

## Chapter-1

### Introduction

The objective of the “Football Club Management System” is to provide the basic knowledge of management of all the abilities in football. It provides all the basic details about each sector of football and their functions. The main objective of this application is to develop a system in which the data of the players are stored in a database so there is no data loss and the data in the database can be used for future reference. An online football management system is a complete package to be used by the club to improve the efficiency of the business. The admins can keep the system updated all the time.

The main purpose of designing this management system is to manage the whole system online so that all the work goes in a very systematic manner. So now keeping in mind, the management have decided to design an online system so that all the things get automatically updated and kept safe in the database. In this system, the main role is of players who can become the members of this club by doing registration and then they can purchase the sports apparels. This system will keep the online record of all the football data in a database so there is no data loss taking place. It will also keep the good record of maintenance of the stadium. The main idea behind this database management system relies on the fact that it is very real-life based concept. It covers the important aspects of the football clubs regarding their management. All the entities have been corelated to each other on the basis of their functioning. Since, it is about football club it provides the recent news about the games that are coming, about the specific player's details, the club's stadium, about the club's manager, their performance on the league, their status and details of every matches being played by the club.

## Chapter 2

# System Requirement Specification

A **System Requirements Specification (SRS)** (also known a Software Requirement Specification) is a document or set of documentation that describes the features and behavior of a system or software application. It includes a variety of elements (see below) that attempts to define the intended functionality required by the customer to satisfy their different users.

In addition to specifying how the system should behave, the specification also defines at a high-level the main business processes that will be supported, what simplifying assumptions have been made and what **key performance parameters** will need to be met by the system.

The hardware and software requirements of a computer system are required to install and use the software efficiency in the SRS. The minimum requirements need to be met for the program to run efficiently all the times on the system are as follows

### 2.1 Software Requirement

The software requirements are description of features and functionalities of the target system. Requirements convey the expectations of users from the software product. The requirements can be obvious or hidden, known or unknown, expected or unexpected from client's point of view. The goal of requirement engineering is to develop and maintain sophisticated and descriptive 'System Requirements Specification' document.

The software requirements specify the pre-installed software needed to run the code being implemented in this project.

- Windows operating system
- Oracle 10g express edition

## 2.2 Hardware Requirement

Usage of CPU, RAM and storage space can vary significantly based on user behavior. These hardware recommendations are based on traditional deployments and may grow or shrink depending on how active users are. The hardware requirement specifies the necessary hardware which provides us the platform to implement our programs.

Processor: Intel dual core or GHZ or above

Processor speed: 1.0 GHZ or above

RAM: 2 GB RAM or above

Hard Disk: 20 GB hard-drive space or above

## Chapter 3

# System Design

### 3.1 SQL

SQL is a special-purpose programming language designed for managing data in a relational database management system (RDMS), or for stream processing in a relational data stream management system (RDMS). Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, data manipulation language and a data control language. The scope of SQL includes data insert, query, Update and delete, schema creation and modification, and data access control. SQL includes data access control. SQL stores each data item in its own field. In SQL, the fields related to a particular person, thing or event are bundled together to form a single complete unit of data, called a record (it can also be referred to as raw or an occurrence). Each record is made up of a number of fields. No two fields in a record can have the same field name.

- i. SQL is widely popular because it offers the following advantages
- ii. Allows users to access data in the relational database management systems
- iii. Allows users to describe the data
- iv. Allows users to define the data in a database and manipulate that data
- v. Allows to embed within other languages using SQL modules, libraries & pre-compilers
- vi. Allows users to create and drop databases and tables

### 3.2 Oracle Database 10g Express Edition

An oracle data base is a collection of data treated for enterprise grid computing, the most flexible and cost-effective way to manage information and application. Enterprise grid computing creates large pools of industry-standard, modular storage and services. With this architecture, each new system can be rapidly provisioned from the pool of components. There is no need for peak workloads, because capacity can be easily added or reallocated from the resource pools as needed.

### 3.3 Entity Relationship Model

An **Entity Relational Model** (ER model) is a data model for describing the data or informing aspects of a business domain or its process requirements in an abstract way that tends itself to ultimately being implemented in a database such as relational database. The main components of ER models are entities and can exist among them. Entity-Relationship modeling was developed by Peter Chen and published in a 1976 paper. The ER diagram is drawn to have a better understanding of the whole scenario; it is used to conceptualize the phenomena, actions and interactions between various entities and to arrive at the specific requirements in a comprehensive manner.

An entity relationship model is the result of using a systematic process to describe and define a subject area of business data. The data is represented as components (entities) that are linked with each other by relationships that express the dependencies and requirements between them, entities may have various properties (attributes) that characterize them. In the case of a relational database, which stores data in tables, every row of each table represents one instance of an entity. Some data fields in these tables point to indexes in other tables: such pointers are the physical implementation of the relationships.

### 3.4 Relational Schema Model

A relational schema is a named relation defined by a set of attributes. The term relation schema refers to a heading paired with a set of constraints defined in terms of that heading. A relation can thus be seen as an instantiation of a relation schema if it has the heading of that schema and it satisfies the applicable constraints. Schema diagram for online shopping of electronic goods is shown as figure.

### 3.5 Entity

Basic object that the ER model represent in an entity, which is a thing in the real world with an independent existence. An entity may be an object with a physical existence (e.g. a company, a job or a universally course)

### 3.6 Attribute

Each entity has attributes. It is a particular property that describes entity. For example, an employee entity may be described by the employee's name, age, address, salary and job. A particular entity will have a value for each of its attributes. The attribute value that describes each entity becomes a major part of the data stored in the database.

## Football Club Management System

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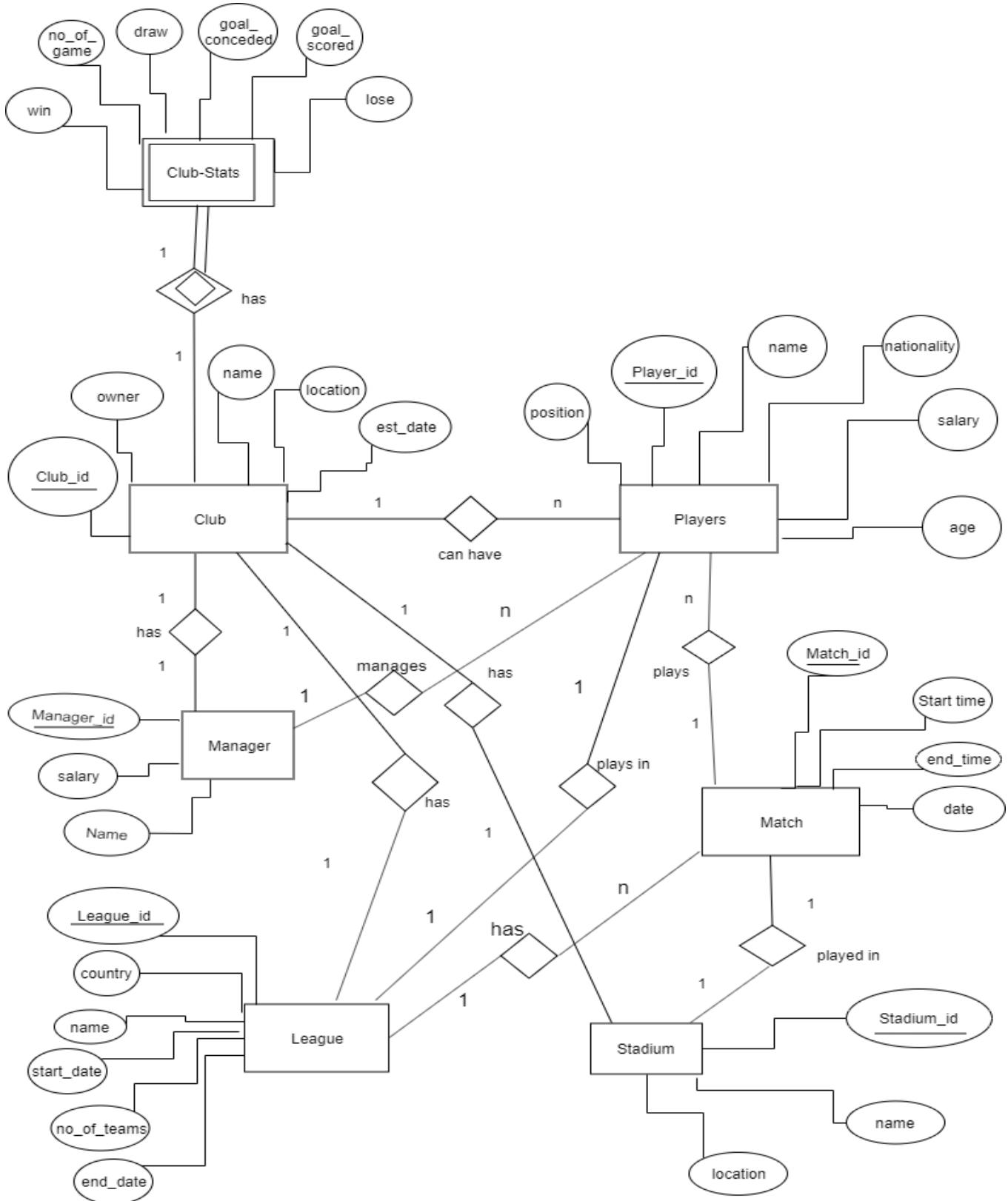


Fig: ER Diagram of Football Club Management System

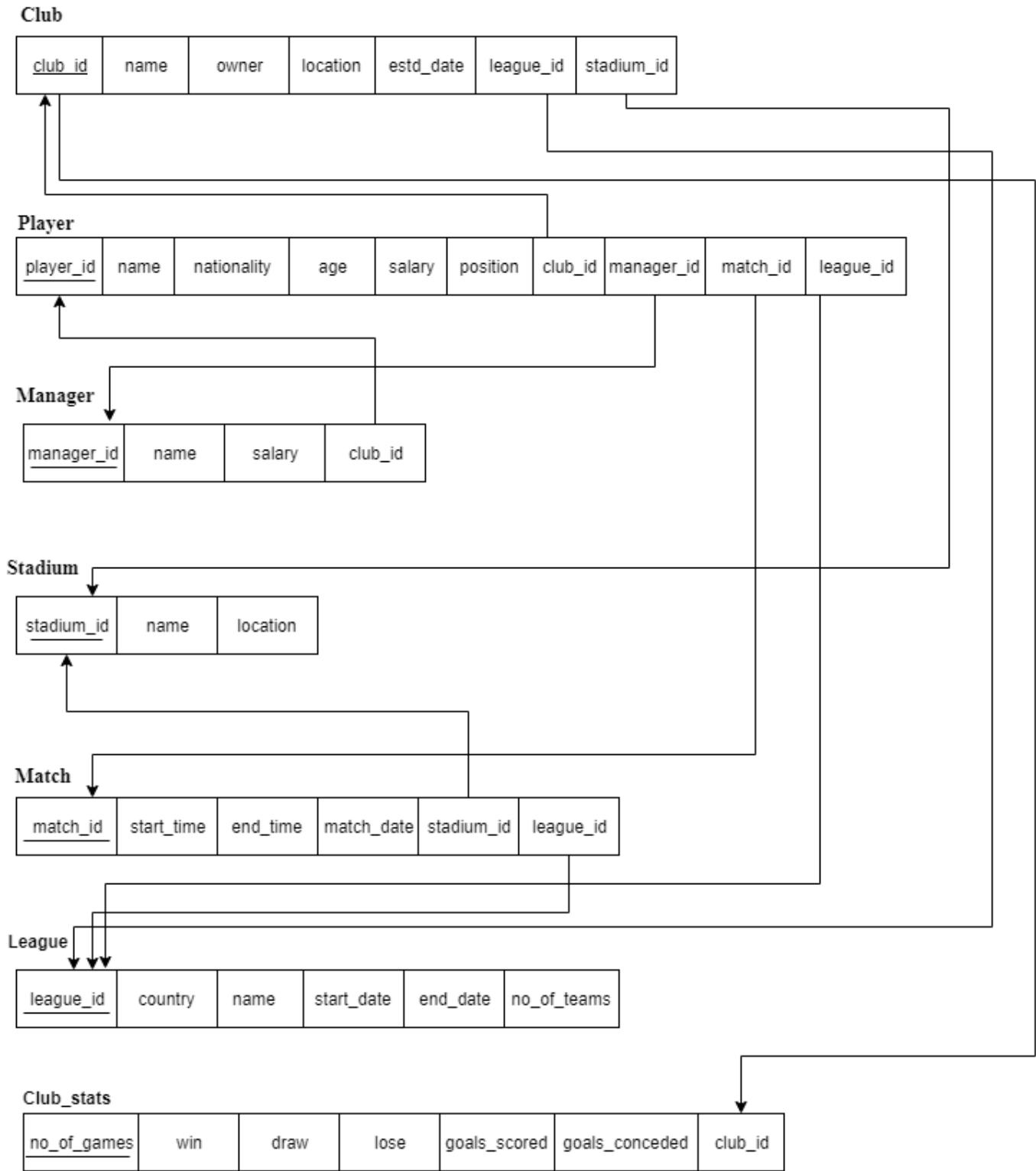


Fig: Relational Schema Diagram for Football Club Management System

## Chapter 4

### Coding

```
create table club(
    club_id varchar(10) primary key,
    name varchar(20),
    owner varchar(20),
    location varchar(20),
    estd_date varchar(20),
    league_id varchar(20),
    stadium_id varchar(20)
);

create table player(
    player_id varchar(20) primary key,
    name varchar(20),
    nationality varchar(20),
    age int,
    salary int,
    position varchar(20),
    club_id varchar(20),
    manager_id varchar(20),
    match_id varchar(20),
    league_id varchar(20)
);

create table manager(
    manager_id varchar(10) primary key,
    name varchar(20),
    salary int,
    club_id varchar(10)
);
```

```
create table stadium(
    stadium_id varchar(20) primary key,
    name varchar(20),
    location varchar(20),
);

create table match1(
    match_id varchar(20) primary key,
    start_time varchar(20),
    end_time varchar(20),
    match_date varchar(20),
    stadium_id varchar(20),
    league_id varchar(20)
);

create table league(
    league_id varchar(20) primary key,
    country varchar(20),
    name varchar(20),
    start_date varchar(20),
    end_date varchar(20),
    no_of_teams int
);

create table club_stats(
    no_of_games int,
    win int,
    draw int,
    lose int,
    goal_scored int,
    goal_conceded int,
    club_id varchar(20)
);
```

### **Insert into Club**

```
insert into club values('c1','RealMadrid','James','Madrid','1874','l1','s1');  
insert into club values('c2','Arsenal','Henry','London','1873','l2','s2');  
insert into club values('c3','Liverpool','Joe','Liverpool','1864','l2','s3');  
insert into club values('c4','ManCity','Sheikh','Manchester','1894','l2','s4');  
insert into club values('c5','Bayern','John','Munich','1888','l3','s5');  
insert into club values('c6','PSG','Rock','Paris','1884','l4','s6');  
insert into club values('c7','Juventus','Mark','Rome','1875','l5','s7');
```

### **Insert into Player**

```
insert into player values('p1','Modric','Czech',32,3000,'MidFielder','c1','mg1','m1','l1');  
insert into player values('p2','Kevin','Belgium',28,5000,'MidFiledler','c4','mg4','m5','l2');  
insert into player values('p3','Salah','Egypt',27,4000,'Winger','c3','mg3','m8','l2');  
insert into player values('p4','Ronaldo','Portugal',33,4000,'Striker','c7','mg7','m4','l4');  
insert into player values('p5','Sancho','England',20,5000,'Winger','c5','mg5','m6','l3');  
insert into player values('p6','Silva','Brazil',32,5500,'Defender','c6','mg6','m7','l4');  
insert into player values('p7','Leno','England',23,3000,'Goalkeeper','c2','mg2','m2','l2');  
insert into player values('p8','Laporte','France',27,3500,'Defender','c4','mg4','m5','l2');  
insert into player values('p9','Ederson','Brazil',25,3500,'Goalkeeper','c4','mg4','m15','l2');  
insert into player values('p10','Pepe','Portugal',31,3200,'Defender','c1','mg1','m13','l1');  
insert into player values('p11','Xhakap','Switzerland',28,3300,'Midfiler','c2','mg2','m10','l2');  
insert into player values('p12','Mane','Senegal',27,3800,'Winger','c3','mg3','m12','l2');  
insert into player values('p13','Muller','Germany',33,3800,'Winger','c5','mg5','m11','l3');  
insert into player values('p14','Mbappe','France',20,4000,'Winger','c6','mg6','m9','l5');  
insert into player values('p15','Danilo','Brazil',27,3800,'Defender','c7','mg7','m14','l4');
```

### **Insert into Stadium**

```
insert into stadium values('s1','Santiago','Madrid');  
insert into stadium values('s2','Emirates','London');  
insert into stadium values('s3','Anfield','Liverpool');  
insert into stadium values('s4','Etihad','Manchester');
```

```
insert into stadium values('s5','AllianzA','Munich');  
insert into stadium values('s6','Princes','Paris');  
insert into stadium values('s7','AllianzS','Turin');
```

### **Insert into Manager**

```
insert into manager values('mg1','Zidane',3000,'c1');  
insert into manager values('mg2','Emery',4000,'c2');  
insert into manager values('mg3','Klopp',3000,'c3');  
insert into manager values('mg4','Pep',5000,'c4');  
insert into manager values('mg5','Kovac',6000,'c5');  
insert into manager values('mg6','Thomas',5000,'c6');  
insert into manager values('mg7','Sam',4000,'c7');
```

### **Insert into League**

```
insert into league values('l1','Spain','Laliga','06-Aug','04-May',20);  
insert into league values('l2','England','PL','06-Aug','06-May',20);  
insert into league values('l3','Germany','Bundesliga','08-Aug','06-May',18);  
insert into league values('l4','France','league1','02-Aug','16-May',18);  
insert into league values('l5','Italy','SeriaA','16-Aug','20-May',20);
```

### **Insert into Match**

```
insert into match1 values('m1','9am','10am','16Aug','s1','l1');  
insert into match1 values('m2','10:00am','11:45am','20-May','s2','l2');  
insert into match1 values('m3','10:30am','12:15am','02-Dec','s3','l2');  
insert into match1 values('m4','3:00pm','4:45pm','01-Jan','s7','l5');  
insert into match1 values('m5','7:00pm','8:45pm','02-Feb','s4','l2');  
insert into match1 values('m6','5:00pm','7:00pm','06-Dec','s5','l3');  
insert into match1 values('m7','7:00am','9:00am','08-May','s6','l4');  
insert into match1 values('m8','11:00am','1:00pm','03-May','s3','l3');  
insert into match1 values('m9','3:00pm','5:00pm','04-June','s7','l5');  
insert into match1 values('m10','6:00pm','8:00pm','08-Aug','s4','l2');
```

```
insert into match1 values('m11','12:30pm','2:00pm','13-Mar','s5','l3');  
insert into match1 values('m12','3:15pm','5:15pm','18-Sep','s2','l2');  
insert into match1 values('m13','4:20pm','6:20pm','21-Dec','s1','l1');  
insert into match1 values('m14','5:50pm','7:00pm','17-Feb','s6','l4');  
insert into match1 values('m15','1:00pm','3:00pm','18-Oct','s4','l2');
```

### **Insert into Club\_Stats**

```
insert into club_stats values(38,18,10,10,109,20,'c2');  
insert into club_stats values(40,20,15,5,110,28,'c1');  
insert into club_stats values(36,16,5,15,88,32,'c5');  
insert into club_stats values(34,24,7,3,95,35,'c6');  
insert into club_stats values(38,18,13,7,76,18,'c4');  
insert into club_stats values(38,18,12,8,79,16,'c3');  
insert into club_stats values(36,26,2,8,98,15,'c7');
```

## Queries

- 1) List all the names of clubs and their respective league start date whose league name is Bundesliga.

```
select c.name, l.start_date from club as c, league as l
where l.name = 'Bundesliga' and c.league_id = l.league_id;
```

NAME	START_DATE
Bayern	08-Aug

- 2) List all the players whose salary is greater or equal to 5000.

```
select name from player where salary >= 5000;
```

NAME
Kevin
Sancho
Silva

- 3) Find club name with their club stats whose established date is 1874.

```
select c.name, cs.no_of_games, cs.win, cs.draw, cs.lose from club as c, club_stats as cs
where c.estd_date = '1874' and c.club_id = cs.club_id;
```

NAME	NO_OF_GAMES	WIN	DRAW	LOSE
RealMadrid	40	20	15	5

- 4) Find the stadium name and start and end time of match played in it whose location is Manchester.

```
select s.name, m1.start_time, m1.end_time from stadium as s, match1 as m1
where s.location = 'Manchester' and s.stadium_id = m1.stadium_id;
```

NAME	START_TIME	END_TIME
Etihad	7:00pm	8:45pm
Etihad	6:00pm	8:00pm
Etihad	1:00pm	3:00pm

- 5) Find the players name whose salary is equal to the salary of their respective manager.

```
select p.name from player as p
where p.club_id in (select m.club_id from manager as m where p.salary = m.salary);
```

NAME
Modric
Kevin
Ronaldo

- 6) For each club that has more than 3 players, retrieve the club\_id and the number of its players who are making more than 3000.

```
select club_id, count(*) from player
where salary >= 3000 and club_id in
(select club_id from player group by club_id having count(*) > 2)
group by club_id;
```

CLUB_ID	COUNT(*)
c4	3

- 7) List club name and its league name and start date where the number of teams in league is 20.

```
select c.name, l.name, l.start_date from club as c, league as l
where l.no_of_teams = 20 and c.league_id = l.league_id;
```

NAME	NAME	START_DATE
RealMadrid	Laliga	06-Aug
Arsenal	PL	06-Aug
Liverpool	PL	06-Aug
ManCity	PL	06-Aug
Juventus	SeriaA	16-Aug

- 8) Find the club name and their players who play in specific matches in leagues with league\_id equal to 'l2'.

```
select c.name, p.name, m.match_id, m.start_time, m.end_time, m.match_date
from player as p, league as l, match1 as m, club as c
where p.match_id = m.match_id and p.league_id = l.league_id
and m.league_id = l.league_id and l.league_id = 'l2' and c.league_id = l.league_id and
p.club_id=c.club_id;
```

## Football Club Management System

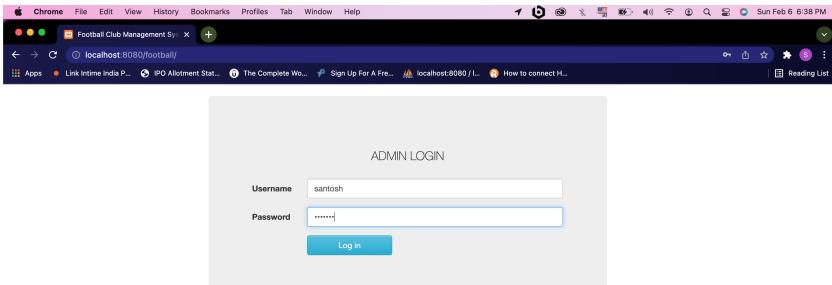
---

NAME	NAME	MATCH_ID	START_TIME	END_TIME	MATCH_DATE
Arsenal	Leno	m2	10:00am	11:45am	20-May
ManCity	Laporte	m5	7:00pm	8:45pm	02-Feb
ManCity	Kevin	m5	7:00pm	8:45pm	02-Feb
Arsenal	Xhakap	m10	6:00pm	8:00pm	08-Aug
Liverpool	Mane	m12	3:15pm	5:15pm	18-Sep
ManCity	Ederson	m15	1:00pm	3:00pm	18-Oct

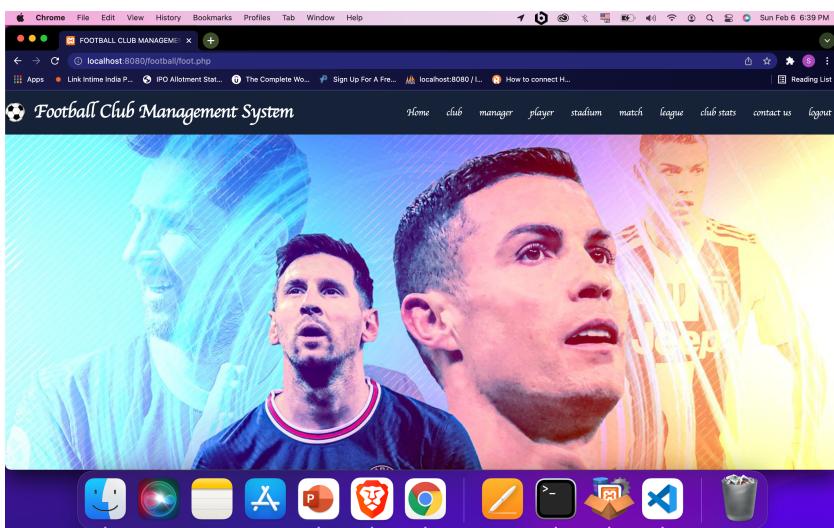
## Chapter 5

## Snapshots

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# Football Club Management System

## TABLES AND THEIR CONTENTS

**CLUB TABLE :**

club_id	name	owner	location	estdt_date	league_id	stadium_id
c7	Juventus	Mark	Rome	1875	l5	s7
c6	PSG	Rock	Paris	1884	l4	s6
c5	Bayern	John	Munich	1888	l3	s5
c4	ManCity	Sheikh	Manchester	1894	l2	s4
c3	Liverpool	Joe	Liverpool	1864	l2	s3
c2	Arsenal	Henry	London	1873	l2	s2
c100	club	daiii	katm	fasfasdff	l1	s1
c1	RealMadrid	James	Madrid	1874	l1	s1

**MANAGER TABLE :**

manager_id	name	salary	club_id
mg1	Zidane	3000	c1
mg2	Emery	4000	c2
mg3	Klopp	3000	c3
mg4	Pep	5000	c4
mg5	Kovac	6000	c5
mg6	Thomas	5000	c6
mg7	Sam	4000	c7

**PLAYER TABLE:**

player_id	name	nationality	age	salary	position	club_id	manager_id	match_id	league_id
p1	Modric	Czech	32	3000	Midfielder	c1	mg1	m1	l1
p100	sambhav gawali	nepal	19	100000	RB	c2	mg2	m4	l2
p1000	samp	nepali	23	1331313	mf	c1	mg2	m2	l2
p111	sangat subedi	pokhrel	20	30000	DMF	c2	mg1	m5	l3
p2	Kevin	Belgium	28	5000	Midfielder	c4	mg4	m5	l2
p3	Salah	Egypt	27	4000	Winger	c3	mg3	m8	l2
p4	Ronaldo	Portugal	33	4000	Striker	c7	mg7	m4	l4
p5	Sancho	England	20	5000	Winger	c5	mg5	m6	l3
p6	Silva	Brazil	32	5500	Defender	c6	mg6	m7	l4
p7	Leno	England	23	3000	Goalkeeper	c2	mg2	m2	
p8	Laporte	France	27	3500	Defender	c4	mg4	m5	

**STADIUM TABLE:**

stadium_id	name	location
s1	Santiago	Madrid
s100	anfield	liverpool
s2	Emirates	London
s3	Anfield	Liverpool
s4	Eithad	Manchester
s5	AllianzA	Munich
s6	Princes	Paris
s7	AllianzS	Turin

# Football Club Management System

## MATCH TABLE :

Match					
match_id	start_time	end_time	match_date	league_id	stadium_id
m1	9am	10am	16Aug	11	s1
m2	10:00am	11:45am	20-May	12	s2
m3	10:30am	12:15am	02-Dec	12	s3
m4	3:00pm	4:45pm	01-Jan	15	s7
m5	7:00pm	8:45pm	02-Feb	12	s4
m6	5:00pm	7:00pm	06-Dec	13	s5
m7	7:00am	9:00am	08-May	14	s6
m8	11:00am	1:00pm	03-May	13	s3

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## LEAGUE TABLE:

League					
league_id	country	name	start_date	end_date	no_of_teams
11	Spain	Laliga	06-Aug	04-May	20
12	England	PL	06-Aug	06-May	20
13	Germany	Bundesliga	08-Aug	06-May	18
14	France	leagu1	02-Aug	16-May	18
15	Italy	SeriaA	16-Aug	20-May	20

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## CLUBSTATS TABLE:

Clubstats						
no_of_games	win	draw	lose	goals_scored	goals conceded	club_id
40	20	15	5	110	28	c1
38	18	10	10	109	20	c2
38	18	12	8	79	16	c3
38	18	13	7	76	18	c4
36	16	5	15	88	32	c5
34	24	7	3	95	35	c6
36	26	2	8	98	15	c7

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## CONTACT TABLE:

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## Conclusion

The project “Football Club Management System” is for providing basic knowledge about management area of football. The software takes care of all the basic requirement of real-life club management system and is capable to provide easy and effective storage of information related to overall details to a normal user.

There is always a scope of betterment and the candidate system is not against this perception. At present the system satisfy to most of the functions of the system. This project is especially designed for football lovers to increase their knowledge about football managements.

The main purpose of this project is to provide the following advantages:

- i. Storing large amount of data for future point of view
- ii. Reducing manual efforts for maintaining the system
- iii. Reducing process time
- iv. Assures security and validity
- v. Provision for enhancement without disturbing the developed module

## Bibliography

### Books

- Fundamentals of Database System, 5<sup>th</sup> Edition by Ramez Elmasri and Shamkant B. Navathe
- Database System Concepts, 6<sup>th</sup> Edition by Silberschatz, Korth and Sudarshan

### Url

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