

# Efficient Football Team Management System

DAMG 6210

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Group Number: Group 2

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Topic: Efficient Football Team Management System

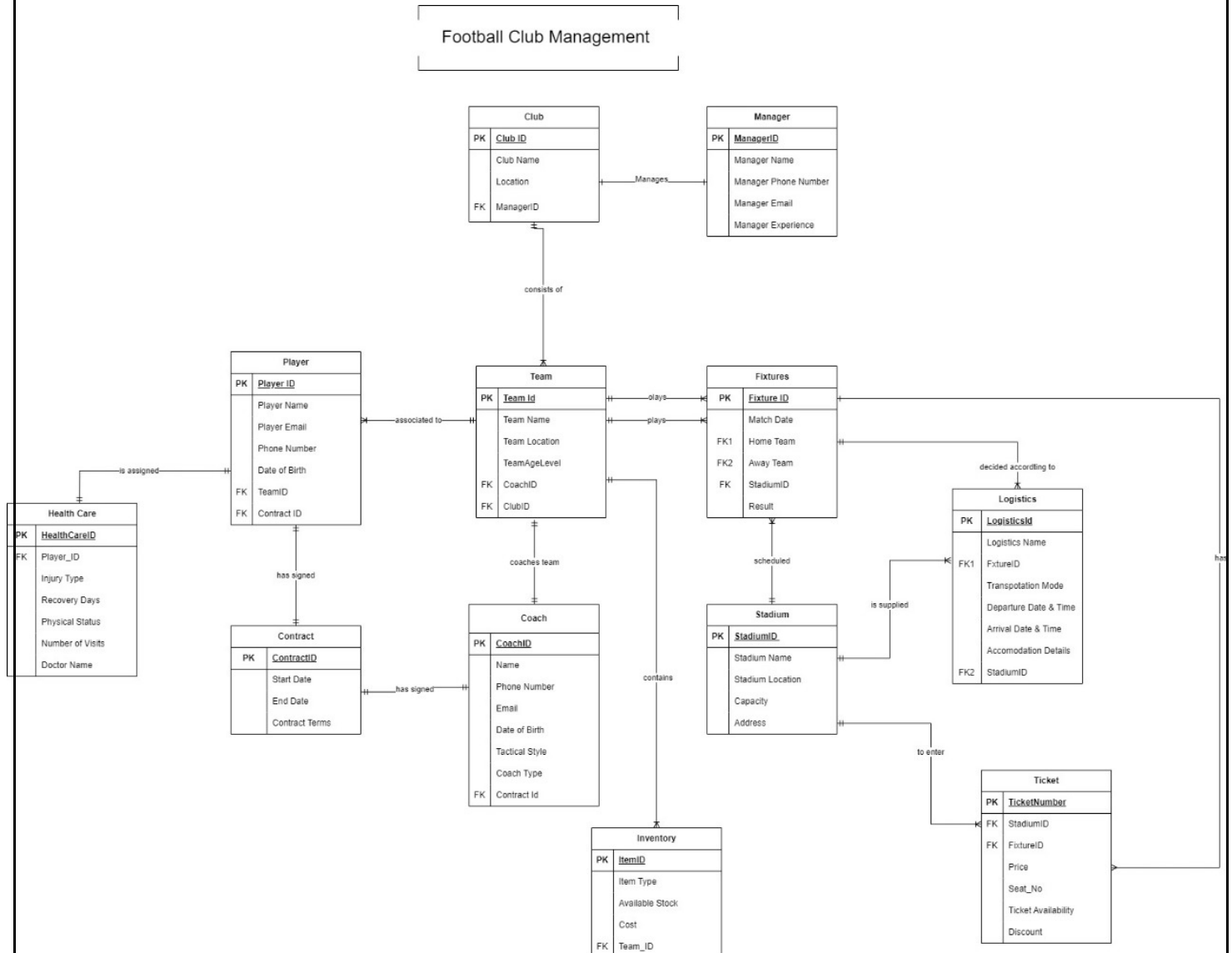
GitHub Link:[https://github.com/Abhishek-Chintapalli/Football\\_Club\\_Management-DataBase](https://github.com/Abhishek-Chintapalli/Football_Club_Management-DataBase)

Object Type	Quantity or Yes/No	Comments
Tables	12	
Views	4	
Table Level Check Constraint	3	
Computed Column based on UDF	2	
Non-Clustered Indexes	3	
Stored Procedures	5	
User Defined Functions (UDF)	2	
DML Triggers	4	
Column Data Encryption	1	
BI Data Visualization	Yes	
GUI for CRUD Operations	Yes	

**Order of executing Query**

- 1.DDL
- 2.Triggers
- 3.Dml
- 4.Non clustered indexes
- 5.Procedures
- 6 Views
- 7.Udf
- 8.Encryption

## P4. Database Implementation



[https://drive.google.com/file/d/1Ck3j4DNAajze4GMaIZfW\\_NUxUQMZ1qJq/view](https://drive.google.com/file/d/1Ck3j4DNAajze4GMaIZfW_NUxUQMZ1qJq/view)

## Club

Attributes: Club ID (PK), ManagerID (FK), Club Name, Location, Levels of team (Age Category)

### Relationships and Cardinality:

One Club can have multiple Teams (1:N).

One Club can have multiple Fixtures as a Home Team (1:N).

## Player

Attributes: Player ID (PK), Player Name, Player Email, Phone Number, Date of Birth, TeamID (FK), Contract ID (FK)

Relationships and Cardinality:

One Player can have one Health Care record (1:1).

One Player can have one Contract (1:1).

**Team**

Attributes: Team ID (PK), Team Name, Team Location, CoachID (FK), ClubID (FK)

Relationships and Cardinality:

One Team can have multiple Players (1:N).

One Team can have multiple Fixtures (1:N).

One Team can have multiple Inventories (1:N).

**Health Care**

Attributes: HealthCareID (PK), Player\_ID (FK), Injury Type, Recovery Days, Physical Status, Number of Visits, Doctor Name

**Contract**

Attributes: ContractID (PK), Start Date, End Date, Contract Terms

**Coach**

Attributes: CoachID (PK), Name, Phone Number, Email, Date of Birth, Tactical Style, Coach Type, Contract Id (FK)

**Fixtures**

Attributes: Fixture ID (PK), Match Date, Home Team (FK), Away Team (FK), StadiumID (FK), Result

Relationships and Cardinality:

One Fixture is played at one Stadium (1:1).

**Stadium**

Attributes: StadiumID (PK), Stadium Name, Stadium Location, Capacity, Location, Address

Relationships and Cardinality:

One Stadium can host multiple Fixtures (1:N).

One Stadium can have multiple Tickets associated with it (1:N).

**Logistics**

Attributes: LogisticsId (PK), Logistics Name, FixtureID (FK), Transportation Mode, Departure Date & Time, Arrival Date & Time, Accommodation Details.

Relationships and Cardinality:

One Logistics entry is related to one Fixture (1:1).

**Inventory**

Attributes: ItemID (PK), Item Type, Available Stock, Cost, Team\_ID (FK)

**Ticket**

Attributes: TicketNumber (PK), StadiumID (FK), Price, Section\_No, Ticket Availability, Discount.

## **Database objects:**

### **1 Stored procedures**

Procedure 1: A stored procedure to update the recovery days of a player in the HealthCare table by Player\_ID.

Procedure 2: Sells or reduces items based on the requirement like team name, item type and quantity.

Procedure 3: Procedure Which utilizes View and updates the recovery status.

Procedure 4: Adjusting ticket price according to the given input.

### **2 View**

View 1: Health Care with Dynamic recovery.

View 2: Checking the active contracts.

View 3: Quick snapshot of ticket sales performance for upcoming events to make informed decisions on marketing, pricing adjustments, and logistics.

### **3 DML trigger**

Trigger 1: Ensures that fixtures are not scheduled on the same day at the same stadium to avoid scheduling conflicts.

Trigger 2: Gives error message if contract is more than 5 or less than 2.

Trigger 3: Inventory can never go in negative stock.

Trigger 4: No duplicate phone numbers are allowed.

### **4 CHECK Constraints**

Table Level Check Constraint 1: Contract end date should less than start date

Table Level Check Constraint 2: min age of the entered player is more or less than 15

Table Level Check Constraint 3: Adding Check Constraint to ensure HomeTeam and AwayTeam are not the same

### **5 User defined function (UDF)**

UDF1 - Calculating Contract Duration.

Udf 2 combined with a View.

### **6 Non-clustered indexes**

Non-Clustered Index 1: Index on Player Table for Searching by Team.

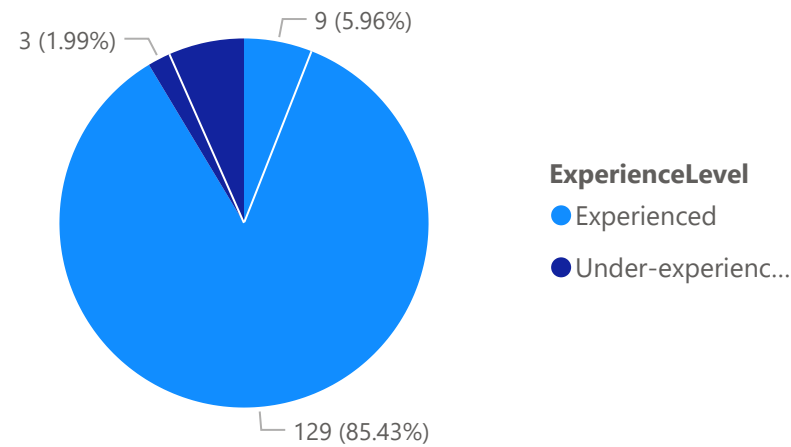
Non Clustered Index 2: Index on HealthCare Table for Quick Access to Player Health Records.

Non Clustered Index 3: Index on Fixtures Table for Match Dates.

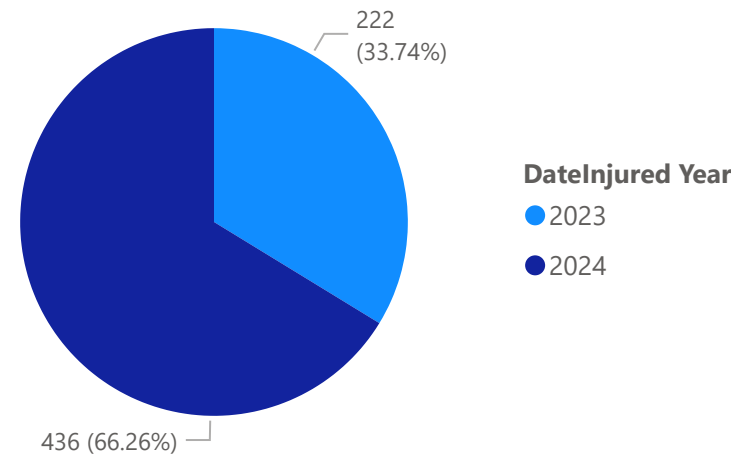
### **7 Encryption of Data**

Encrypting coaches phone number to make it more secure and decrypting using a procedure

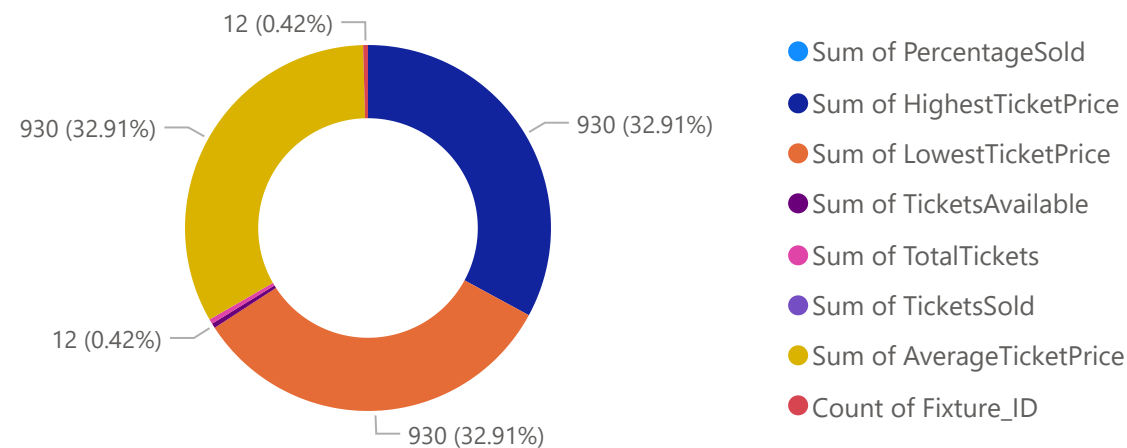
Count of ManagerID and Sum of ExperienceYears by ExperienceLevel



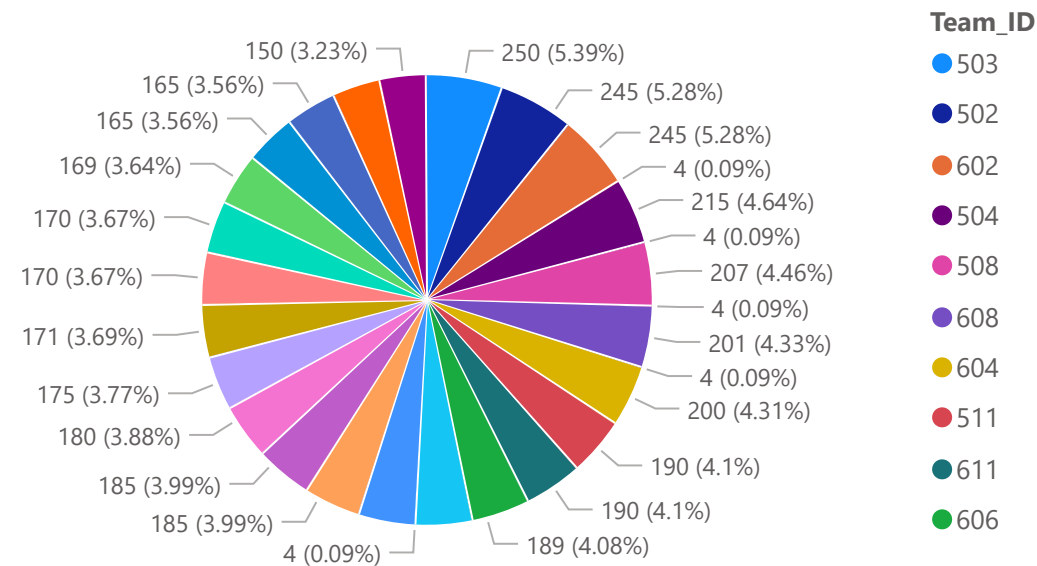
Sum of DaysSinceInjury by Year



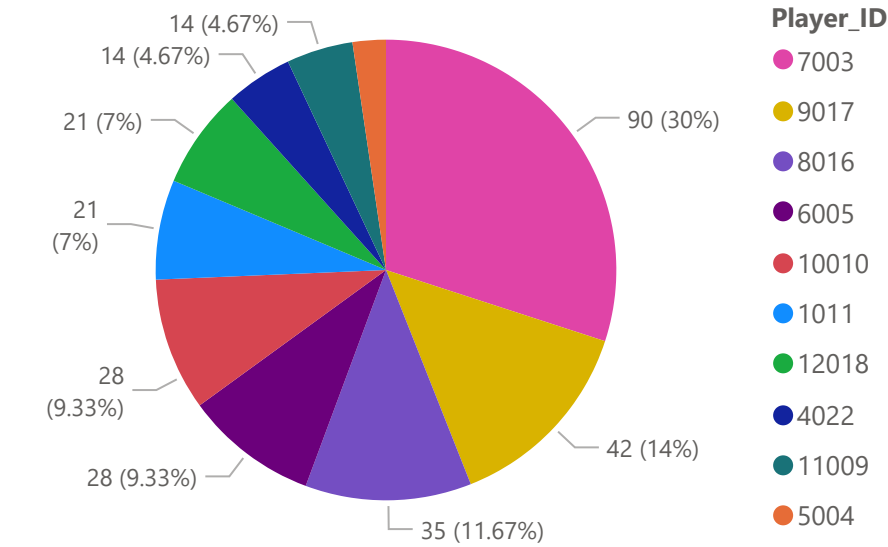
Sum of PercentageSold, Sum of HighestTicketPrice, Sum of LowestTicketPrice, Sum of TicketsAvailable, Sum of TotalTickets, Sum of TicketsSold, Sum of AverageTicketPrice and Count of Fixture\_ID



Sum of AvailableStock and Count of ItemID by Team\_ID



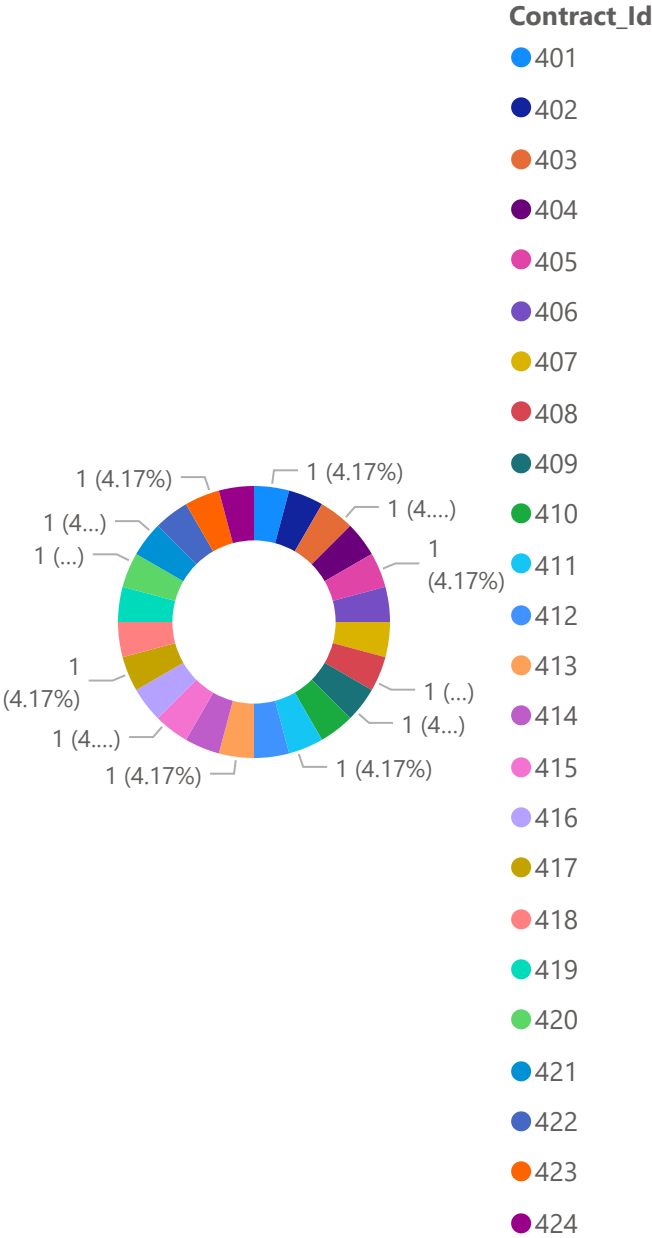
Sum of RecoveryDays by Player\_ID



show [clubs](#)

ClubName	Club_ID	Location	ManagerID
AC Milan	112	Milan	715
Arsenal FC	109	London	763
Atletico Madrid	111	Madrid	400
Bayern Munich	106	Munich	203
Borussia Dortmund	110	Dortmund	555
Chelsea FC	108	London	233
FC Barcelona	101	Barcelona	785
Juventus	107	Turin	846
Liverpool FC	103	Liverpool	674
Manchester City	102	Manchester	389
Paris Saint-Germain	105	Paris	496
Real Madrid	104	Madrid	226

Count of CoachID by Contract\_Id



Count of LogisticsID by AccomodationDetails, Year, Quarter, Month, Day, Year, Quarter, Month, Day and FixtureID

