UNIVERSIDAD PANAMERICANA
Campus México

UNIVERSIDAD PANAMERICANA

Subject: Introducción a Bases de Datos(COM112)

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Cicle: 1228

Project Name: ***TrackEmUP***

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ID	**1-identify**		**4-impact**	**5-teams**			
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Context and problem statement

Today, we know that soccer is the most famous sport on the entire planet. It is the sport that generates more money than any other. Just to give us an idea of how many people watch it, in the UEFA Champions League final, where Bayern met PSG, there was an audience of more than 350 million people.

Now, let's imagine that in order to have everything under control and well organized, you have to create a database with a lot of information. Just think that in a tournament like the Champions League, there are a large number of players, teams, coaches, referees, goals, cards, penalties, etc. Managing so much information is very complicated and often overwhelming, especially if you don't know how, and on many occasions, mistakes can be made in these types of tournaments.

Even from our own experience within the internal tournament of the UP, we have realized that it is necessary to carry out a control of this type, so that both the organizers and the participants (players, teams or coaches) have access to data and relevant statistics, in an orderly and clean way. Another proposal would be to be able to share the information and statistics collected with some of the different bookmakers that currently exist to generate the most accurate odds possible.

Proposed Solution

Our project presents a database with 10 tables with different fields where we can generate various queries to obtain specific information, be it a player, team, league, event or a table in general.

As a proposition for future marketing, we would like to have four types of access to our app:

a) Super User: has access to edit and consult all the information in the complete database.
b) Organizer: has access to all the information and statistics of a specific league.
c) Coach: You have access to your team's information and statistics.
d) Casa De Apuestas: access to query and statistics of the information of the entire database.

We use the following data tables:

- Country Table
- Referee Table
- league table
- Stadium Table
- Trainer Table
- Team Table
- Match Table (with markers)
- Player table (personal data)
- Events Table (types of important events and their code)
- Table of Match Events (relation of events with a specific match and player)

Counting on this, we could have a good database to be able to see the information and display it to the public, without fear of making a mistake, since everything would be well organized and ready to serve the interests of the individual. In the same way, we would have access to a large amount of statistical data and various ways of filtering it.

Solution value

We believe that this is a great project that can actually be used in different types of tournaments, from university level (adaptation), national and even international, in order to get the most out of all the information related to this important sport. Worldwide.

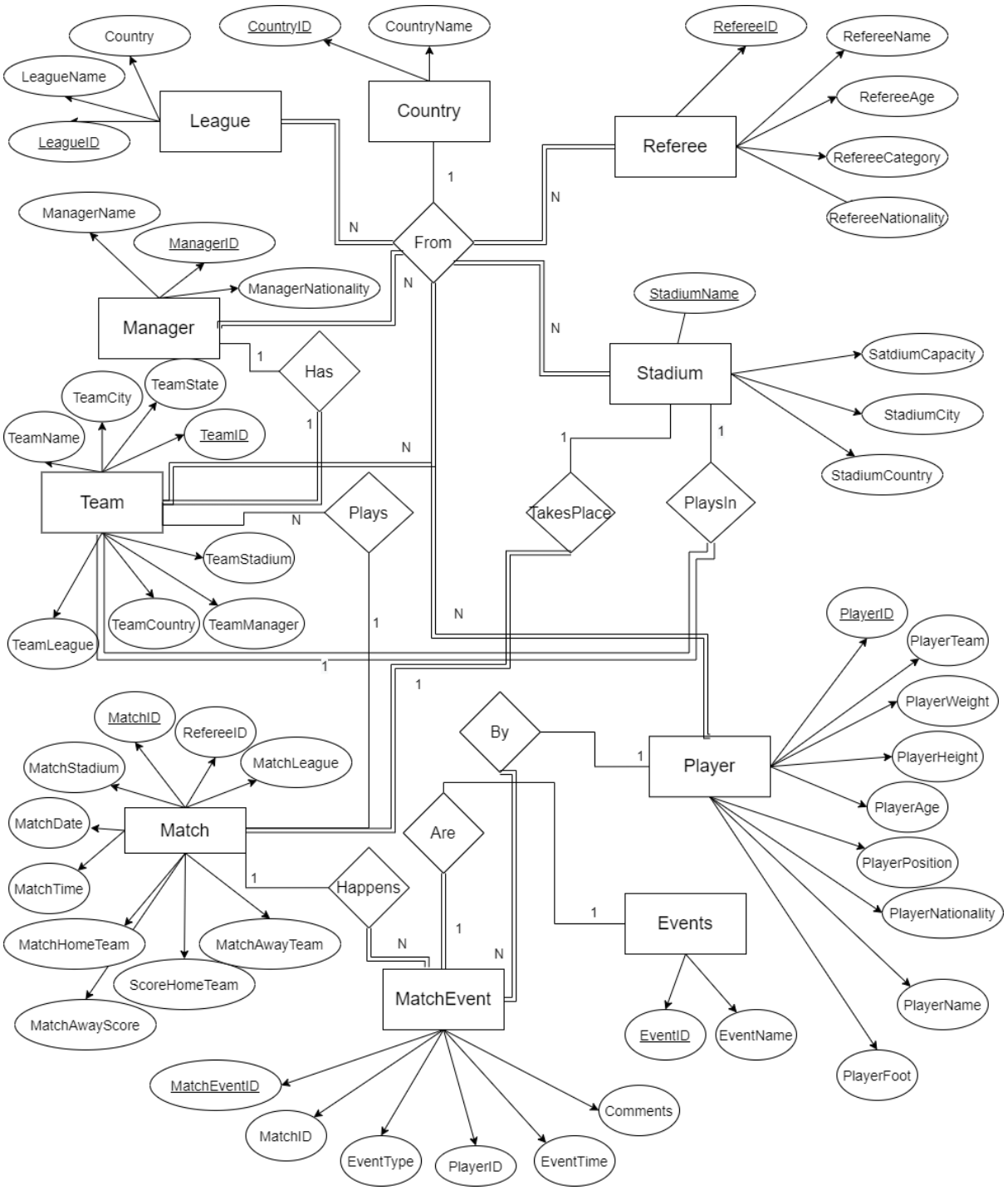
Some of the advantages that our solution brings to this problem are:

- Complete information about the matches.
- Control of registered players.
- Detailed statistics for each player (goals, fouls, cards...)
- Scoreboards and general data of the matches that each team has had.
- Record of matches presided over by a referee.
- Access to detailed information on a team's roster.

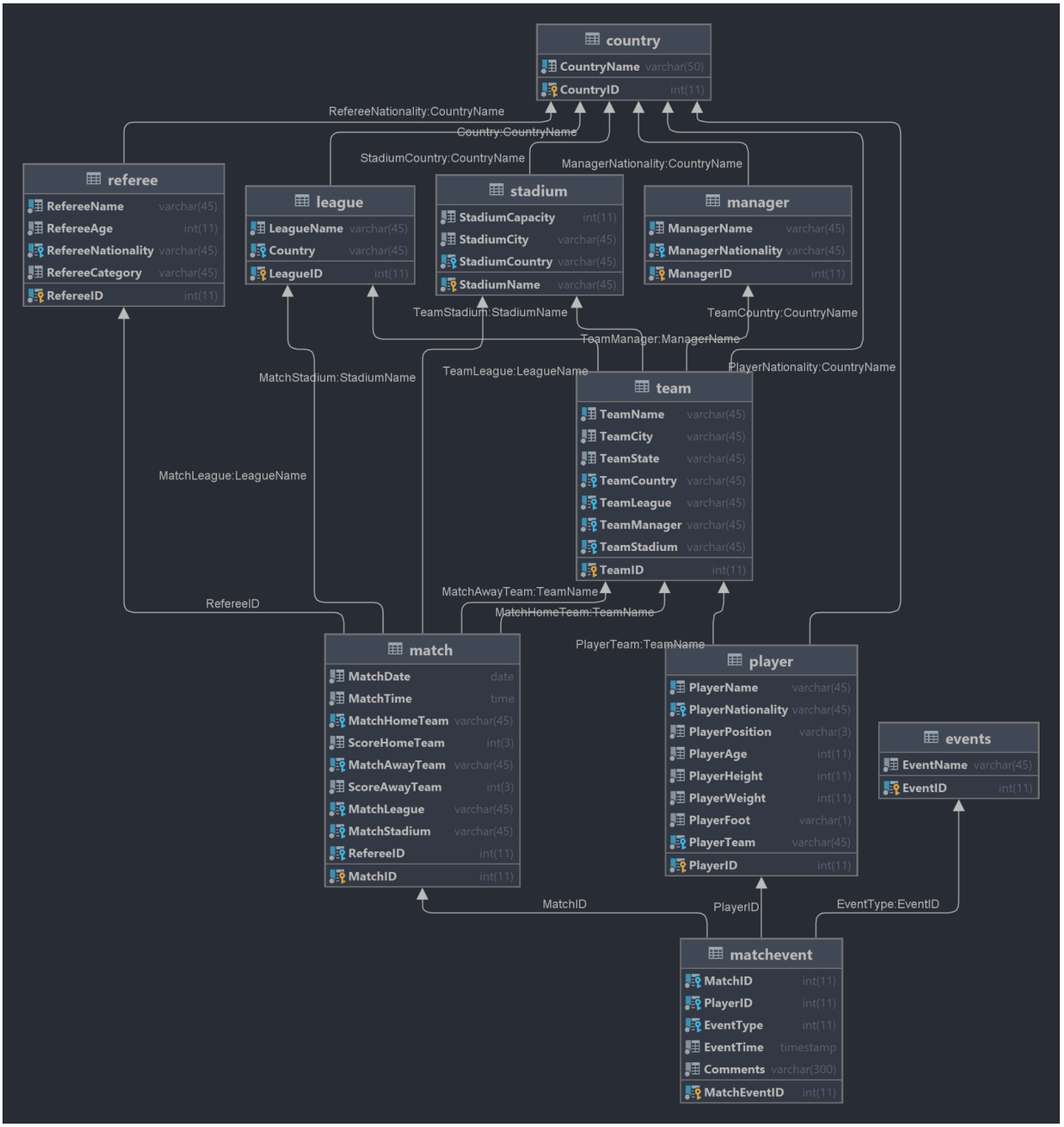
Broadly speaking, our system helps both tournament organizers and participants to have reliable order and statistics. In this way, the sport that we love so much can be increasingly cleaner and more transparent, since everything will be registered in the database and can be used with different final objectives, such as those previously exposed.

Implementation

E-R Diagram



Relational Schema (Physical Schema)



Normalization

1FN => Cada campo tiene un valor único y no existen grupos repetidos

2FN => Los campos no clave dependen por completo de la llave primaria, sólo aplica para tablas con llaves compuestas.

3FN => Los campos no clave son accesibles únicamente por los campos clave.

Table	Functional Dependency	1FN	2FN	3FN
matchevent	MatchEventID => PlayerID, MatchID, EventType, Comments, EventTime.	Ok	Ok	Ok
match	MatchID => RefereeID, MatchStadium, MatchLeague, MatchAwayTeam, MatchHomeTeamMatchDate, MatchTime, SocreHomeTeam, ScoreAwayTeam.	Ok	Ok	Ok
player	PlayerID => PlayerTeam, PlayerNationality, PlayerPosition, PlayerFoot, PlayerAge, PlayerHeight, PlayerWeight, PlayerName.	Ok	Ok	Ok
events	EventID => EventName.	Ok	Ok	Ok
team	TeamID => TeamManager, TeamStadium, TeamLeague, TeamCountry, TeamCity, TeamState, TeamName.	Ok	Ok	Ok
referee	RefereeID => RefereeNationality, RefereeAge, RefereeCategory, RefereeName.	Ok	Ok	Ok
league	LueagueID => LeagueName, Country.	Ok	Ok	Ok
stadium	StadiumName => StadiumCountry, StadiumCity, StadiumCapacity.	Ok	Ok	Ok
manager	ManagerID => ManagerName, ManagerNationality.	Ok	Ok	Ok
country	CountryID => CountryName.	Ok	Ok	Ok

DB Creation

Table creation scripts

```
DROP DATABASE IF EXISTS TrackEmUP;


# CREATE DATABASE
CREATE DATABASE IF NOT EXISTS TrackEmUP;


# Select DATABASE
USE TrackEmUP;


# CREATE TABLES
CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Country`
(
    `CountryID`   INT         NOT NULL AUTO_INCREMENT,
    `CountryName` VARCHAR(50) NOT NULL,
    PRIMARY KEY (`CountryID`),
    UNIQUE INDEX `CountryName_UNIQUE` (`CountryName` ASC)
) ENGINE = InnoDB;




CREATE TABLE IF NOT EXISTS `TrackEmUP`.`League`
(
    `LeagueID`   INT         NOT NULL AUTO_INCREMENT,
    `LeagueName` VARCHAR(45) NOT NULL,
    `Country`    VARCHAR(45) NOT NULL,
    PRIMARY KEY (`LeagueID`),
    FOREIGN KEY (`Country`) REFERENCES `TrackEmUP`.`Country`
(`CountryName`),
    UNIQUE KEY `LeagueName_UNIQUE` (`LeagueName`)
) ENGINE = InnoDB;


CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Manager`
(
    `ManagerID`          INT         NOT NULL AUTO_INCREMENT,
    `ManagerName`        VARCHAR(45) NOT NULL,
    `ManagerNationality` VARCHAR(45) NOT NULL,
    PRIMARY KEY (`ManagerID`),
    FOREIGN KEY (`ManagerNationality`) REFERENCES `TrackEmUP`.`Country`
(`CountryName`),
    UNIQUE KEY `ManagerName_UNIQUE` (`ManagerName`)
) ENGINE = InnoDB;
```

```
CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Stadium`
(
    `StadiumName`     VARCHAR(45) NOT NULL,
    `StadiumCapacity` INT         NOT NULL,
    `StadiumCity`     VARCHAR(45) NOT NULL,
    `StadiumCountry`  VARCHAR(45) NOT NULL,
    PRIMARY KEY (`StadiumName`),
    FOREIGN KEY (`StadiumCountry`) REFERENCES `TrackEmUP`.`Country`
(`CountryName`),
    UNIQUE KEY `StadiumName_UNIQUE` (`StadiumName`)
) ENGINE = InnoDB;


CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Team`
(
    `TeamID`      INT         NOT NULL AUTO_INCREMENT,
    `TeamName`    VARCHAR(45) NOT NULL,
    `TeamCity`    VARCHAR(45) NOT NULL,
    `TeamState`   VARCHAR(45) NOT NULL,
    `TeamCountry` VARCHAR(45) NOT NULL,
    `TeamLeague`  VARCHAR(45) NOT NULL,
    `TeamManager` VARCHAR(45) NOT NULL,
    `TeamStadium` VARCHAR(45) NOT NULL,
    PRIMARY KEY (`TeamID`),
    FOREIGN KEY (`TeamLeague`) REFERENCES `TrackEmUP`.`League`
(`LeagueName`),
    FOREIGN KEY (`TeamManager`) REFERENCES `TrackEmUP`.`Manager`
(`ManagerName`),
    FOREIGN KEY (`TeamCountry`) REFERENCES `TrackEmUP`.`Country`
(`CountryName`),

    FOREIGN KEY (`TeamStadium`) REFERENCES `TrackEmUP`.`Stadium`
(`StadiumName`),
    UNIQUE KEY `TeamName_UNIQUE` (`TeamName`)
) ENGINE = InnoDB;


CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Player`
(
    `PlayerID`          INT         NOT NULL AUTO_INCREMENT,
    `PlayerName`        VARCHAR(45) NOT NULL,
    `PlayerNationality` VARCHAR(45) NOT NULL,
    `PlayerPosition`    VARCHAR(3)  NOT NULL,
    `PlayerAge`         INT         NOT NULL,
    `PlayerHeight`      INT         NOT NULL,
    `PlayerWeight`      INT         NOT NULL,
    `PlayerFoot`        VARCHAR(1)  NOT NULL,
    `PlayerTeam`        VARCHAR(45) NOT NULL,
    PRIMARY KEY (`PlayerID`),
    FOREIGN KEY (`PlayerNationality`) REFERENCES `TrackEmUP`.`Country`
(`CountryName`),
```

```
    FOREIGN KEY (`PlayerTeam`) REFERENCES `TrackEmUP`.`Team`
(`TeamName`),
    UNIQUE KEY `PlayerName_UNIQUE` (`PlayerName`)
) ENGINE = InnoDB;


CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Referee`
(
    `RefereeID`          INT         NOT NULL AUTO_INCREMENT,
    `RefereeName`        VARCHAR(45) NOT NULL,
    `RefereeAge`         INT         NOT NULL,
    `RefereeNationality` VARCHAR(45) NOT NULL,
    `RefereeCategory`    VARCHAR(45) NOT NULL,
    PRIMARY KEY (`RefereeID`),
    FOREIGN KEY (`RefereeNationality`) REFERENCES `TrackEmUP`.`Country`
(`CountryName`),
    UNIQUE KEY `RefereeName_UNIQUE` (`RefereeName`)
) ENGINE = InnoDB;


CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Match`
(
    `MatchID`       INT         NOT NULL AUTO_INCREMENT,
    `MatchDate`     DATE        NOT NULL,
    `MatchTime`     TIME        NOT NULL,
    `MatchHomeTeam` VARCHAR(45) NOT NULL,
    `ScoreHomeTeam` INT(3)      NOT NULL,
    `MatchAwayTeam` VARCHAR(45) NOT NULL,
    `ScoreAwayTeam` INT(3)      NOT NULL,
    `MatchLeague`   VARCHAR(45) NOT NULL,
    `MatchStadium`  VARCHAR(45) NOT NULL,
    `RefereeID`     INT         NOT NULL,
    PRIMARY KEY (`MatchID`),
    FOREIGN KEY (`MatchHomeTeam`) REFERENCES `TrackEmUP`.`Team`
(`TeamName`),
    FOREIGN KEY (`MatchAwayTeam`) REFERENCES `TrackEmUP`.`Team`
(`TeamName`),
    FOREIGN KEY (`MatchLeague`) REFERENCES `TrackEmUP`.`League`
(`LeagueName`),
    FOREIGN KEY (`MatchStadium`) REFERENCES `TrackEmUP`.`Stadium`
(`StadiumName`),
    FOREIGN KEY (`RefereeID`) REFERENCES `TrackEmUP`.`Referee`
(`RefereeID`),
    UNIQUE KEY `MatchID_UNIQUE` (`MatchID`)
) ENGINE = InnoDB;

CREATE TABLE IF NOT EXISTS `TrackEmUP`.`Events`
(
    `EventID`   INT         NOT NULL AUTO_INCREMENT,
    `EventName` VARCHAR(45) NOT NULL,
    PRIMARY KEY (`EventID`),
    UNIQUE KEY `EventID_UNIQUE` (`EventID`)
) ENGINE = InnoDB;
```

```
CREATE TABLE IF NOT EXISTS `TrackEmUP`.`MatchEvent`
(
    `MatchEventID` INT          NOT NULL AUTO_INCREMENT,
    `MatchID`      INT          NOT NULL,
    `PlayerID`     INT          NOT NULL,
    `EventType`    INT          NOT NULL,
    `EventTime`    TIMESTAMP    NOT NULL DEFAULT CURRENT_TIMESTAMP,
    `Comments`     VARCHAR(300) NOT NULL DEFAULT 'No comments',
    PRIMARY KEY (`MatchEventID`),
    FOREIGN KEY (`MatchID`) REFERENCES `TrackEmUP`.`Match` (`MatchID`),
    FOREIGN KEY (`PlayerID`) REFERENCES `TrackEmUP`.`Player`
(`PlayerID`),
    FOREIGN KEY (`EventType`) REFERENCES `TrackEmUP`.`Events`
(`EventID`),
    UNIQUE KEY `MatchEventID_UNIQUE` (`MatchEventID`)
) ENGINE = InnoDB;
```

Scripts to insert records in DB

```
# Select Database
USE TrackEmUP;

# INSERT DATA INTO TABLES

# SET AUTO_INCREMENT
ALTER TABLE `TrackEmUP`.`Country`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Country`(CountryName)
VALUES ('Spain'),
       ('France'),
       ('Germany'),
       ('Italy'),
       ('United Kingdom');

# CREATE A FUNCTION TO REGISTER MORE COUNTRIES
DROP FUNCTION IF EXISTS TrackEmUP.`RegisterCountry`;

CREATE FUNCTION TrackEmUP.`RegisterCountry`(vCountry VARCHAR(250))
    RETURNS VARCHAR(250)
BEGIN
    INSERT INTO TrackEmUP.Country (CountryName) VALUES (vCountry);
    RETURN CONCAT('Successfully Registered: ', vCountry);
END;
```

```
SELECT TrackEmUP.RegisterCountry('Argentina') as Registered_Country;
SELECT TrackEmUP.RegisterCountry('Brazil') as Registered_Country;
SELECT TrackEmUP.RegisterCountry('Portugal') as Registered_Country;
SELECT TrackEmUP.RegisterCountry('Croatia') as Registered_Country;


ALTER TABLE `TrackEmUP`.`League`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`League`(LeagueName, Country)
VALUES ('La Liga', 'Spain'),
       ('Ligue 1', 'France'),
       ('Bundesliga', 'Germany'),
       ('Serie A', 'Italy'),
       ('Premier League', 'United Kingdom');


ALTER TABLE `TrackEmUP`.`Manager`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Manager`(ManagerName, ManagerNationality)
VALUES ('Pep Guardiola', 'Spain'),
       ('Zinedine Zidane', 'France'),
       ('Jurgen Klopp', 'Germany'),
       ('Carlo Ancelotti', 'Italy'),
       ('Alex Ferguson', 'United Kingdom'),
       ('José Mourinho', 'Portugal'),
       ('Lionel Scaloni', 'Argentina'),
       ('Tite', 'Brazil');


ALTER TABLE `TrackEmUP`.`Stadium`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Stadium`(StadiumName, StadiumCapacity,
StadiumCity, StadiumCountry)
VALUES ('Camp Nou', 99354, 'Barcelona', 'Spain'),
       ('Parc des Princes', 47938, 'Paris', 'France'),
       ('Allianz Arena', 75000, 'Munich', 'Germany'),
       ('San Siro', 80000, 'Milan', 'Italy'),
       ('Old Trafford', 76212, 'Manchester', 'United Kingdom'),
       ('Etihad Stadium', 53400, 'Manchester', 'United Kingdom');


ALTER TABLE `TrackEmUP`.`Team`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Team`(TeamName, TeamCity, TeamState,
TeamCountry, TeamLeague, TeamManager, TeamStadium)
VALUES ('Real Madrid', 'Madrid', 'Madrid', 'Spain', 'La Liga', 'Pep
Guardiola', 'Camp Nou'),
       ('Paris Saint-Germain', 'Paris', 'Ile-de-France', 'France',
'Ligue 1', 'Zinedine Zidane', 'Parc des Princes'),
       ('Juventus', 'Turin', 'Piemonte', 'Italy', 'Serie A', 'Carlo
Ancelotti', 'Allianz Arena'),
       ('Bayern Munich', 'Munich', 'Bavaria', 'Germany', 'Bundesliga',
```

```
'Jurgen Klopp', 'San Siro'),
       ('Tottenham Hotspur', 'London', 'England', 'United Kingdom',
'Premier League', 'Alex Ferguson', 'Old Trafford');


INSERT INTO `TrackEmUP`.`Team`(TeamName, TeamCity, TeamState,
TeamCountry, TeamLeague, TeamManager, TeamStadium)
VALUES ('Barcelona', 'Barcelona', 'Catalonia', 'Spain', 'La Liga',
'Tite', 'Camp Nou'),
       ('Manchester United', 'Manchester', 'England', 'United Kingdom',
'Premier League', 'Lionel Scaloni',
        'Old Trafford'),
       ('Manchester City', 'Manchester', 'England', 'United Kingdom',
'Premier League', 'José Mourinho',
        'Etihad Stadium');


ALTER TABLE `TrackEmUP`.`Player`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Player`(PlayerName, PlayerNationality,
PlayerPosition, PlayerAge, PlayerHeight, PlayerWeight,
                                 PlayerFoot, PlayerTeam)
VALUES ('Sergio Ramos', 'Spain', 'CB', 35, 184, 82, 'R', 'Real Madrid'),
       ('Kylian Mbappe', 'France', 'ST', 23, 178, 73, 'R', 'Paris
Saint-Germain'),
       ('Leonardo Bonucci', 'Italy', 'CB', 34, 187, 85, 'R',
'Juventus'),
       ('Manuel Neuer ', 'Germany', 'GK', 35, 193, 92, 'R', 'Bayern
Munich'),

       ('Harry Kane', 'United Kingdom', 'ST', 27, 188, 89, 'R',
'Tottenham Hotspur'),
       ('Lionel Messi', 'Argentina', 'ST', 34, 170, 72, 'R',
'Barcelona'),
       ('Cristiano Ronaldo', 'Portugal', 'ST', 36, 187, 83, 'R',
'Juventus'),
       ('Paul Pogba', 'France', 'CM', 28, 191, 84, 'R', 'Manchester
United'),
       ('Neymar', 'Brazil', 'ST', 29, 175, 68, 'R', 'Paris
Saint-Germain'),
       ('Luka Modric', 'Croatia', 'CM', 35, 172, 66, 'R', 'Real
Madrid'),
       ('Sergio Aguero', 'Argentina', 'ST', 33, 173, 70, 'R',
'Manchester City'),
       ('Antoine Griezmann', 'France', 'ST', 30, 176, 73, 'R',
'Barcelona'),
       ('Raheem Sterling', 'United Kingdom', 'RW', 27, 170, 70, 'R',
'Manchester City'),
       ('Toni Kroos', 'Germany', 'CM', 31, 183, 76, 'R', 'Real Madrid'),
       ('Karim Benzema', 'France', 'ST', 33, 185, 81, 'R', 'Real
Madrid'),
       ('Gareth Bale', 'United Kingdom ', 'RW', 31, 183, 79, 'R', 'Real
Madrid'),
```

```
       ('Thiago Silva', 'Brazil', 'CB', 36, 183, 79, 'R', 'Paris
Saint-Germain'),
       ('Marcelo', 'Brazil', 'LB', 34, 174, 66, 'R', 'Real Madrid'),
       ('Sergio Busquets', 'Spain', 'CM', 33, 189, 76, 'R',
'Barcelona'),
       ('Gerard Pique', 'Spain', 'CB', 34, 194, 85, 'R', 'Barcelona'),
       ('Luis Nani', 'Portugal', 'RW', 35, 175, 69, 'R', 'Manchester
United'),
       ('David De Gea', 'Spain', 'GK', 30, 192, 82, 'R', 'Manchester
United'),
       ('Paulo Dybala', 'Argentina', 'ST', 27, 177, 75, 'R',
'Juventus'),
       ('Andrea Pirlo', 'Italy', 'CM', 41, 180, 75, 'R', 'Juventus'),
       ('Gianluigi Buffon', 'Italy', 'GK', 43, 191, 92, 'R',
'Juventus'),
       ('Gonzalo Higuain', 'Argentina', 'ST', 33, 185, 81, 'R',
'Juventus'),
       ('Mario Mandzukic', 'Croatia', 'ST', 34, 191, 88, 'R',
'Juventus'),
       ('Leon Goretzka', 'Germany', 'CM', 26, 188, 84, 'R', 'Bayern
Munich'),
       ('Thomas Muller', 'Germany', 'ST', 32, 183, 76, 'R', 'Bayern
Munich'),
       ('Joshua Kimmich', 'Germany', 'CM', 26, 183, 76, 'R', 'Bayern
Munich'),
       ('Mats Hummels', 'Germany', 'CB', 32, 191, 92, 'R', 'Bayern
Munich'),
       ('Serge Gnabry', 'Germany', 'RW', 25, 180, 75, 'R', 'Bayern
Munich'),
       ('Dele Alli', 'United Kingdom', 'CM', 25, 178, 74, 'R',
'Tottenham Hotspur'),
       ('Eric Dier', 'United Kingdom', 'CM', 27, 183, 76, 'R',
'Tottenham Hotspur'),
       ('Hugo Lloris', 'France', 'GK', 34, 188, 84, 'R', 'Tottenham
Hotspur'),
       ('Kyle Walker', 'United Kingdom', 'RB', 30, 183, 76, 'R',
'Tottenham Hotspur');


INSERT INTO `TrackEmUP`.`Referee`(RefereeName, RefereeAge,
RefereeNationality, RefereeCategory)
VALUES ('Pierluigi Collina', 60, 'Italy', 'Legend'),
       ('Howard Webb', 50, 'United Kingdom', 'Elite'),
       ('Mark Clattenburg', 50, 'United Kingdom', 'Elite'),
       ('Massimiliano Irrati', 50, 'Italy', 'Legend'),
       ('Michael Oliver', 50, 'United Kingdom', 'Elite'),
       ('Nikola Rizzoli', 50, 'Italy', 'Legend'),
       ('Carlos Velasco Carballo', 50, 'Spain', 'Medium');


ALTER TABLE `TrackEmUP`.`Match`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Match`(MatchDate, MatchTime, MatchHomeTeam,
```

```
ScoreHomeTeam, MatchAwayTeam, ScoreAwayTeam,
                                MatchLeague, MatchStadium, RefereeID)
VALUES ('2022-01-01', '20:00:00', 'Real Madrid', 2, 'Barcelona', 1, 'La
Liga', 'Allianz Arena', 1),
       ('2022-12-02', '19:00:00', 'Manchester City', 1, 'Tottenham
Hotspur', 2, 'Premier League', 'Etihad Stadium', 2),
       ('2022-10-03', '21:00:00', 'Manchester United', 1, 'Manchester
City', 2, 'Serie A', 'Old Trafford', 3),
       ('2022-07-06', '20:00:00', 'Manchester United', 2, 'Tottenham
Hotspur', 1, 'Premier League', 'Old Trafford', 6),
       ('2022-06-07', '20:00:00', 'Barcelona', 7, 'Real Madrid', 4, 'La
Liga', 'Camp Nou', 7);


ALTER TABLE `TrackEmUP`.`Events`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`Events`(EventName)
VALUES ('Goal'),
       ('Yellow Card'),
       ('Red Card'),
       ('Foul'),
       ('Offside'),
       ('Penalty'),
       ('Injury'),
       ('Own Goal');


ALTER TABLE `TrackEmUP`.`MatchEvent`
    AUTO_INCREMENT = 1;
INSERT INTO `TrackEmUP`.`MatchEvent`(MatchID, PlayerID, EventType)
VALUES (1, 12, 1),
       (1, 14, 1),
       (1, 10, 1),
       (2, 11, 2),
       (2, 13, 2),
       (2, 21, 1),
       (4, 22, 8);
```

SQL Queries? Si se dice consultas asi?

```
USE TrackEmUP;
```

1) Proyección y selección

```
# SELECTS ALL COUNTRIES (s)
SELECT *
FROM TrackEmUP.country
ORDER BY CountryID;

# SELECTS PLAYER NAME, NATIONALITY, POSITION, FOOT & TEAM (p)
SELECT PlayerName, PlayerNationality, PlayerPosition, PlayerFoot,
PlayerTeam
FROM TrackEmUP.player
GROUP BY PlayerName, PlayerPosition
ORDER BY PlayerPosition;
```

2) Join

```
# SELECTS COUNTRIES WITH A LEAGUE
SELECT CountryID, Country, LeagueName, LeagueID
FROM TrackEmUP.league
         JOIN TrackEmUP.country
              ON TrackEmUP.league.Country =
TrackEmUP.country.CountryName;
```

3) Agregados

```
# COUNT HOW MANY TEAMS ARE IN EACH LEAGUE
SELECT LeagueName, COUNT(TeamName) AS TeamCount
FROM TrackEmUP.team
         JOIN TrackEmUP.league
              ON TrackEmUP.team.TeamLeague =
TrackEmUP.league.LeagueName
GROUP BY LeagueName
ORDER BY TeamCount DESC;
```

4) EXTRAS

```
# UPDATE AGUERO'S YELLOW CARD
UPDATE TrackEmUP.matchevent
SET Comments = 'Kicking corner flag'
WHERE MatchEventID = 4;

# CHECK UPDATED
SELECT MatchEventID, MatchID, PlayerName, EventName, Comments
FROM TrackEmUP.matchevent
JOIN TrackEmUP.player
    ON TrackEmUP.matchevent.PlayerID = TrackEmUP.player.PlayerID
JOIN TrackEmUP.events ON TrackEmUP.matchevent.EventType =
TrackEmUP.events.EventID
WHERE MatchEventID = 4;
```

```
# SEE ALL MATCH EVENTS
SELECT MatchEventID, MatchID, PlayerName, EventName, Comments
FROM TrackEmUP.matchevent
JOIN TrackEmUP.player
    ON TrackEmUP.matchevent.PlayerID = TrackEmUP.player.PlayerID
JOIN TrackEmUP.events ON TrackEmUP.matchevent.EventType =
TrackEmUP.events.EventID;
```

Functions

```
USE TrackEmUP;

# CHECK IF FUNCTION ALREADY EXISTS & DROP IT (FUNCTION CODE MOVED
TO DML)
# DROP FUNCTION IF EXISTS TrackEmUP.`RegisterCountry`;

# CREATE FUNCTION (BEFORE INSERTING PLAYERS) RegisterCountry
# CREATE FUNCTION TrackEmUP.`RegisterCountry`(vCountry
VARCHAR(250))
#     RETURNS VARCHAR(250)
# BEGIN
#     INSERT INTO TrackEmUP.Country (CountryName) VALUES
(vCountry);
#     RETURN CONCAT('Successfully Registered: ', vCountry);
# END;

# # CALL FUNCTION (ALREADY CALLED IN DML)
# SELECT TrackEmUP.RegisterCountry('Argentina') as
Registered_Country;
# SELECT TrackEmUP.RegisterCountry('Brazil') as
Registered_Country;
# SELECT TrackEmUP.RegisterCountry('Portugal') as
Registered_Country;
# SELECT TrackEmUP.RegisterCountry('Croatia') as
Registered_Country;


# CHECK IF FUNCTION ALREADY EXISTS & DROP IT
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchTeamsByCountry`;

# CREATE PROCEDURE
CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchTeamsByCountry`(vCountry VARCHAR(250))
BEGIN
   SELECT * FROM TrackEmUP.Team WHERE TeamCountry = vCountry;
END;
```

```
# CALL PROCEDURE
CALL TrackEmUP.`TrackEmUP.SearchTeamsByCountry`('Argentina'); #
RETURNS 0 ROWS
CALL TrackEmUP.`TrackEmUP.SearchTeamsByCountry`('Spain');
# RETURNS 2 ROWS


# CREATE A FUNCTION THAT SHOWS ALL MATCHES BETWEEN A DATE
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchMatchesByDate`;

CREATE PROCEDURE TrackEmUP.`TrackEmUP.SearchMatchesByDate`(sDate
DATE, eDate DATE)
BEGIN
   SELECT * FROM TrackEmUP.Match WHERE MatchDate BETWEEN sDate AND
eDate;
END;

CALL TrackEmUP.`TrackEmUP.SearchMatchesByDate`('2022-01-01',
'2022-06-30');
# RETURNS 2 ROWS


# CREATE A FUNCTION THAT SHOWS ALL PLAYERS WITH RED CARDS
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersWithRedCards`;

CREATE PROCEDURE TrackEmUP.`TrackEmUP.SearchPlayersWithRedCards`()
BEGIN
   SELECT MatchEventID, MatchID, matchEvent.PlayerID, PlayerName,
EventTime, Comments
   FROM TrackEmUP.MatchEvent
            JOIN TrackEmUP.Player ON matchEvent.PlayerID =
Player.PlayerID
   WHERE EventType = 3;
END;


CALL TrackEmUP.`TrackEmUP.SearchPlayersWithRedCards`();
# RETURNS 0 ROWS

# CREATE A FUNCTION THAT SHOWS ALL PLAYERS WITH YELLOW CARDS
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersWithYellowCards`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchPlayersWithYellowCards`()
BEGIN
   SELECT MatchEventID, MatchID, matchEvent.PlayerID, PlayerName,
EventTime, Comments
   FROM TrackEmUP.MatchEvent
            JOIN TrackEmUP.Player ON matchEvent.PlayerID =
Player.PlayerID
```

```
   WHERE EventType = 2;
END;

CALL TrackEmUP.`TrackEmUP.SearchPlayersWithYellowCards`();
# RETURNS 2 ROWS

# CREATE A FUNCTION THAT SHOWS ALL PLAYERS WITH GOALS
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersWithGoals`;

CREATE PROCEDURE TrackEmUP.`TrackEmUP.SearchPlayersWithGoals`()
BEGIN
   SELECT MatchEventID, MatchID, matchEvent.PlayerID, PlayerName,
EventTime, Comments
   FROM TrackEmUP.MatchEvent
            JOIN TrackEmUP.Player ON matchEvent.PlayerID =
Player.PlayerID
   WHERE EventType = 1;
END;

CALL TrackEmUP.`TrackEmUP.SearchPlayersWithGoals`();
# RETURNS 4 ROWS

# CREATE A FUNCTION THAT SHOWS ALL THE GAMES OF A TEAM
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchMatchesByTeam`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchMatchesByTeam`(teamName VARCHAR(250))
BEGIN
   SELECT * FROM TrackEmUP.Match WHERE MatchHomeTeam = teamName OR
MatchAwayTeam = teamName;
END;

CALL TrackEmUP.`TrackEmUP.SearchMatchesByTeam`('Manchester
United');
# RETURNS 2 ROWS

# CREATE A FUNCTION THAT SHOWS ALL THE GAMES WITH A SPECIFIC
REFEREE
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchMatchesByReferee`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchMatchesByReferee`(refID INT)
BEGIN
   SELECT MatchID,
          MatchDate,
          MatchHomeTeam,
          ScoreHomeTeam,
          MatchAwayTeam,
          ScoreAwayTeam,
          MatchLeague,
```

```
            MatchStadium
      FROM TrackEmUP.Match
      WHERE RefereeID = refID;
END;

CALL TrackEmUP.`TrackEmUP.SearchMatchesByReferee`(2);
# RETURNS 1 ROW

# CREATE A FUNCTION THAT SHOWS ALL THE GAMES IN A STADIUM
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchMatchesByStadium`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchMatchesByStadium`(stadiumName
VARCHAR(250))
BEGIN
   SELECT MatchID,
          MatchDate,
          MatchHomeTeam,
          ScoreHomeTeam,
          MatchAwayTeam,
          ScoreAwayTeam,
          MatchLeague,
          MatchStadium
   FROM TrackEmUP.Match
   WHERE MatchStadium = stadiumName;
END;

CALL TrackEmUP.`TrackEmUP.SearchMatchesByStadium`('Old Trafford');
# RETURNS 2 ROWS


# SHOW ALL MATCH EVENTS WHERE A PLAYER WAS INVOLVED
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchMatchEventsByPlayer`;



CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchMatchEventsByPlayer`(ID INT)
BEGIN
   SELECT matchevent.MatchEventID, matchevent.MatchID,
Events.EventName, matchevent.EventTime, matchevent.Comments
   FROM TrackEmUP.MatchEvent
            JOIN TrackEmUP.Events ON matchevent.EventType =
Events.EventID
   WHERE matchevent.PlayerID = ID;
END;

CALL TrackEmUP.`TrackEmUP.SearchMatchEventsByPlayer`(11);
# RETURNS 1 ROW
```

```
# SHOW ALL PLAYERS OF A TEAM
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersByTeam`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchPlayersByTeam`(teamName VARCHAR(250))
BEGIN
   SELECT player.playerid,
          playername,
          playernationality,
          playerposition,
          playerage,
          playerheight,
          playerweight,
          playerfoot
   FROM TrackEmUP.Player
   WHERE Player.PlayerTeam = teamName
   ORDER BY playerposition;
END;


CALL TrackEmUP.`TrackEmUP.SearchPlayersByTeam`('Juventus');
# RETURNS 7 ROWS

# SHOW ALL PLAYERS OF A TEAM WITH A SPECIFIC POSITION
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersByTeamAndPosition`;


CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchPlayersByTeamAndPosition`(teamName
VARCHAR(250), position VARCHAR(3))
BEGIN
   SELECT player.playerid,
          playername,
          playernationality,
          playerposition,
          playerage,
          playerheight,
          playerweight,
          playerfoot
   FROM TrackEmUP.Player
   WHERE Player.PlayerTeam = teamName
     AND Player.PlayerPosition = position;
END;

CALL
TrackEmUP.`TrackEmUP.SearchPlayersByTeamAndPosition`('Barcelona',
'ST');
# RETURNS 2 ROWS


# SHOW ALL PLAYERS OF A TEAM WITH A SPECIFIC POSITION
```

```
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersByPosition`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchPlayersByPosition`(position VARCHAR(3))
BEGIN
   SELECT * FROM TrackEmUP.Player WHERE Player.PlayerPosition =
position;
END;

CALL TrackEmUP.`TrackEmUP.SearchPlayersByPosition`('GK');
# RETURNS 4 ROWS


# SHOW ALL PLAYERS OF A NATIONALITY
DROP PROCEDURE IF EXISTS
TrackEmUP.`TrackEmUP.SearchPlayersByNationality`;

CREATE PROCEDURE
TrackEmUP.`TrackEmUP.SearchPlayersByCountry`(country VARCHAR(250))
BEGIN
   SELECT * FROM TrackEmUP.Player WHERE Player.PlayerNationality =
country;
END;

CALL TrackEmUP.`TrackEmUP.SearchPlayersByCountry`('Spain'); #
RETURNS 4 ROWS
```

Results and conclusions

Our task was to create a database with the essentials to be able to implement it in everyday life. The results of the project were as expected. Our database managed to run with all the information of players, coaches, teams, and more, perfectly, and could even be given a statistical approach.

We are satisfied with the completion of this project because we were able to join two of our areas of interest, such as soccer and databases, with the aim of proposing an improvement to the systems currently used.

In the future we would like to generate the option of having different types of users and be able to implement it first at the internal UP tournament level, then inter-collegiate, then national and finally worldwide.