<input type="text" value="4"/> <button>Edit League ID</button>
5	Ligue 1	<input type="text" value="5"/> <button>Edit League ID</button>

# TEAMS PAGE

Football Hub

Leagues

Teams

Games

Players

Favorites

Appearances

Football Teams

Explore the teams playing in the leagues!

Team ID	Team Name	League Name
71	Aston Villa	Premier League
72	Everton	Premier League
74	Southampton	Premier League
75	Leicester	Premier League
76	West Bromwich Albion	Premier League
77	Sunderland	Premier League
78	Crystal Palace	Premier League



# GAMES PAGE

Football Hub

LeaguesTeamsGamesPlayersFavoritesAppearances

## Football Games

Explore the details of upcoming football games or add a new match:

Game ID:

League: 

All Leagues

Season: 

All Seasons

Sort By Game ID: 

Ascending

Filter

### Add a New Match

League: 

Select League

Season: 

e.g., 2023

Home Team: 

Select Home Team

Away Team: 

Select Away Team

Match Date: 

gg . aa . yyyy

Home Goals:

Away Goals:

Add Match

Game ID	League ID	League	Season	Date	Home Team	Away Team	Home Goals	Away Goals	Actions
81	1	Premier League	2015	2015-08-08 15:45:00	Manchester United	Tottenham	1	0	<a href="#">Delete</a>
82	1	Premier League	2015	2015-08-08 18:00:00	Bournemouth	Aston Villa	0	1	<a href="#">Delete</a>
83	1	Premier League	2015	2015-08-08 18:00:00	Everton	Watford	2	2	<a href="#">Delete</a>
84	1	Premier League	2015	2015-08-08 18:00:00	Leicester	Sunderland	4	2	<a href="#">Delete</a>
85	1	Premier League	2015	2015-08-08 18:00:00	Norwich	Crystal Palace	1	3	<a href="#">Delete</a>

### Add a New Match

League: 

Bundesliga

Season: 

2025

Home Team: 

Hannover 96

Away Team: 

Hoffenheim

Match Date: 

23 . 12 . 2024

Home Goals:

5

Away Goals:

Add Match

LeaguesTeamsGamesPlayersFavoritesAppearances

## Football Games

Explore the details of upcoming football games or add a new match:

Game ID:

League: 

All Leagues

Season: 

2025

Sort By Game ID: 

Ascending

Filter

### Add a New Match

League: 

Select League

Season: 

e.g., 2023

Home Team: 

Select Home Team

Away Team: 

Select Away Team

Match Date: 

gg . aa . yyyy

Home Goals:

Away Goals:

Add Match

Game ID	League ID	League	Season	Date	Home Team	Away Team	Home Goals	Away Goals	Actions
16140	3	Bundesliga	2025	2024-12-23	Hannover 96	Hoffenheim	5	3	<a href="#">Delete</a>

PLAYERS PAGE

Players

Explore the details of football players.

Player Name:  Player ID:  Filter

Player ID	Player Name	Action
1	Christian Mathenia	<button>Add to Favorites</button>
2	Gy?rgy Garics	<button>Add to Favorites</button>
3	Luca Caldirola	<button>Add to Favorites</button>
4	Aytac Sulu	<button>Add to Favorites</button>
5	Fabian Holland	<button>Add to Favorites</button>
6	Marcel Heller	<button>Add to Favorites</button>

Teams

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Player added to favorites successfully.

Tamam

Favorites

# FAVORITES PAGE

Users can add or remove favorite player.

Football Hub

Leagues

Teams

Games

Players

Favorites

Appearances

Favorites

Explore the details of favorite football players.

Player ID	Player Name	Added Time	Actions
1287	Leonardo Bonucci	2024-12-23 19:29:42	<div>Remove</div>
840	Dusan Tadic	2024-12-23 19:29:49	<div>Remove</div>
1253	Edin Dzeko	2024-12-23 19:29:59	<div>Remove</div>

Football Hub

Leagues

Teams

Games

Players

Favorites

Appearances

Favorites

Explore the details of favorite football players.

Player with ID 1287 removed from favorites.

Player ID	Player Name	Added Time	Actions
840	Dusan Tadic	2024-12-23 19:29:49	<div>Remove</div>
1253	Edin Dzeko	2024-12-23 19:29:59	<div>Remove</div>

# APPEARANCES PAGE

Football Hub

Leagues

Teams

Games

Players

Favorites

Appearances

Player Appearances

Filter player appearances based on specific criteria:

Player Name:

Game ID:

League ID:

Season:

Filter

Game ID	Player Name	Goals	Own Goals	Shots	Assists	Key Passes	Position	Yellow Card	Red Card	Time Played	League	Home Team	Away Team	Game Date	Season
14537	Cenk Tosun	0	0	0	0	0	Sub	0	0	1	Premier League	Burnley	Everton	2020-12-05 12:30:00	2020
14501	Cenk Tosun	0	0	0	0	1	Sub	1	0	20	Premier League	Newcastle United	Everton	2020-11-01 14:00:00	2020
14595	Cenk Tosun	0	0	0	0	0	Sub	0	0	9	Premier League	Everton	West Ham	2021-01-01 17:30:00	2020
14569	Cenk Tosun	0	0	0	0	0	Sub	0	0	1	Premier League	Everton	Arsenal	2020-12-19 17:30:00	2020

# LEAGUE ID CHANGES

Leagues	Teams	Games	Players	Favorites	Appearances
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## Football Leagues

Welcome to the Football Hub! Below are the current football leagues:

League ID updated successfully!

League ID	League Name	Action
2	Serie A	2 <input type="text"/> <input type="button" value="Edit League ID"/>
3	Bundesliga	3 <input type="text"/> <input type="button" value="Edit League ID"/>
4	La Liga	4 <input type="text"/> <input type="button" value="Edit League ID"/>
5	Ligue 1	5 <input type="text"/> <input type="button" value="Edit League ID"/>
10	Premier League	10 <input type="text"/> <input type="button" value="Edit League ID"/>

Leagues	Teams	Games	Players	Favorites	Appearances
---------	-------	-------	---------	-----------	-------------

## Football Games

Explore the details of upcoming football games or add a new match:

Game ID:  League:  Season:  Sort By Game ID:

### Add a New Match

League:  Season:  Home Team:  Away Team:  Match Date:   Home Goals:  Away Goals:

Game ID	League ID	League	Season	Date	Home Team	Away Team	Home Goals	Away Goals	Actions
81	10	Premier League	2015	2015-08-08 15:45:00	Manchester United	Tottenham	1	0	<a href="#">Delete</a>
82	10	Premier League	2015	2015-08-08 18:00:00	Bournemouth	Aston Villa	0	1	<a href="#">Delete</a>
83	10	Premier League	2015	2015-08-08 18:00:00	Everton	Watford	2	2	<a href="#">Delete</a>
84	10	Premier League	2015	2015-08-08 18:00:00	Leicester	Sunderland	4	2	<a href="#">Delete</a>
85	10	Premier League	2015	2015-08-08 18:00:00	Norwich	Crystal Palace	1	3	<a href="#">Delete</a>
86	10	Premier League	2015	2015-08-08 20:30:00	Chelsea	Swansea	2	2	<a href="#">Delete</a>
87	10	Premier League	2015	2015-08-09 16:30:00	Newcastle United	Southampton	2	2	<a href="#">Delete</a>