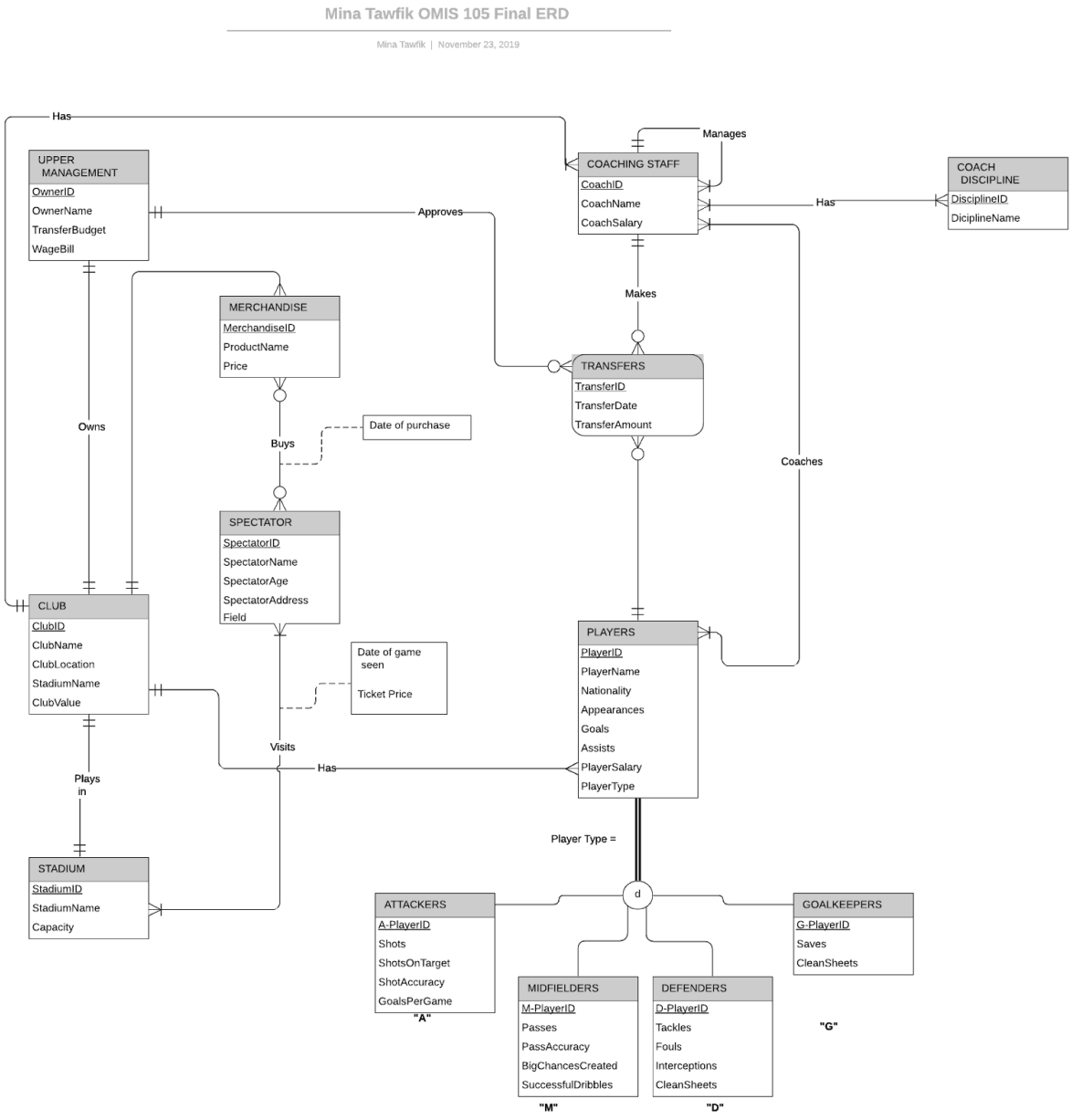
Located in the United Kingdom, the Premier League is considered one of the best, if not the best soccer league in the world in terms of talent, competitiveness and popularity. The Premier League is comprised of 20 clubs scattered throughout the UK. With recent advancements in technology the league officials have decided to implement a new database to better record individual club data for any given season. This will allow the league to make this information more visible to whomever is seeking it as well as provide for a more organized structure.

As stated earlier there are 20 clubs in the league. Each club has a name, club id, location, club value, and stadium name. Each stadium belongs to exactly one club, however there can be multiple stadiums within any given city. Each stadium has a name, stadium ID, and capacity. Within a given season, thousands of fans attend matches. For marketing purposes, the league now wants to record spectator data to better advertise and market games as well as provide clubs with this information. A spectator can go to any game he/she pleases. Spectator data includes: Name, Spectator ID, age, and address.

Each Club within the league is structured more or less the same. Upper management controls the finances of each club and the hiring of the coaching staff. Upper management information include the owner ID, owner name, transfer budget, and wage bill. The club has to employ at least one coach, but they usually appoint many coaches who specialize in a certain discipline (shooting coach, defense coach, goalie trainer, etc). Coaches can have multiple disciplines. However, each club has a manager who is in charge of all the coaches as well as having a say in which players they want to transfer. Coaches have a name, coach, ID, age, discipline, and salary. Players who are bought by the manager through the transfer market from other clubs are categorized by Attackers, Midfielders, defenders and goalkeepers. The database will record each player's name, player ID, nationality, appearances, goals scored, goals assisted, salary, and transfermarket value. Furthermore each position has a set of more specific statistics. Attackers will additionally have: shots, shots on target, shot accuracy, and goals per game. Midfielders will have: passes completed, pass accuracy, big chances created, and successful dribbles. Defenders will have: tackles, fouls, interceptions, and clean sheets. Goalkeepers will have: saves and clean sheets.

There is a transfer market in which the clubs can buy and sell players to other clubs. There is not a limit in which how many players can be transferred from one club to another, clubs also do not have to sell their players on the market. The information recorded is transfer ID, Transfer, Date, and transfer amount. Coaches are allowed to transfer players, but there also must be approved by the owner before the transfer is initiated.

Lastly each club sells it own merchandise which contains the merchandise ID, product name, and the price of the product. Each club also wants to track the date a product is purchased by a spectator.



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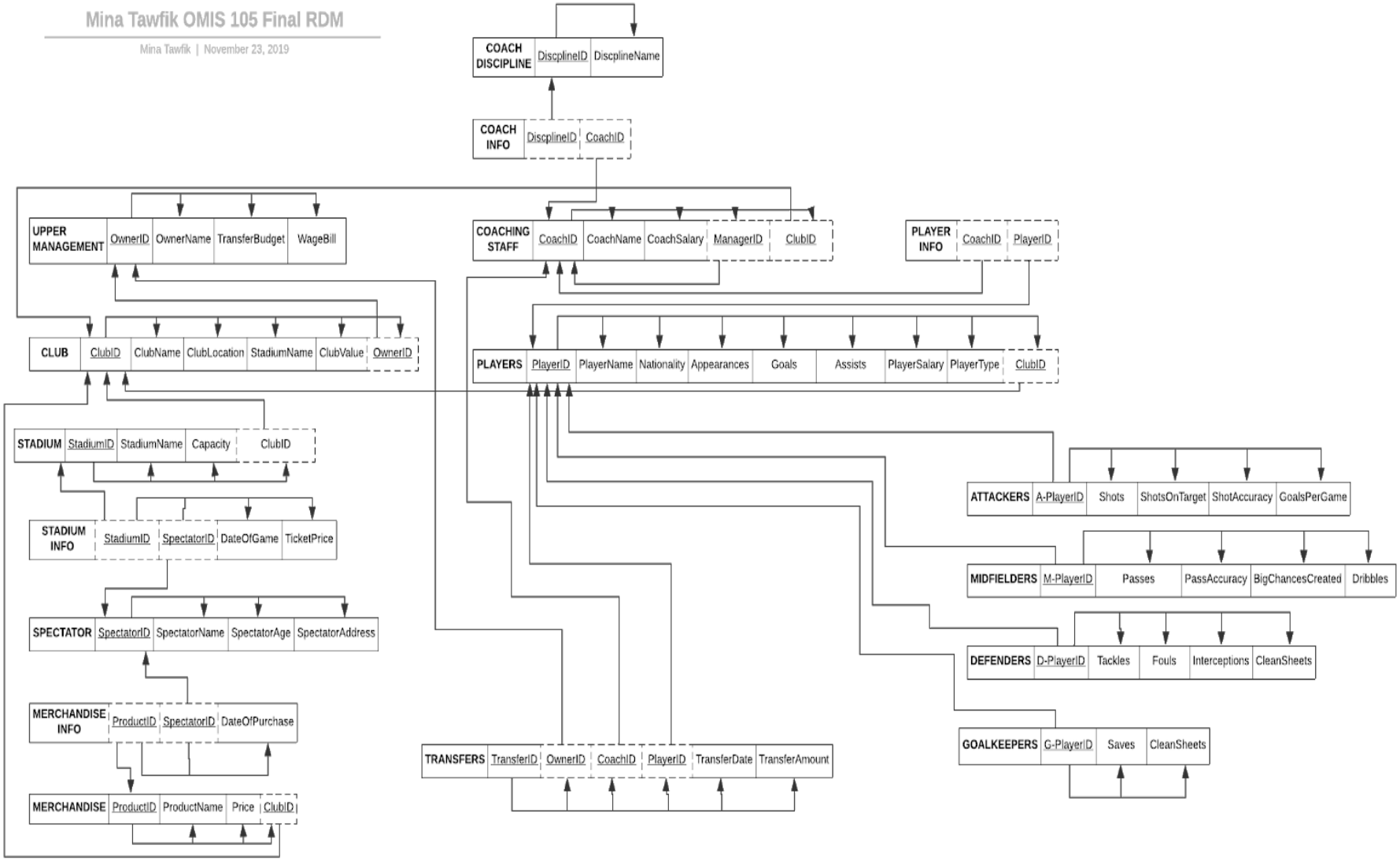

Data Dictionary

UpperMgmt_T

Name	Data Type	Constraints	Key	Description	Example
OwnerID	numeric(11,0)	>0	PK	Unique identifier for Owner	123
OwnerName	varchar(25)			Name of Owner	Jack Black
WageBill	numeric(9,0)	>0		Allotted money for player wages	100000
TransferBudget	numeric(9,0)	>0		Allotted money for transfer fees	100000

Club_T

Name	Data Type	Constraints	Key	Description	Example
ClubID	numeric(11,0)	>0	PK	Unique Identifier for club	12345
OwnerID	numeric(11,0)	>0	FK	Unique identifier for owner	12234
ClubName	varchar(30)			Name of club	Chelsea
Club Location	varchar(30)			Name of city in UK where club is located	London
Club Value	numeric(10,0)	>0		Market valuation for club in $	1234567

Stadium_T

Name	Data Type	Constraints	Key	Description	Example
StadiumID	numeric(11,0)	>0	PK	Unique identifier for stadium	12345
ClubID	numeric(11,0)	>0	FK	Unique identifier for club	12345
StadiumName	varchar(20)			Stadium name	London Stadium
Capacity	numeric(5,0)	>0		Stadium capacity	56000

Spectator_T

Name	Data Type	Constraints	Key	Description	Example
SpectatorID	numeric(11,0)	>0	PK	Unique identifier for spectator	12345
SpectatorName	varchar(20)			Spectator name	John Smith
SpectatorAddress	varchar(35)			Spectator address	123 Free Drive

SpectatorAge	numerica(2,0)	>0		Spectator age	33

StadiumInfo_T

Name	Data Type	Constraints	Key	Description	Example
StadiumID	numeric(11,0)	>0	PK, FK	Unique identifier for stadium	12345
SpectatorID	numeric(11,0)	>0	PK, FK	Unique identifier for spectator	12345
DateOfGame	date			Date of game seen	1/11/19
TicketPrice	decimal(3,2)	>0		Price of ticket in $	6.50

Merchandise_T

Name	Data Type	Constraints	Key	Description	Example
MerchandiseID	numeric(11,0)	>0	PK	Unique identifier for merchandise	12345
ClubID	numeric(11,0)	>0	FK	Unique identifier for club	12345
ProductName	varchar(20)			Product Name	Jersey
Price	decimal(3,2)	>0		Price of product	4.50

MerchandiseInfo_T

Name	Data Type	Constraints	Key	Description	Example
MerchandiseID	numeric(11,0)	>0	PK, FK	Unique identifier for merchandise	12345
SpectatorID	numeric(11,0)	>0	PK, FK	Unique identifier for spectator	12345
DateOfPurchase	date			Date of purchase	1/11/19

CoachingStaff_T

Name	Data Type	Constraints	Key	Description	Example
CoachID	numeric(11,0)	>0	PK	Unique Identifier for coach	12345
ManagerID	numeric(11,0)	>0		Unique identifier for manager	12345
ClubID	numeric(11,0)	>0	FK	Unique identifier for club	12345
CoachName	varchar(25)			Coach name	
CoachSalary	numeric(8,0)	>0		Coach salary in $	600000

Discipline_T

Name	Data Type	Constraints	Key	Description	Example
DisciplineID	numeric(11,0)	>0	PK	Unique identifier for coach discipline	12345
DiscoplineName	varchar(20)			Name of coach discipline	Shooting

CoachInfo_T

Name	Data Type	Constraints	Key	Description	Example
CoachID	numeric(11,0)	.>0	PK, FK	Unique identifier for coach	12345
DisciplineID	numeric(11,0)	>0	PK, FK	Unique identifier for coach discipline	12345

Players_T

Name	Data Type	Constraints	Key	Description	Example
PlayerID	numeric(11,0)	>0	PK	Unique identifier for player	12345
ClubID	numeric(11,0)	>0	FK	Unique Identifier for club	12345
PlayerName	varchar(20)			Name of player	Mohamed Salah
Nationality	varchar(20)			Country player is from	Egypt
Appearances	numeric(3,0)	>0		# of games played	100
Goals	numeric(3,0)	>0		# of goals scored	100
Assists	numeric(3,0)	>0		# of assists	100
PlayerSalary	numeric(8,0)	>0		Player salary in $	23000000
PlayerType	varchar(1)	>0		Player position	A

PlayerInfo_T

Name	Data Type	Constraints	Key	Description	Example
CoachID	numeric(11,0)	>0	PK, FK	Unique identifier for coach	12345
PlayerdID	numeric(11,0)	>0	PK, FK	Unique identifier for player	12345

Attackers_T

Name	Data Type	Constraints	Key	Description	Example

APlayerID	numeric(11,0)	>0	PK, FK	Unique Identifier for attacker	12345
Shots	numeric(4,0)			Total number of shots	345
ShotsOnTarget	numeric(4,0)			Total number of shots on target	23
ShotAccuracy	numeric(2,0)			Percent value of shot accuracy	45
GoalsPerGame	decimal(2,2)			# of goals per game	.67

Midfielders_T

Name	**Data Type**	**Constraints**	**Key**	**Description**	**Example**
MPlayerID	numeric(11,0)	>0	PK,FK	Unique identifier for midfielder	12345
Passes	numeric(5,0)			Total number of passes	1234
PassAccuracy	numeric(2,0)			Percent value of pass accuracy	83
BigChancesCreated	numeric(3,0)			Total number of big chances created	456
Dribbles	numeric(3,0)			Total number of dribbles	111

Defenders_T

Name	**Data Type**	**Constraints**	**Key**	**Description**	**Example**
DPlayerID	numeric(11,0)	>0	PK, FK	Unique identifier for defender	12345
Tackles	numeric(4,0)			Total number of tackles	333
Fouls	numeric(4,0)			Total number of fouls	2222
Interceptions	numeric(4,0)			Total number of interceptions	221
CleanSheets	numeric(3,0)			Total number of clean sheets	212

GoalKeepers_T

Name	**Data Type**	**Constraints**	**Key**	**Description**	**Example**
GPlayerID	numeric(11,0)	>0	PK, FK	Unique identifier for goalies	12345
Saves	numeric(4,0)			Total number of saves	232

GoalieCleanSheets	numeric(4,0)			Total number of clean sheets	332

Transfers_T

Name	Data Type	Constraints	Key	Description	Example
TransferID	numeric(11,0)	>0	PK	Unique identifier for transfer	12345
OwnerID	numeric(11,0)	>0	FK	Unique identifier for owner	12345
CoachID	numeric(11,0)	>0	FK	Unique identifier for coach	12345
PlayerID	numeric(11,0)	>0	FK	Unique identifier for player	12345
TransferDate	date			Date of transfer	1/11/19
TransferAmount	numeric(9,0)	>0		Amount of transfer in $	45000000

Create Code

```
-- Create UpperMgmt Table
CREATE TABLE UpperMgmt_T
          (OwnerID NUMERIC(11,0) NOT NULL,
           OwnerName VARCHAR(25) NOT NULL,
           TransferBudget NUMERIC(9),
           WageBill NUMERIC(9),
CONSTRAINT Owner_PK PRIMARY KEY (OwnerID));

-- Create Club Table
CREATE TABLE Club_T
          (ClubID NUMERIC(11,0) NOT NULL,
           OwnerID NUMERIC(11,0),
           ClubName VARCHAR(30),
           ClubLocation VARCHAR(30),
           ClubValue  Numeric(10),
CONSTRAINT Club_PK PRIMARY KEY (ClubID),
CONSTRAINT Club_FK1 FOREIGN KEY (OwnerID) REFERENCES UpperMgmt_T(OwnerID));

-- Create Stadium Table
CREATE TABLE Stadium_T
          (StadiumID NUMERIC(11,0) NOT NULL,
           ClubID NUMERIC(11,0),
           StadiumName VARCHAR(20),
          Capacity NUMERIC(5),
CONSTRAINT Stadium_PK PRIMARY KEY (StadiumID),
CONSTRAINT Stadium_FK1 FOREIGN KEY (ClubID) REFERENCES Club_T(ClubID));

-- Create Spectator Table
```

```
CREATE TABLE Spectator_T
            (SpectatorID NUMERIC(11,0) NOT NULL,
            SpectatorName VARCHAR(20),
            SpectatorAddress VARCHAR(35),
            SpectatorAge NUMERIC(2),
CONSTRAINT Spectator_PK PRIMARY KEY (SpectatorID));

-- Create Stadium Info Table
CREATE TABLE StadiumInfo_T
             (StadiumID NUMERIC(11,0) NOT NULL,
              SpectatorID NUMERIC(11,0) NOT NULL,
              DateOfGame DATE DEFAULT GETDATE(),
              TicketPrice DECIMAL(3,2)
CONSTRAINT StadiumInfo_PK PRIMARY KEY (StadiumID, SpectatorID),
CONSTRAINT StadiumInfo_FK1 FOREIGN KEY (StadiumID) REFERENCES Stadium_T(StadiumID),
CONSTRAINT StadiumInfo_FK2 FOREIGN KEY (SpectatorID) REFERENCES Spectator_T(SpectatorID));

-- Create Merchandise Table
CREATE TABLE Merchandise_T
            (MerchandiseID NUMERIC(11,0) NOT NULL,
             ClubID NUMERIC(11,0)Not null,
             ProductName VARCHAR(20),
             Price Decimal(3,2),
CONSTRAINT Merchandise_PK PRIMARY KEY (MerchandiseID),
CONSTRAINT Merchandise_FK1 FOREIGN KEY (ClubID) REFERENCES Club_T(ClubID));

--Create Merchandise Info Table
CREATE TABLE MerchandiseInfo_T
             (MerchandiseID NUMERIC(11,0) NOT NULL,
               SpectatorID NUMERIC(11,0) NOT NULL,
               DateOfPurchase DATE DEFAULT GETDATE(),
CONSTRAINT MerchandiseInfo_PK PRIMARY KEY (MerchandiseID, SpectatorID),
CONSTRAINT MerchandiseInfo_FK1 FOREIGN KEY (MerchandiseID) REFERENCES
Merchandise_T(MerchandiseID),
CONSTRAINT Merchandise_FK2 FOREIGN KEY (SpectatorID) REFERENCES Spectator_T(SpectatorID));

-- Create Coaching Staff Table
CREATE TABLE CoachingStaff_T
             (CoachID NUMERIC(11,0) NOT NULL,
              ManagerID NUMERIC(11,0) Not null,
              ClubID NUMERIC(11,0) NOT NULL,
              CoachName VARCHAR(25),
              CoachSalary NUMERIC(8),
CONSTRAINT CoachingStaff_PK PRIMARY KEY (CoachID),
---CONSTRAINT CoachingStaff_FK1 FOREIGN KEY (ManagerID) REFERENCES CoachingStaff_TCoachID),
CONSTRAINT CoachingStaff_FK2 FOREIGN KEY (ClubID) REFERENCES Club_T(ClubID));

-- Create Coach Discipline Table
CREATE TABLE Discipline_T
            (DisciplineID NUMERIC(11,0) NOT NULL,
             DiscoplineName VARCHAR(20)
CONSTRAINT Discipline_PK PRIMARY KEY (DisciplineID));
```

```
--Create Coach Info Table
CREATE TABLE CoachInfo_T
            (CoachID NUMERIC(11,0) NOT NULL,
             DisciplineID NUMERIC(11,0) NOT NULL,
CONSTRAINT CoachInfo_PK PRIMARY KEY (CoachID, DisciplineID),
CONSTRAINT CoachInfo_FK1 FOREIGN KEY (CoachID) REFERENCES CoachingStaff_T(CoachID),
CONSTRAINT CoachInfo_FK2 FOREIGN KEY (DisciplineID) REFERENCES Discipline_T(DisciplineID));

-- Create Players Table
CREATE TABLE Players_T
           (PlayerID NUMERIC(11,0) NOT NULL,
           ClubID NUMERIC(11,0) not null,
           PlayerName VARCHAR(20),
           Nationality VARCHAR(20),
           Appearances NUMERIC(3),
            Goals NUMERIC(3),
            Assists NUMERIC(3),
            PlayerSalary NUMERIC(8),
            PlayerType VARCHAR(1)
CONSTRAINT Players_PK PRIMARY KEY (PlayerID),
CONSTRAINT Players_FK1 FOREIGN KEY (ClubID) REFERENCES Club_T(ClubID));

--- Create PlayerInfo Table
CREATE TABLE PlayerInfo_T
           (CoachID NUMERIC(11,0) NOT NULL,
            PlayerID NUMERIC(11,0) NOT NULL,
CONSTRAINT PlayerInfo_PK PRIMARY KEY (CoachID, PlayerID),
CONSTRAINT PlayerInfo_FK1 FOREIGN KEY (CoachID) REFERENCES CoachingStaff_T(CoachID),
CONSTRAINT PlayerInfo_FK2 FOREIGN KEY (PlayerID) REFERENCES Players_T(PlayerID));

-- Create Attackers Table
CREATE TABLE Attackers_T
          (APlayerID NUMERIC(11,0) NOT NULL,
           Shots NUMERIC(4),
           ShotsOnTarget NUMERIC(4),
           ShotAccuracy NUMERIC(2),
           GoalsPerGame DECIMAL(2,2),
CONSTRAINT Attackers_PK PRIMARY KEY (APlayerID),
CONSTRAINT Attackers_FK1 FOREIGN KEY (APlayerID) REFERENCES Players_T(PlayerID));

-- Create Midfielders Table
CREATE TABLE Midfielders_T
(MPlayerID NUMERIC(11,0) NOT NULL,
                          Passes NUMERIC(5),
                           PassAccuracy NUMERIC(2),
                           BigChancesCreated NUMERIC(3),
                           Dribbles NUMERIC(3),
CONSTRAINT Midfielders_PK PRIMARY KEY (MPlayerID),
CONSTRAINT Midfielders_FK1 FOREIGN KEY (MPlayerID) REFERENCES Players_T(PlayerID));

-- Create Defenders Table
CREATE TABLE Defenders_T
          (DPlayerID NUMERIC(11,0) NOT NULL,
          Tackles NUMERIC(4),
```

```
            Fouls NUMERIC(4),
            Interceptions NUMERIC(4),
            CleanSheets NUMERIC(3),
CONSTRAINT Defenders_PK PRIMARY KEY (DPlayerID),
CONSTRAINT Defenders_FK1 FOREIGN KEY (DPlayerID) REFERENCES Players_T(PlayerID));

-- Create Goalkeepers Table
CREATE TABLE GoalKeepers_T
           (GPlayerID NUMERIC(11,0) NOT NULL,
            Saves NUMERIC(4),
            GoalieCleanSheets NUMERIC(4),
CONSTRAINT GoalKeepers_PK PRIMARY KEY (GPlayerID),
CONSTRAINT GoalKeepers_FK1 FOREIGN KEY (GPlayerID) REFERENCES Players_T(PlayerID));

-- Create Transfers Table
CREATE TABLE Transfers_T
           (TransferID NUMERIC(11,0) NOT NULL,
            OwnerID NUMERIC(11,0) NOT NULL,
            CoachID                    NUMERIC(11,0) NOT NULL,
             PlayerID                  NUMERIC(11,0) NOT NULL,
             TransferDate          DATE DEFAULT GETDATE(),
            TransferAmount    NUMERIC(9)
CONSTRAINT TransferInfo_PK PRIMARY KEY (TransferID),
CONSTRAINT TransferInfo_FK FOREIGN KEY (OwnerID) REFERENCES UpperMgmt_T(OwnerID),
CONSTRAINT TransferInfo_FK1 FOREIGN KEY (CoachID) REFERENCES CoachingStaff_T(CoachID),
CONSTRAINT TransferInfo_FK2 FOREIGN KEY (PlayerID) REFERENCES Players_T(PlayerID));
```

Views

```
-- 1st View: London Clubs

create view London_Clubs as

        select ClubID, ClubName,ClubLocation

        from Club_T

        where ClubLocation like 'London'
```

This view is important because London is England's main town which has the most clubs in the Premier League. This view will be helpful for whoever needs it to make quick queries regarding any club from London.

```
-- 2nd View: English Players

create view English_Players as
```

```
    select PlayerID, PlayerName, Nationality

    from Players_T
```

Since the premier league is a British league, it only makes sense to provide this view for whoever needs it. The league wants to use this view to show young English kids that it is very possible for them to make it to the Premier League. British Players make up a majority of the league.

```
-- 3rd View: players with more than 20 goals

create view Top_Goal_Scorers as

    select PlayerID, PlayerName, Goals

    from Players_T

    where Goals > 20
```

This view is increasingly important especially due to the analytics growth within soccer. Players with more than 20 goals are better for any data related studies since they are more efficient produces on the pitch. So it only makes sense to filter out the top goal scorers from the other players.