AMERICAN INTERNATIONALUNIVERSITY-BANGLADESH
Faculty of Science and Technology

Midterm Report

Course Title	: Advanced Database Management Systems [C]
Semester	: SPRING 21-22
Date of Submission : 21/03/2022	
Project Name	: Bangladesh Premier League (BPL) Management System
Course Teacher	: **REZWAN AHMED**

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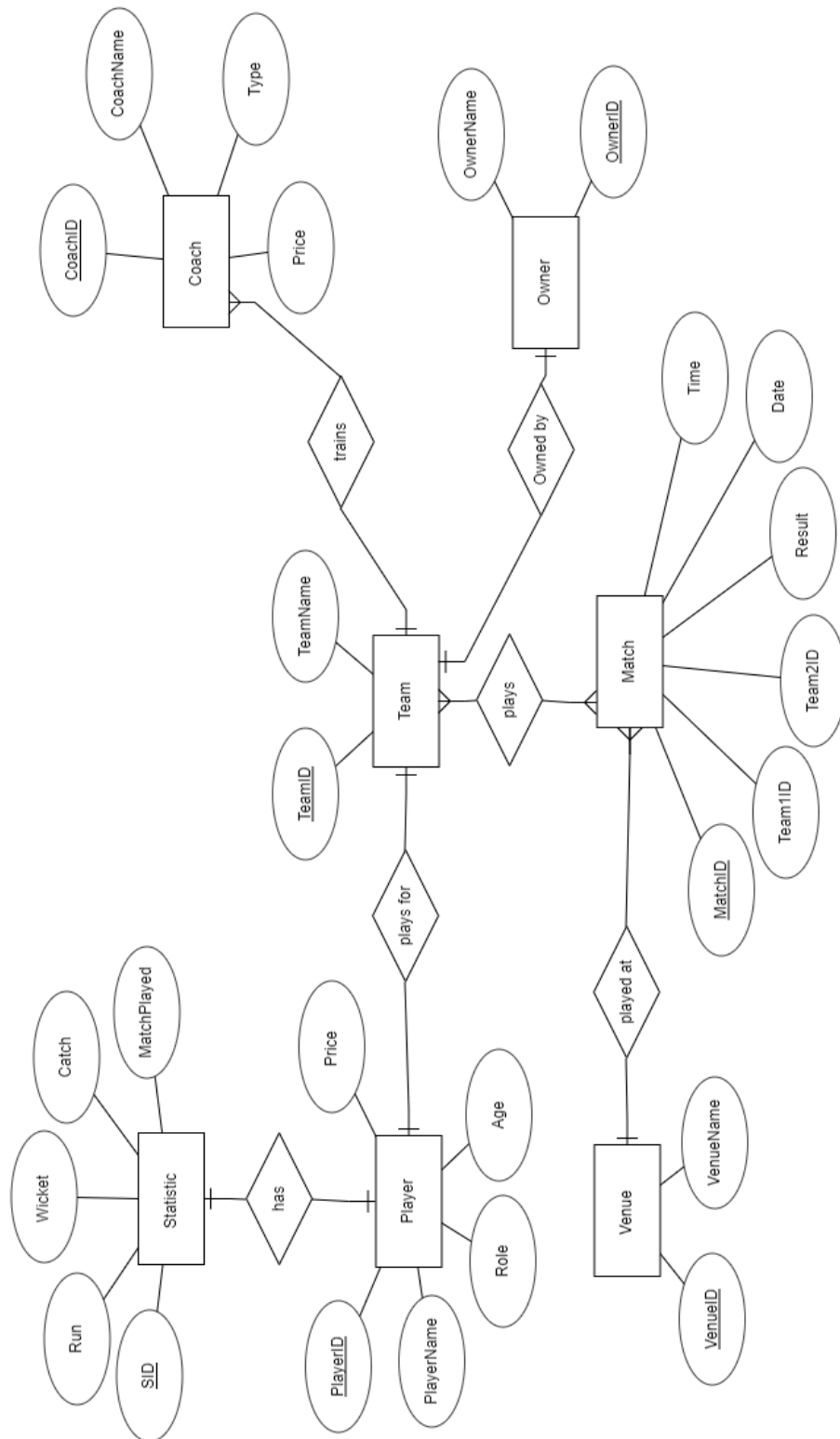| Student Name	ID	Program
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Content List

System Summary

The Bangladesh Premier League (BPL) is a professional Twenty20 cricket league consisting of six franchises. The BPL is one of the three professional cricket leagues in Bangladesh. It is the 16th most attended premier league in the world. In winter, each team face each other twice in the league stage. Following the conclusion of the regular season, top four teams advance to the playoffs, a single-elimination game and two qualifier games culminating in the Championship game, between the winner of Qualifier 1 and Qualifier 2.

Since it's a big tournament it is not easy to handle all data. To handle those large numbers of records efficiently we need to build a database management system so that we can access all those data easily. For that first we need to design ER diagram, Class diagram, Use case diagram & also Activity diagram. By those diagram we can find out the number of users such as players, franchise owners, coach etc. Then we can identify how many table we need to create, can identify which table contains which column, which column is the primary key of the table & also find out the relationship between the tables.After identifying those data we will create a database named BPL. In BPL database we will make our necessary tables. After that we will insert data into those table.
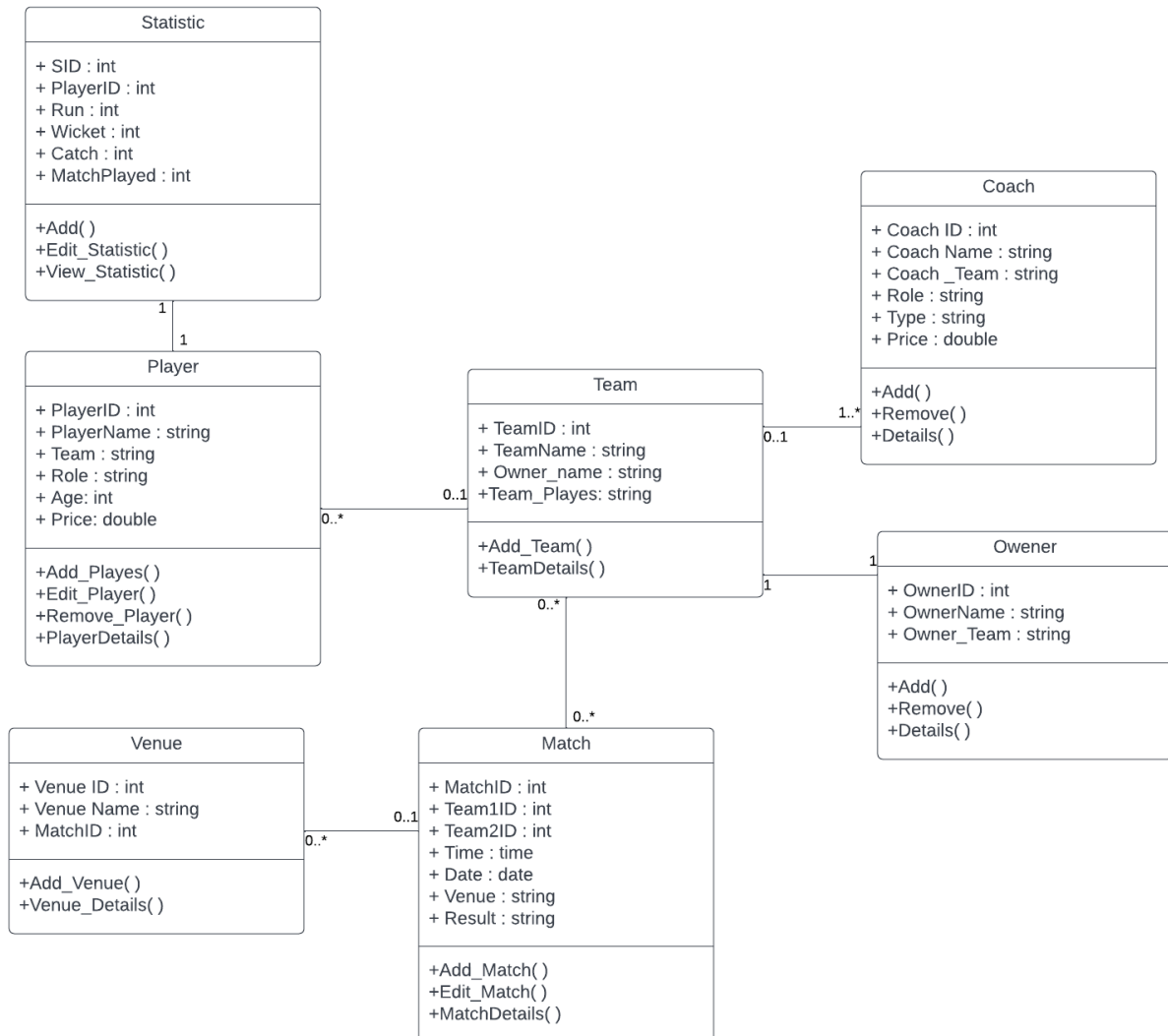
By creating this BPL Database Management system we will be able to find any data easily such as players details, team details, match schedule time, coach information, players statistics and many more.
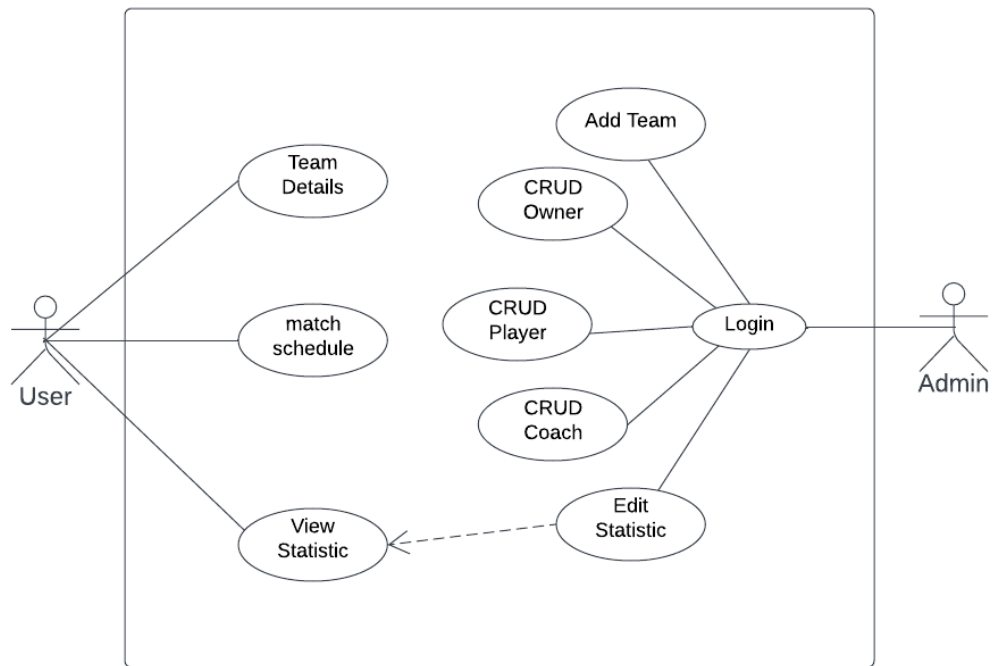
ERD diagram

BPL ER Diagram

Class diagram

Statistic

+ SID : int
+ PlayerID : int
+ Run : int
+ Wicket : int
+ Catch : int
+ MatchPlayed : int

+Add( )
+Edit_Statistic( )
+View_Statistic( )

1

1

Player

+ PlayerID : int
+ PlayerName : string
+ Team : string
+ Role : string
+ Age: int
+ Price: double

+Add_Playes( )
+Edit_Player( )
+Remove_Player( )
+PlayerDetails( )

0..*

Team

+ TeamID : int
+ TeamName : string
+ Owner_name : string
+Team_Playes: string

+Add_Team( )
+TeamDetails( )

0..1

0..1

1..*

0..1

Coach

+ Coach ID : int
+ Coach Name : string
+ Coach _Team : string
+ Role : string
+ Type : string
+ Price : double

+Add( )
+Remove( )
+Details( )

Owener

+ OwnerID : int
+ OwnerName : string
+ Owner_Team : string

+Add( )
+Remove( )
+Details( )

1

1

0..*

0..*

Venue

+ Venue ID : int
+ Venue Name : string
+ MatchID : int

+Add_Venue( )
+Venue_Details( )

0..1

0..*

Match

+ MatchID : int
+ Team1ID : int
+ Team2ID : int
+ Time : time
+ Date : date
+ Venue : string
+ Result : string

+Add_Match( )
+Edit_Match( )
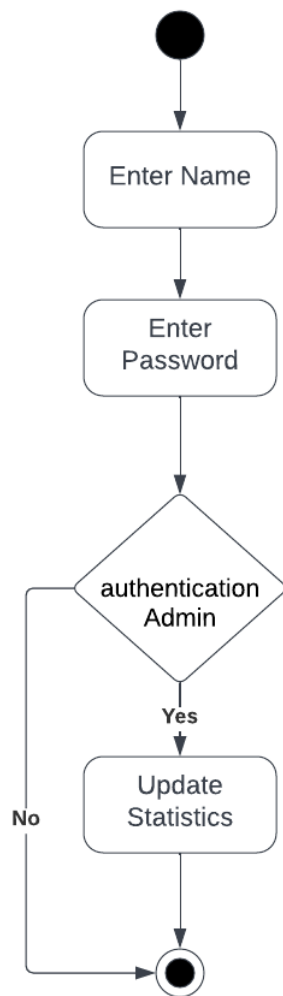+MatchDetails( )

Class diagram of BPL Management System

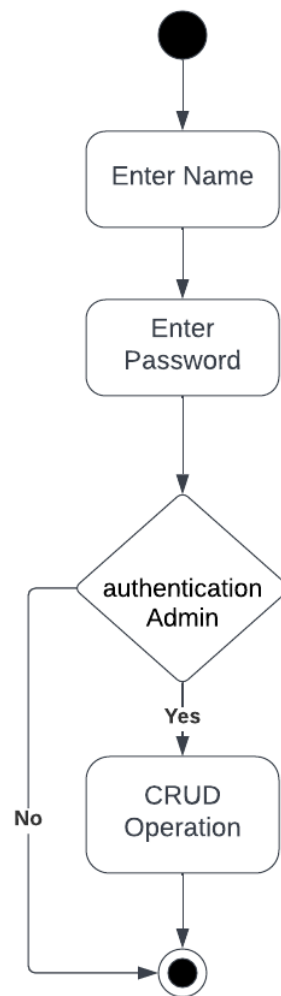# Use Case diagram

Use Case diagram of BPL Management System

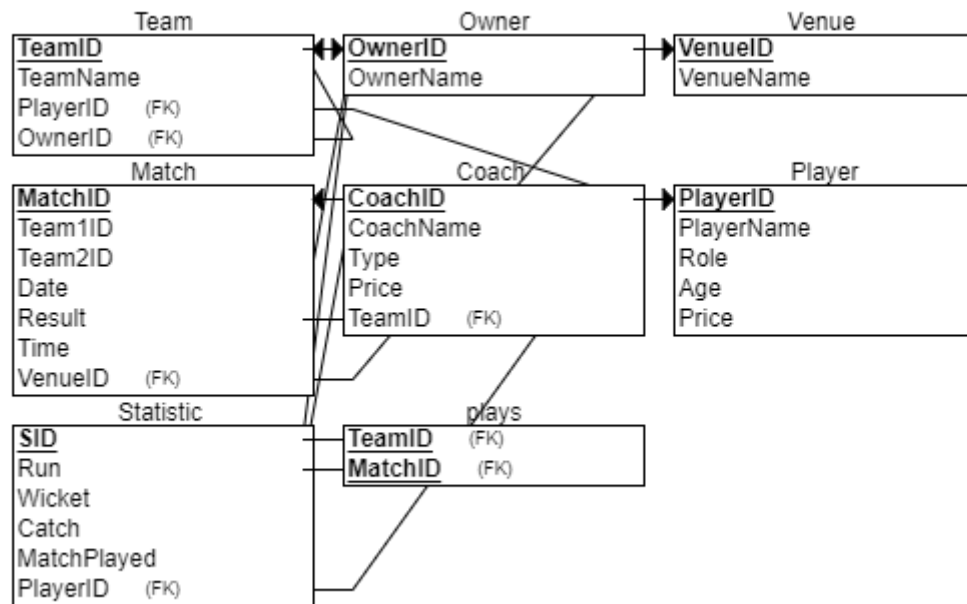# Activity diagram

Activity Diagram (Update Statistics)   Activity Diagram (CRUD Operation)

Database schema

Tables:

1. Team (<u>TeamID</u>, TeamName, OwnerID)

2. Owner (<u>OwnerID</u>, OwnerName, TeamID)

3. Player (<u>PlayerID</u>, PlayerName, Role, Age, Price, TeamID, SID)

4. Statistic (<u>SID</u>, Run, Wicket, Catch, MatchPlayed, PlayerID)

5. Coach (<u>CoachID</u>, CoachName, Type, Price, TeamID)

6. Match (<u>MatchID</u>, Team1ID, Team2ID, Result, Date, Time, VenueID)

7. Venue (<u>VenueID</u>, VenueName, MatchID)

8. Team_Players (TeamID, TeamName, <u>PlayerID</u>, PlayerName, Role, Age, Price)

Table creation:

CREATE   TABLE   **Team** (
TeamID   NUMBER (10) PRIMARY KEY,
TeamName   VARCHAR2 (30) ,
OwnerID   VARCHAR2 (30)
)

DESC Team

Object Type **TABLE** Object **TEAM**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TEAM	TEAMID	Number	-	10	0	1	-	-	-
	TEAMNAME	Varchar2	30	-	-	-	✔	-	-
	OWNERID	Varchar2	30	-	-	-	✔	-	-
									1 - 3

CREATE   TABLE   **Owner** (
OwnerID   NUMBER (10) PRIMARY KEY,
OwnerName   VARCHAR2 (30) ,
TeamID   NUMBER (10)
)

DESC Owner

Object Type **TABLE** Object **OWNER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OWNER	OWNERID	Number	-	10	0	1	-	-	-
	OWNERNAME	Varchar2	30	-	-	-	✔	-	-
	TEAMID	Number	-	10	0	-	✔	-	-
									1 - 3

CREATE   TABLE   **Player** (
PlayerID   NUMBER(10) PRIMARY KEY,
PlayerName   VARCHAR2 (30) ,
Role   VARCHAR2 (20),
Age NUMBER(3),
Price DOUBLE PRECISION,
TeamID NUMBER (10),
SID NUMBER (10)
)

DESC Player

Object Type **TABLE** Object **PLAYER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PLAYER	PLAYERID	Number	-	10	0	1	-	-	-
	PLAYERNAME	Varchar2	30	-	-	-	✓	-	-
	ROLE	Varchar2	20	-	-	-	✓	-	-
	AGE	Number	-	3	0	-	✓	-	-
	PRICE	Float	22	126	-	-	✓	-	-
	TEAMID	Number	-	10	0	-	✓	-	-
	SID	Number	-	10	0	-	✓	-	-
									1 - 7

CREATE   TABLE   **Statistic** (
SID   NUMBER(4) PRIMARY KEY,
Run NUMBER(6) ,
Wicket NUMBER(4),
Catch NUMBER(4),
MatchPlayed NUMBER(4),
PlayerID NUMBER(10)
)
DESC Statistic

Object Type **TABLE** Object **STATISTIC**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
STATISTIC	SID	Number	-	4	0	1	-	-	-
	RUN	Number	-	6	0	-	✓	-	-
	WICKET	Number	-	4	0	-	✓	-	-
	CATCH	Number	-	4	0	-	✓	-	-
	MATCHPLAYED	Number	-	4	0	-	✓	-	-
	PLAYERID	Number	-	10	0	-	✓	-	-
									1 - 6

CREATE   TABLE   **Coach** (
CoachID   NUMBER(10) PRIMARY KEY,
CoachName   VARCHAR2 (30) ,
Type   VARCHAR2 (30),
Price DOUBLE PRECISION,
TeamID NUMBER (10)
)

DESC Coach

Object Type **TABLE** Object **COACH**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
COACH	COACHID	Number	-	10	0	1	-	-	-
	COACHNAME	Varchar2	30	-	-	-	✓	-	-
	TYPE	Varchar2	30	-	-	-	✓	-	-
	PRICE	Float	22	126	-	-	✓	-	-
	TEAMID	Number	-	10	0	-	✓	-	-
									1 - 5

CREATE TABLE **Match** (
MatchID NUMBER(10) PRIMARY KEY,
Team1ID NUMBER (10),
Team2ID NUMBER (10),
Match_date DATE NOT NULL,
TIME VARCHAR2 (30),
VenueID NUMBER(10)
)

DESC Match

Object Type **TABLE** Object **MATCH**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
MATCH	MATCHID	Number	-	10	0	1	-	-	-
	TEAM1ID	Number	-	10	0	-	✓	-	-
	TEAM2ID	Number	-	10	0	-	✓	-	-
	MATCH_DATE	Date	7	-	-	-	-	-	-
	TIME	Varchar2	30	-	-	-	✓	-	-
	VENUEID	Number	-	10	0	-	✓	-	-
									1 - 6

CREATE TABLE **Venue** (
VenueID NUMBER (10) PRIMARY KEY,
VenueName VARCHAR2 (30)
)

DESC Venue

Object Type **TABLE** **Object** **VENUE**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
VENUE	VENUEID	Number	-	10	0	1	-	-	-
	VENUENAME	Varchar2	30	-	-	-	✓	-	-
									1 - 2

CREATE   TABLE   Team_Players (
TeamID   NUMBER (10),
TeamName   VARCHAR2 (30) ,
PlayerID   NUMBER(10) PRIMARY KEY,
PlayerName   VARCHAR2 (30) ,
Role   VARCHAR2 (20),
Price DOUBLE PRECISION,
Age NUMBER(3)
)

DESC Team_Players

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TEAM_PLAYERS	TEAMID	Number	-	10	0	-	✓	-	-
	TEAMNAME	Varchar2	30	-	-	-	✓	-	-
	PLAYERID	Number	-	10	0	1	-	-	-
	PLAYERNAME	Varchar2	30	-	-	-	✓	-	-
	ROLE	Varchar2	20	-	-	-	✓	-	-
	PRICE	Float	22	126	-	-	✓	-	-
	AGE	Number	-	3	0	-	✓	-	-
									1 - 7

CREATE   TABLE   Admin(
Name   VARCHAR2 (10) PRIMARY KEY,
Password VARCHAR2 (30)
)

DESC Admin

Object Type **TABLE** **Object** **ADMIN**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ADMIN	NAME	Varchar2	10	-	-	1	-	-	-
	PASSWORD	Varchar2	30	-	-	-	✓	-	-
									1 - 2

Data Insertion

Data Insert into Team Table:

    INSERT INTO Team VALUES (101,'Dhaka','MR. A');
    INSERT INTO Team VALUES (102,'Khulna','MR. B');
    INSERT INTO Team VALUES (103,'Sylhet','MR. C');
    INSERT INTO Team VALUES (104,'Chattogram','MR. X');
    INSERT INTO Team VALUES (105,'Comilla','MR. Y');
    INSERT INTO Team VALUES (106,'Barisal','MR. Z');

TEAMID	TEAMNAME	OWNERID
101	Dhaka	MR. A
102	Khulna	MR. B
103	Sylhet	MR. C
104	Chattogram	MR. X
105	Comilla	MR. Y
106	Barisal	MR. Z

Data Insert into Owner Table:

    INSERT INTO Owner VALUES (201,'MR. A',101);
    INSERT INTO Owner VALUES (202,'MR. B',102);
    INSERT INTO Owner VALUES (203,'MR. C',103);
    INSERT INTO Owner VALUES (204,'MR. X',104);
    INSERT INTO Owner VALUES (205,'MR. Y',105);
    INSERT INTO Owner VALUES (206,'MR. Z',106);

OWNERID	OWNERNAME	TEAMID
201	MR. A	101
202	MR. B	102
203	MR. C	103
204	MR. X	104
205	MR. Y	105
206	MR. Z	106

Data Insert into Venue Table:

    INSERT INTO Venue VALUES (101,'Shere Bangla National Stadium');
    INSERT INTO Venue VALUES (102,'Zohur Ahmed Chowdhury Stadium');
    INSERT INTO Venue VALUES (103,'Sylhet International Stadium');

VENUEID	VENUENAME
101	Shere Bangla National Stadium
102	Zohur Ahmed Chowdhury Stadium
103	Sylhet International Stadium

Data Insert into Coach Table:

        INSERT INTO Coach VALUES (101,'Paul Nixon','Head Coach',500000,104);
        INSERT INTO Coach VALUES (102,'Ottis Gibson','Head Coach',510000,105);
        INSERT INTO Coach VALUES (103,'Mohammad Salahuddin','Head Coach',510000,101);
        INSERT INTO Coach VALUES (104,'James Foster','Head Coach',520000,102);
        INSERT INTO Coach VALUES (105,'Owais Shah','Head Coach',500000,103);
        INSERT INTO Coach VALUES (106,'Grant Flower','Head Coach',520000,106);

COACHID	COACHNAME	TYPE	PRICE	TEAMID
101	Paul Nixon	Head Coach	500000	104
102	Ottis Gibson	Head Coach	510000	105
103	Mohammad Salahuddin	Head Coach	510000	101
104	James Foster	Head Coach	520000	102
105	Owais Shah	Head Coach	500000	103
106	Grant Flower	Head Coach	520000	106

Data Insert into Player Table:

        INSERT INTO Player VALUES (101,'Mahmudullah', 'Allrounder', 35, 500000, 101, 101);
        INSERT INTO Player VALUES (102,'Isuru Udana', 'Bowler', 30, 200000, 101, 102);
        INSERT INTO Player VALUES (103,'Najibullah Zadran', 'Batsman', 25, 200000, 101, 103);
        INSERT INTO Player VALUES (104,'Tamim Iqbal', 'Batsman', 35, 500000, 101, 104);
        INSERT INTO Player VALUES (105,'Rubel Hossain', 'Bowler', 30, 300000, 101, 105);
        INSERT INTO Player VALUES (106,'Mashrafe Mortaza', 'Bowler', 35, 500000, 101, 106);
        INSERT INTO Player VALUES (107,'Shuvagata Hom', 'Allrounder', 30, 200000, 101, 107);
        INSERT INTO Player VALUES (108,'Mohammad Shahzad', 'wicket keeper', 31, 300000, 101, 108);

PLAYERID	PLAYERNAME	ROLE	AGE	PRICE	TEAMID	SID
101	Mahmudullah	Allrounder	35	500000	101	101
102	Isuru Udana	Bowler	30	200000	101	102
103	Najibullah Zadran	Batsman	25	200000	101	103
104	Tamim Iqbal	Batsman	35	500000	101	104
105	Rubel Hossain	Bowler	30	300000	101	105
106	Mashrafe Mortaza	Bowler	35	500000	101	106
107	Shuvagata Hom	Allrounder	30	200000	101	107
108	Mohammad Shahzad	wicket keeper	31	300000	101	108
109	Fazalhaq Farooqi	Allrounder	26	200000	101	109
110	Mohammad Naim	Batsman	25	200000	101	110
More than 10 rows available. Increase rows selector to view more rows.						

Data Insert into Match Table:

```
INSERT INTO Match VALUES (1,104,106,'21-Jan-22','1:30 pm',101);
INSERT INTO Match VALUES (2,102,101,'21-Jan-22','6:30 pm',101);
INSERT INTO Match VALUES (3,105,103,'22-Jan-22','1:30 pm',101);
INSERT INTO Match VALUES (4,104,101,'22-Jan-22','6:30 pm',101);
INSERT INTO Match VALUES (5,106,101,'24-Jan-22','1:30 pm',101);
INSERT INTO Match VALUES (6,104,102,'24-Jan-22','6:30 pm',101);
```

MATCHID	TEAM1ID	TEAM2ID	MATCH_DATE	TIME	VENUEID
1	104	106	21-JAN-22	1:30 pm	101
2	102	101	21-JAN-22	6:30 pm	101
3	105	103	22-JAN-22	1:30 pm	101
4	104	101	22-JAN-22	6:30 pm	101
5	106	101	24-JAN-22	1:30 pm	101
6	104	102	24-JAN-22	6:30 pm	101
7	103	101	25-JAN-22	1:30 pm	101
8	105	106	25-JAN-22	6:30 pm	101
9	104	102	28-JAN-22	1:30 pm	102
10	103	101	28-JAN-22	6:30 pm	102

More than 10 rows available. Increase rows selector to view more rows.

Data Insert into Team_Players:

INSERT INTO Team_Players VALUES (101,'Dhaka',101,'Mahmudullah', 'Allrounder',500000, 35);
INSERT INTO Team_Players VALUES (101,'Dhaka',102,'Isuru Udana', 'Bowler',200000, 30);
INSERT INTO Team_Players VALUES (101,'Dhaka',103,'Najibullah Zadran', 'Batsman',200000,25);
INSERT INTO Team_Players VALUES (101,'Dhaka',104,'Tamim Iqbal', 'Batsman',500000,35);
INSERT INTO Team_Players VALUES (101,'Dhaka',105,'Rubel Hossain', 'Bowler',300000,30);
INSERT INTO Team_Players VALUES (101,'Dhaka',106,'Mashrafe Mortaza', 'Bowler',500000,35);

TEAMID	TEAMNAME	PLAYERID	PLAYERNAME	ROLE	PRICE	AGE
101	Dhaka	101	Mahmudullah	Allrounder	500000	35
101	Dhaka	102	Isuru Udana	Bowler	200000	30
101	Dhaka	103	Najibullah Zadran	Batsman	200000	25
101	Dhaka	104	Tamim Iqbal	Batsman	500000	35
101	Dhaka	105	Rubel Hossain	Bowler	300000	30
101	Dhaka	106	Mashrafe Mortaza	Bowler	500000	35

Data Insert into Statistic:

        INSERT INTO Statistic VALUES (601, 404, 23, 7, 11, 601)
        INSERT INTO Statistic VALUES (104, 445,'', 9, 10, 104)
        INSERT INTO Statistic VALUES (504, 23,27, 4, 12, 504)
        INSERT INTO Statistic VALUES (301, 325,'', 11, 10, 301)
        INSERT INTO Statistic VALUES (406, 218,3, 5, 11, 406)

SID	RUN	WICKET	CATCH	MATCHPLAYED	PLAYERID
601	404	23	7	11	601
104	445	-	9	10	104
504	23	27	4	12	504
301	325	-	11	10	301
406	218	3	5	11	406

Data Insert into Admin:

        INSERT INTO Admin VALUES ('Admin','admin')

NAME	PASSWORD
Admin	admin

Query writing

1. Find out the details of the highest run taker .

    select Player.*,run from Player, Statistic where Player.PlayerID=Statistic.PlayerID and run = (select max(run) from Statistic)

PLAYERID	PLAYERNAME	ROLE	AGE	PRICE	TEAMID	SID	RUN
104	Tamim Iqbal	Batsman	35	500000	101	104	445

2. Find out highest paid cricketer

    Select * from player where price = (select max(price) from player)

PLAYERID	PLAYERNAME	ROLE	AGE	PRICE	TEAMID	SID
101	Mahmudullah	Allrounder	35	500000	101	101
104	Tamim Iqbal	Batsman	35	500000	101	104
106	Mashrafe Mortaza	Bowler	35	500000	101	106
504	Mustafizur Rahman	Bowler	27	500000	105	504
601	Shakib Al Hasan	Allrounder	31	500000	106	601
201	Mushfiqur Rahim	wicket keeper	33	500000	102	201

3. Find out the list of how much does every team pay to the players?

    select teamID, sum(price) from Player group by teamID

TEAMID	SUM(PRICE)
102	3150000
101	4700000
104	3700000
105	4000000
103	3500000
106	3750000

4. Find out the team details which pays the most salary

    select * from team where teamID = (select teamID from Player group by teamID having sum(price) = (select max(sum(price)) from Player group by teamID))

TEAMID	TEAMNAME	OWNERID
101	Dhaka	MR. A

5. Find out the list of batsman from Dhaka team

select * from player where role='Batsman' and teamID=(select teamID from team where teamName = 'Dhaka')

PLAYERID	PLAYERNAME	ROLE	AGE	PRICE	TEAMID	SID
103	Najibullah Zadran	Batsman	25	200000	101	103
104	Tamim Iqbal	Batsman	35	500000	101	104
110	Mohammad Naim	Batsman	25	200000	101	110
113	Jahurul Islam	Batsman	29	200000	101	113
114	Shamsur Rahman	Batsman	27	200000	101	114

6. How many matches will be held in each venue?

select venueID, count(matchID) from Match group by venueID order by venueID

VENUEID	COUNT(MATCHID)
101	20
102	8
103	6

7. In which venue will have the most matches?

select * from venue where venueID = (select venueID from Match group by venueID having count(MatchID)=(select max(count(matchID)) from Match group by venueID))

VENUEID	VENUENAME
101	Shere Bangla National Stadium

8. Find out Dhaka team match schedule.

select * from Match where team1ID=(select teamID from team where teamname='Dhaka') or team2ID=(select teamID from team where teamname='Dhaka') order by matchID

MATCHID	TEAM1ID	TEAM2ID	MATCH_DATE	TIME	VENUEID
2	102	101	21-JAN-22	6:30 pm	101
4	104	101	22-JAN-22	6:30 pm	101
5	106	101	24-JAN-22	1:30 pm	101
7	103	101	25-JAN-22	1:30 pm	101
10	103	101	28-JAN-22	6:30 pm	102
15	105	101	01-FEB-22	1:30 pm	102
20	105	101	04-FEB-22	6:30 pm	101
23	104	101	08-FEB-22	1:30 pm	103
25	102	101	09-FEB-22	1:30 pm	103
28	106	101	11-FEB-22	6:30 pm	101

More than 10 rows available. Increase rows selector to view more rows.

9. Find out the wicket keeper list from every team

select * from player where role='wicket keeper' order by playerID

PLAYERID	PLAYERNAME	ROLE	AGE	PRICE	TEAMID	SID
108	Mohammad Shahzad	wicket keeper	31	300000	101	108
201	Mushfiqur Rahim	wicket keeper	33	500000	102	201
301	Anamul Haque	wicket keeper	28	300000	103	301
413	Akbar Ali	wicket keeper	23	200000	104	413
505	Liton Das	wicket keeper	26	350000	105	505
604	Nurul Hasan	wicket keeper	26	250000	106	604

10. Who is the head coach of Dhaka them?

select * from coach where type='Head Coach' and teamID= (select teamID from team where teamname='Dhaka')

COACHID	COACHNAME	TYPE	PRICE	TEAMID
103	Mohammad Salahuddin	Head Coach	510000	101

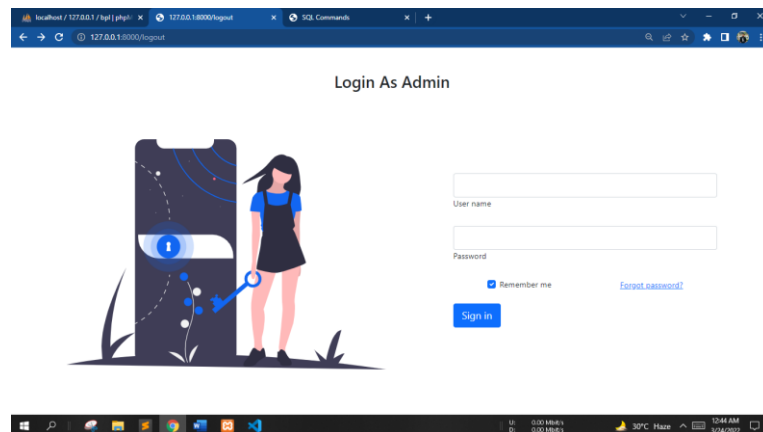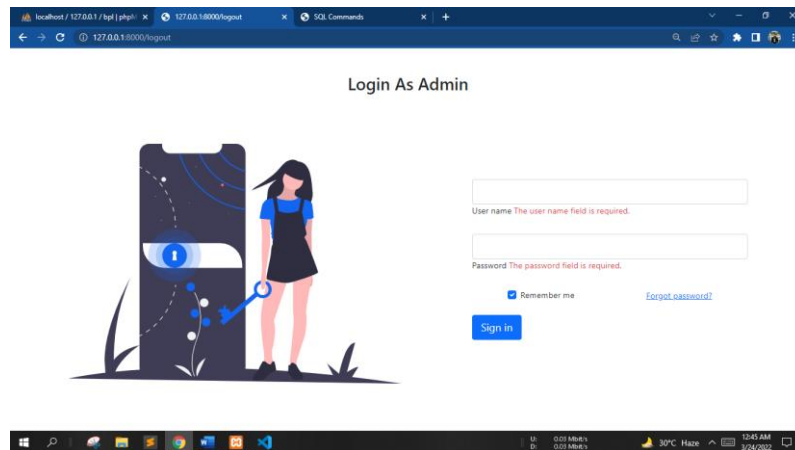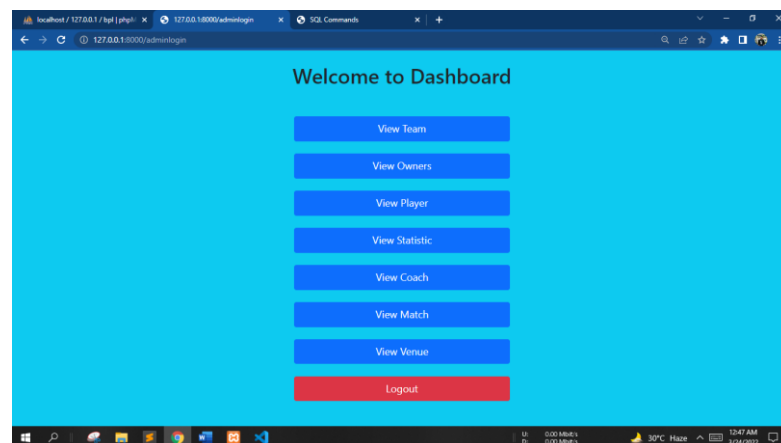# User Interface & Authentication check

Figure: Admin Login Page

Figure: Admin page validation

Figure: After successfully Login