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School of Information Technology and Engineering

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TOPIC: HOCKEY TOURNAMENT

COURSE CODE	ITE1003
COURSE NAME	DATABASE MANAGEMENT SYSTEMS
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Abstract:

This project is based on database management of Hockey Tournament, in which all the major countries participate. Various types of information of the teams participating in the tournament is provided. Information about the players that part of the teams is also provided. The database contains details of players, coaches and umpires amongst others. Any relevant information regarding the tournament can be found here.

Data Requirements:

Entities:

1) Team is an entity type which has many attributes like Team Name which uses the data type varchar. Every team has been given a Team ID which is the primary key and of data type varchar. Team Ranking is of the data type number. There is a composite attribute as well – Record which further consists of three attributes – No. of wins, loss and draws which accepts number data type. Team id cannot have null value as it is the primary key.

2) Players is an entity type which has an attribute – Player Name which is of the data type varchar. It has a primary key, Player ID, which cannot have null value. It has further specialised into 2 categories, Goalie and Field_Player. Goalie has attribute number of goals saved which is of type number and Field_Player has attributes position, type varchar, and number of goals scored which is of type number.

3) Umpire is an entity type which has the attributes name and country of origin of data type varchar. The primary key of this is Umpire Id which is of varchar data type. It also has an attribute Number of matches of data type number.

4) Coach is an entity type with attribute name of data type varchar. It has a primary key, Coach ID, of data type varchar.

5) Captain is an entity type with a primary key, Captain ID and attribute name of data type varchar. Number of years of captaincy and Number of wins are also attributes of this table of data type number.

6) Game is an entity type with a primary key, Game_ID, of varchar data type. It has attributes like Team1 Name, Team2 Name, venue, Winner Team and Loser Team of data type varchar. Game date is an attribute which uses the datatype date. Game time is an attribute which is of the data type time.

Relationships:

Team has Players (1-N)

A player can play in only one team but a team can have many players in it. So, the relationship becomes (N-1). A team must have players in it so it is a mandatory relationship from team side.

Team is coached by coaches (1-N)

Coach can manage a single team, but each team can have many coaches. So, the relationship is (1-N). But it is compulsory for a team to have a coach and also a coach needs to have a team. So, it is a mandatory relationship from both sides.

Team plays game(M-N)

Team can play many games and a game can be played by two teams. So, the relationship is M-N.

Games are umpired by Umpire(M-N)

Multiple umpires can umpire in many matches. So, the relationship is M-N. Also, a game will mandatorily have umpire so it is a mandatory relationship from game side.

Team headed by a Captain (1-1)

A team has 1 captain and a captain is from single team only. So, the relationship is 1-1. Also, both are mandatory so it is mandatory participation from both sides.

Referential Integrity Constraints:

Umpire_id in Umpire references Umpire_id in Game

Team_id in Team references Team_id in Game, Coach, Captain and Players.

Player_id in Players references Player_id in Captain

Functional Requirements:

USER:

Users can login by entering the correct login id and password. They should be able to see the player details of each player in the database. They should be able to see the scores of each match. The date and time for each match should be displayed on the login when asked.

System should display the complete roster of a team including the captain and the players playing in the top 11 and the current rank of the team. The details of the coach as well as the umpire or referee should also be available to the users. The statistics of each player should also be available like total goals, number of saves, number of assists, number of matches played etc.

Basic Analogy:

1. View all teams.
2. View all players of a team.
3. View all field players in the tournament.
4. View the goalkeepers in the tournament.
5. View all tournament reports in a season.
6. View statistics of each player.
7. View coach details.
8. View referee details.
9. View tournament details.
10. View ranking of each team

Player information:

- Number of matches
- Total goals
- Total saves

Game details:

- Host team
- Guest team
- Umpire
- Venue
- Date & Time
- Winner
- Loser
- Team rank

ADMINISTRATOR:

Administrator is in charge of creating the website which is used to access the database. Administrator has the authority to add and remove data from the database which the user cannot do.

Administrator is responsible for creating different user accounts and assigning the id and password. They should be allowed to enter the team name of home and away teams. He should have the authority to enter and modify the match details like time and venue in case the need to be changed.

Basic Analogy:

1. Generate login ID for viewer.
2. Display different menus.
3. CreateTournament.
4. Display Team Name.

5. Display Team Captain.

6. Display playing eleven

Player information after every match:

a) Number of matches

b) Total goals

c) Total saves

Removal of old data:

- Data of injured player who will not be able to play should be removed.
- Data of disqualified team should be removed
- If any match gets cancelled due to unforeseen circumstances, then details of said match should be removed.
- If a team is eliminated then their information can also be removed from the database.

Modification of data:

- After a match the existing ranks of every team should be modified according to the new scores.
- Statistics of each player should be updated after a match.
- Incase of delay, the match timings should be updated.

Retrieval of data:

i) Team information:

Before the start of a new match, we have to retrieve the Team record like:

a) Team name

b) Goalkeeper

c) Field players

d) Number of wins

e) Number of losses

f) Number of draws

ii) Match information:

After every match, we have to retrieve the Match details like:

a) Host team

b) Guest Team

c) Umpires

d) Winner

e) Loser

iii) Score Board:

a) Team rank

b) Team name

Ranking of teams to be retrieved after each match.

iv) Team captain:

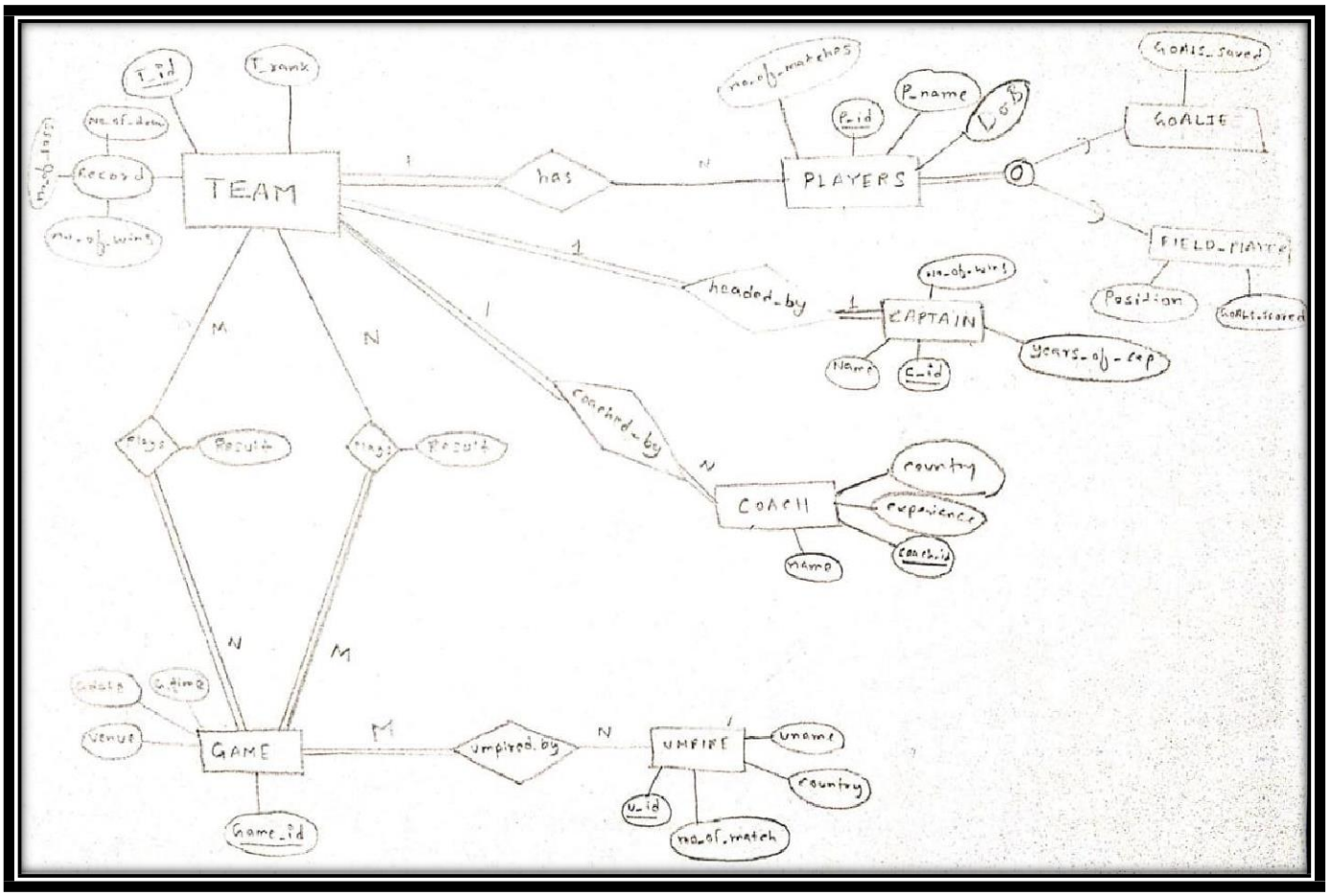
a) Name of captain

b) Number of wins under his captaincy

c) Years of captaincy

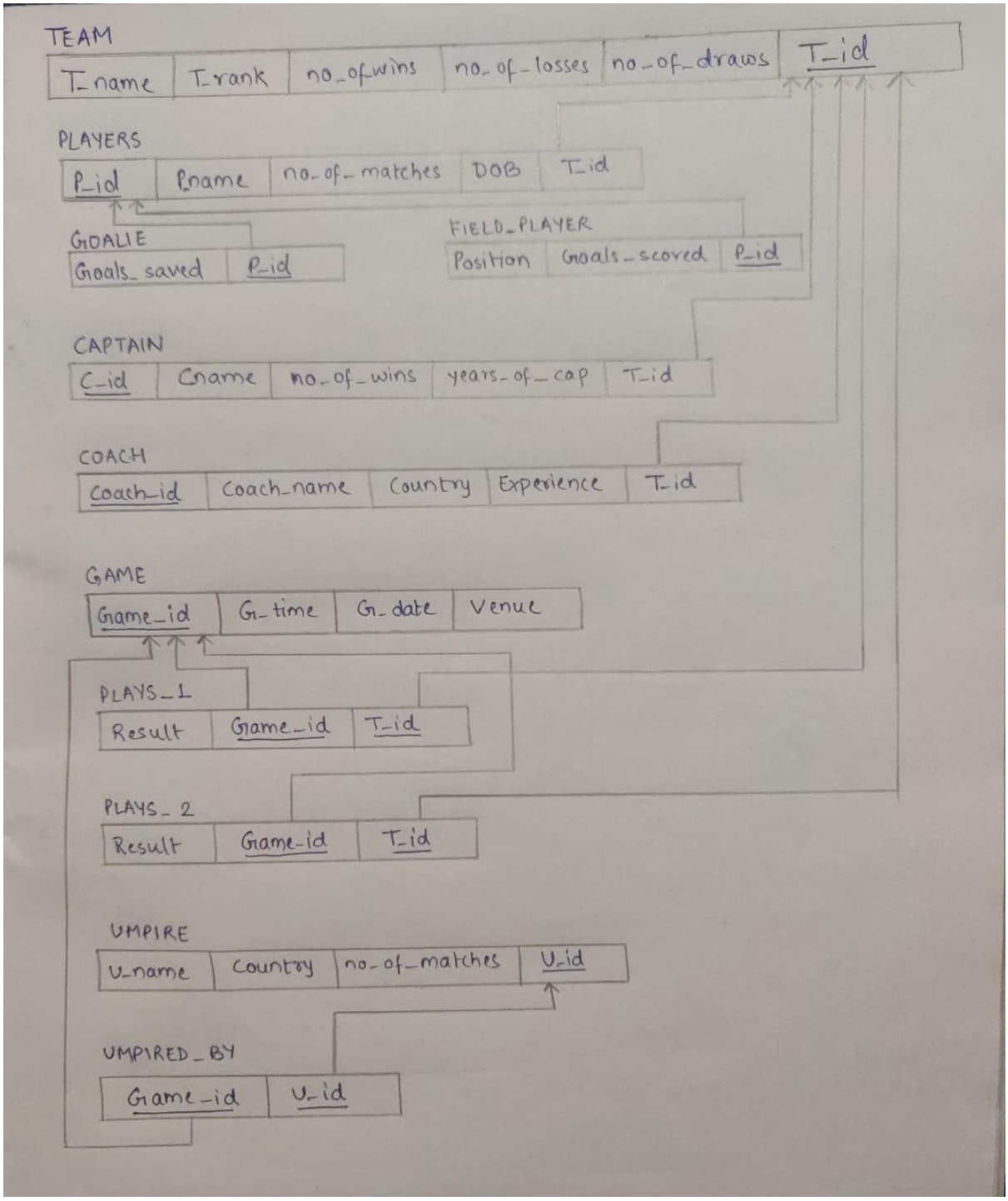
Data of captain is retrieved when going for the toss.

EER MODEL along with key constraints, participation constraints and cardinality constraints:



4. Convert the ER/EER diagram into a relational database schema diagram.

Relational Database Schema Diagram:



5. Implement the relational database schema incorporating appropriate (based on data requirements) integrity constraints and enter necessary sample data into the tables. Each integrity constraint should be assigned a name.

Table Creation

TABLES

- Team
- Player
- Goalie
- Field_players
- Captain
- Coach
- Games
- Plays1
- Plays2
- Umpire
- Umpired_By

Table Team

```
create table team(
t_id varchar(10) constraints t_pk primary key,
t_name varchar(20) not null,
t_rank number(3),
no_of_wins number(5),
no_of_losses number(5),
no_of_draws number(3));
```

```
SQL> create table team(
  2  t_id varchar(10) constraints t_pk primary key,
  3  t_name varchar(20) not null,
  4  t_rank number(3),
  5  no_of_wins number(5),
  6  no_of_losses number(5),
  7  no_of_draws number(3));

Table created.

SQL> desc team;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 T_ID                                      NOT NULL VARCHAR2(10)
 T_NAME                                    NOT NULL VARCHAR2(20)
 T_RANK                                             NUMBER(3)
 NO_OF_WINS                                         NUMBER(5)
 NO_OF_LOSSES                                       NUMBER(5)
 NO_OF_DRAWS                                        NUMBER(3)
```

Table Players

```
create table players(
p_id varchar(10) constraints p_pk primary key,
p_name varchar(30) not null,
no_of_matches number(5),
dob date,
t_id references team(t_id));
```

```
SQL> create table players(
  2  p_id varchar(10) constraints p_pk primary key,
  3  p_name varchar(30) not null,
  4  no_of_matches number(5),
  5  dob date,
  6  t_id references team(t_id));

Table created.

SQL> desc players;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 P_ID                                      NOT NULL VARCHAR2(10)
 P_NAME                                    NOT NULL VARCHAR2(30)
 NO_OF_MATCHES                                      NUMBER(5)
 DOB                                                DATE
 T_ID                                               VARCHAR2(10)
```

Table Goalie

create table goalie(
goals_saved number(5),
p_id references players(p_id),
primary key(p_id));

```
SQL> create table goalie(
  2  goals_saved number(5),
  3  p_id references players(p_id));

Table created.

SQL> desc goalie;
 Name                                       Null?    Type
 ----------------------------------------- -------- ----------------------------
 GOALS_SAVED                                        NUMBER(5)
 P_ID                                               VARCHAR2(10)
```

Table field_Players

create table field_player(
goals_scored number(5),
position varchar(20),
p_id references players(p_id),
primary key(p_id));

```
SQL> create table field_player(
  2  goals_scored number(5),
  3  position varchar(20),
  4  p_id references players(p_id));

Table created.

SQL> desc field_player;
 Name                                       Null?    Type
 ----------------------------------------- -------- ----------------------------
 GOALS_SCORED                                       NUMBER(5)
 POSITION                                           VARCHAR2(20)
 P_ID                                               VARCHAR2(10)
```

Table Captain

```
create table captain(
c_id varchar(20) constraints c_pk primary key,
c_name varchar(30) not null,
no_of_wins number(3),
years_captain number(2),
t_id references team(t_id));
```

```
SQL> create table captain(
  2  c_id varchar(20) constraints c_pk primary key,
  3  c_name varchar(30) not null,
  4  no_of_wins number(3),
  5  years_captain number(2),
  6  t_id references team(t_id));

Table created.

SQL> desc captain;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 C_ID                                      NOT NULL VARCHAR2(20)
 C_NAME                                    NOT NULL VARCHAR2(30)
 NO_OF_WINS                                         NUMBER(3)
 YEARS_CAPTAIN                                      NUMBER(2)
 T_ID                                               VARCHAR2(10)
```

Table Coach

```
create table coach(
coach_id varchar(10) constraints coach_pk primary key,
coach_name varchar(30) not null,
country varchar(30),
exp number(2),
t_id references team(t_id));
```

```
SQL> create table coach(
  2  coach_id varchar(10) constraints coach_pk primary key,
  3  coach_name varchar(30) not null,
  4  country varchar(30),
  5  exp number(2),
  6  t_id references team(t_id));

Table created.

SQL> desc coach;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 COACH_ID                                  NOT NULL VARCHAR2(10)
 COACH_NAME                                NOT NULL VARCHAR2(30)
 COUNTRY                                            VARCHAR2(30)
 EXP                                                NUMBER(2)
 T_ID                                               VARCHAR2(10)
```

Table Game

```
create table game(
g_id varchar(10) constraints g_pk primary key,
```

g_time timestamp(0),
g_date date,
venue varchar(30));

```
SQL> create table game(
  2  g_id varchar(10) constraints g_pk primary key,
  3  g_time timestamp(0),
  4  g_date date,
  5  venue varchar(30));

Table created.

SQL> desc game;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 G_ID                                      NOT NULL VARCHAR2(10)
 G_TIME                                             TIMESTAMP(0)
 G_DATE                                             DATE
 VENUE                                              VARCHAR2(30)
```

Table Plays1
create table plays1(
result varchar(20),
g_id references game(g_id),
t_id references team(t_id),
primary key(g_id,t_id));

```
SQL> create table plays1(
  2  result varchar(20),
  3  g_id references game(g_id),
  4  t_id references team(t_id));

Table created.

SQL> desc plays1;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 RESULT                                             VARCHAR2(20)
 G_ID                                               VARCHAR2(10)
 T_ID                                               VARCHAR2(10)
```

Table Plays2
create table plays2(
result varchar(20),
g_id references game(g_id),
t_id references team(t_id),
primary key(g_id,t_id));

```
SQL> create table plays2(
  2  result varchar(20),
  3  g_id references game(g_id),
  4  t_id references team(t_id));

Table created.

SQL> desc plays2;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 RESULT                                             VARCHAR2(20)
 G_ID                                               VARCHAR2(10)
 T_ID                                               VARCHAR2(10)
```

Table Umpire

create table umpire(
u_id varchar(10) constraints u_pk primary key,
uname varchar(30) not null,
country varchar(30),
no_of_matches number(3));

```
SQL> create table umpire(
  2  u_id varchar(10) constraints u_pk primary key,
  3  uname varchar(30) not null,
  4  country varchar(30),
  5  no_of_matches number(3));

Table created.

SQL> desc umpire;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 U_ID                                      NOT NULL VARCHAR2(10)
 UNAME                                     NOT NULL VARCHAR2(30)
 COUNTRY                                            VARCHAR2(30)
 NO_OF_MATCHES                                      NUMBER(3)
```

Table Umpired_By

create table umpired_by(
g_id references game(g_id),
u_id references umpire(u_id),
primary key(g_id,u_id));

```
SQL> create table umpired_by(
  2  g_id references game(g_id),
  3  u_id references umpire(u_id));

Table created.

SQL> desc umpired_by;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 G_ID                                               VARCHAR2(10)
 U_ID                                               VARCHAR2(10)
```

Data Insertion

Team Values

```
insert into team values('IND001','INDIA',6,2,1,1);
insert into team values('BLG011','BELGIUM',1,5,0,2);
insert into team values('CAN469','CANADA',11,0,3,1);
insert into team values('AUS111','AUSTRALIA',3,5,1,1);
insert into team values('PAK006','PAKISTAN',12,0,3,1);
```

```
SQL> select * from team;

T_ID       T_NAME                T_RANK NO_OF_WINS NO_OF_LOSSES NO_OF_DRAWS
---------- -------------------- ---------- ---------- ------------ -----------
IND001     INDIA                      6          2            1           1
BLG011     BELGIUM                    1          5            0           2
CAN469     CANADA                    11          0            3           1
AUS111     AUSTRALIA                  3          5            1           1
PAK006     PAKISTAN                  12          0            3           1
```

Player Values

```
insert into players values('PLR0001','SREEJESH PARATTU',4,TO_DATE('08-05-1988','dd-mm-yyyy'),'IND001');
insert into players values('PLR0002','BIRENDRA LAKRA',4,TO_DATE('03-02-1990','dd-mm-yyyy'),'IND001');
insert into players values('PLR0011','SIMON GOUGNARD',7,TO_DATE('17-01-1991','dd-mm-yyyy'),'BLG011');
insert into players values('PLR0006','AMMAD BUTT',4,TO_DATE('13-01-1995','dd-mm-yyyy'),'PAK006');
insert into players values('PLR0096','SUKHI PANESAR',4,TO_DATE('26-12-1993','dd-mm-yyyy'),'CAN469');
```

```
SQL> select * from players;

P_ID       P_NAME                       NO_OF_MATCHES DOB       T_ID
---------- ---------------------------- ------------- --------- ----------
PLR0001    SREEJESH PARATTU                         4 08-MAY-88 IND001
PLR0002    BIRENDRA LAKRA                           4 03-FEB-90 IND001
PLR0011    SIMON GOUGNARD                           7 17-JAN-91 BLG011
PLR0006    AMMAD BUTT                               4 13-JAN-95 PAK006
PLR0096    SUKHI PANESAR                            4 26-DEC-93 CAN469
```

Team Goalie

```
insert into goalie values(5,'PLR0001');
```

```
SQL> select * from goalie;

GOALS_SAVED P_ID
----------- ----------
          5 PLR0001
```

Team Field_Player

```
insert into field_player values(0,'DEFENDER','PLR0002');
insert into field_player values(1,'MID FIELDER','PLR0011');
insert into field_player values(0,'MID FIELDER','PLR0006');
insert into field_player values(3,'ATTACKER','PLR0096');
```

```
SQL> select * from field_player;

GOALS_SCORED POSITION            P_ID
------------ -------------------- ----------
           0 DEFENDER             PLR0002
           1 MID FIELDER          PLR0011
           0 MID FIELDER          PLR0006
           3 ATTACKER             PLR0096
```

Table Captain

```
insert into Captain values('CAP111','EDDIE OCKENDEN',138,4,'AUS111');
insert into Captain values('CAP001','MANPREET SINGH',115,3,'IND001');
insert into Captain values('CAP011','THOMAS BRIELS',104,3,'BLG011');
insert into Captain values('CAP469','SCOTT TUPPER',65,2,'CAN469');
insert into Captain values('CAP006','MUHAMMAD RIZWAN',35,1,'PAK006');
```

```
SQL> select * from captain;

C_ID                 C_NAME                         NO_OF_WINS YEARS_CAPTAIN T_ID
-------------------- ------------------------------ ---------- ------------- ----------
CAP111               EDDIE OCKENDEN                        138             4 AUS111
CAP001               MANPREET SINGH                        115             3 IND001
CAP011               THOMAS BRIELS                         104             3 BLG011
CAP469               SCOTT TUPPER                           65             2 CAN469
CAP006               MUHAMMAD RIZWAN                        35             1 PAK006
```

Table Coach

```
insert into coach values('COA001','HARENDRA SINGH','INDIA',12,'IND001');
insert into coach values('COA011','SHANE McLEOD','NEW ZEALAND',23,'BLG011');
insert into coach values('COA111','COLIN BATCH','AUSTRALIA',09,'AUS111');
insert into coach values('COA006','REHAN BUTT','PAKISTAN',07,'PAK006');
insert into coach values('COA469','PAUL BUNDY','UK',13,'CAN469');
```

```
SQL> select * from coach;

COACH_ID   COACH_NAME                     COUNTRY                          EXP T_ID
---------- ------------------------------ ------------------------------ ---------- ----------
COA001     HARENDRA SINGH                 INDIA                              12 IND001
COA011     SHANE McLEOD                   NEW ZEALAND                        23 BLG011
COA111     COLIN BATCH                    AUSTRALIA                           9 AUS111
COA006     REHAN BUTT                     PAKISTAN                            7 PAK006
COA469     PAUL BUNDY                     UK                                 13 CAN469
```

Table Game

```
insert into game values('GAME001',TO_TIMESTAMP('19:00','HH24:MI'),TO_DATE('09-12-2019','DD-MM-YYYY'),'BHUBANESWAR');
insert into game values('GAME002',TO_TIMESTAMP('19:00','HH24:MI'),TO_DATE('11-12-2019','DD-MM-YYYY'),'CHENNAI');
insert into game values('GAME003',TO_TIMESTAMP('16:45','HH24:MI'),TO_DATE('12-12-2019','DD-MM-YYYY'),'LUCKNOW');
```

insert into game values('GAME004',TO_TIMESTAMP('19:00','HH24:MI'),TO_DATE('12-12-2019','DD-MM-YYYY'),'DELHI');
insert into game values('GAME005',TO_TIMESTAMP('16:45','HH24:MI'),TO_DATE('14-12-2019','DD-MM-YYYY'),'BHUBANESWAR');

```
SQL> select * from game;

G_ID       G_TIME              G_DATE    VENUE
---------- ------------------- --------- ------------------------------
GAME001    19:00               09-DEC-19 BHUBANESWAR
GAME002    19:00               11-DEC-19 CHENNAI
GAME003    16:45               12-DEC-19 LUCKNOW
GAME004    19:00               12-DEC-19 DELHI
GAME005    16:45               14-DEC-19 BHUBANESWAR
```

Table Plays1

insert into plays1 values('WON','GAME001','IND001');
insert into plays1 values('WON','GAME002','BLG011');
insert into plays1 values('LOST','GAME003','CAN469');
insert into plays1 values('WON','GAME004','BLG011');
insert into plays1 values('LOST','GAME005','PAK006');

```
SQL> select * from plays1;

RESULT              G_ID       T_ID
------------------- ---------- ----------
WON                 GAME001    IND001
WON                 GAME002    BLG011
LOST                GAME003    CAN469
WON                 GAME004    BLG011
LOST                GAME005    PAK006
```

Table Plays2

insert into plays2 values('LOST','GAME001','PAK006');
insert into plays2 values('LOST','GAME002','PAK006');
insert into plays2 values('WON','GAME003','BLG011');
insert into plays2 values('LOST','GAME004','AUS111');
insert into plays2 values('WON','GAME005','AUS111');

```
SQL> select * from plays2;

RESULT              G_ID       T_ID
------------------- ---------- ----------
LOST                GAME001    PAK006
LOST                GAME002    PAK006
WON                 GAME003    BLG011
LOST                GAME004    AUS111
WON                 GAME005    AUS111
```

Table Umpire

insert into UMPIRE VALUES('UMP001','RAGHU PRASAD','INDIA',200);
insert into UMPIRE VALUES('UMP006','JAVED SHAIKH','PAKISTAN',106);
insert into UMPIRE VALUES('UMP469','DAVID TOM','CANADA',269);
insert into UMPIRE VALUES('UMP111','ADAM KEARNS','AUSTRALIA',342);

insert into UMPIRE VALUES('UMP011','BEN GOENTGEN','BELGIUM',145);

```
SQL> select * from umpire;

U_ID       UNAME                          COUNTRY                        NO_OF_MATCHES
---------- ------------------------------ ------------------------------ -------------
UMP001     RAGHU PRASAD                   INDIA                                    200
UMP006     JAVED SHAIKH                   PAKISTAN                                 106
UMP469     DAVID TOM                      CANADA                                   269
UMP111     ADAM KEARNS                    AUSTRALIA                                342
UMP011     BEN GOENTGEN                   BELGIUM                                  145
```

Table Umpired_By

insert into umpired_by values('GAME001','UMP111');
insert into umpired_by values('GAME002','UMP001');
insert into umpired_by values('GAME003','UMP006');
insert into umpired_by values('GAME004','UMP469');
insert into umpired_by values('GAME005','UMP001');

```
SQL> select * from umpired_by;

G_ID       U_ID
---------- ----------
GAME001    UMP111
GAME002    UMP001
GAME003    UMP006
GAME004    UMP469
GAME005    UMP001
```

6. Write down the necessary SQL statements for implementation of functional requirements through SQL query, delete and update statement.

UPDATE:

1. Add column of total matches in the table TEAM.

Update the rows using total matches= number of WINS+ number of LOSSES + number of DRAWS

```
alter table team add total_matches number(3);
update team set total_matches = no_of_wins + no_of_losses +
no_of_draws;
```

```
SQL> alter table team add total_matches number(3);

Table altered.

SQL> update team set total_matches = no_of_wins + no_of_losses + no_of_draws;

5 rows updated.
```

```
SQL> select * from team;

T_ID       T_NAME                T_RANK NO_OF_WINS NO_OF_LOSSES NO_OF_DRAWS TOTAL_MATCHES
---------- ------------------- ---------- ---------- ------------ ----------- -------------
IND001     INDIA                      6          2            1           1             4
BLG011     BELGIUM                    1          5            0           2             7
CAN469     CANADA                    11          0            3           1             4
AUS111     AUSTRALIA                  3          5            1           1             7
PAK006     PAKISTAN                  12          0            3           1             4
```

2. Add column named ‘No_of_Attendees’ in table Game. Using interactive updation

```
alter table game add no_of_attendees number(6);
update game set no_of_attendees = '&no_of_attendees' where
g_id = '&g_id';
```

```
SQL> alter table game add no_of_attendees number(6);

Table altered.

SQL> update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id';
Enter value for no_of_attendees: 4550
Enter value for g_id: GAME001
old   1: update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id'
new   1: update game set no_of_attendees = '4550' where g_id = 'GAME001'

1 row updated.
```

```
Enter value for no_of_attendees: 4550
Enter value for g_id: GAME001
old   1: update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id'
new   1: update game set no_of_attendees = '4550' where g_id = 'GAME001'

1 row updated.

SQL> update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id';
Enter value for no_of_attendees: 3680
Enter value for g_id: GAME002
old   1: update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id'
new   1: update game set no_of_attendees = '3680' where g_id = 'GAME002'

1 row updated.

SQL> update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id';
Enter value for no_of_attendees: 4260
Enter value for g_id: GAME003
old   1: update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id'
new   1: update game set no_of_attendees = '4260' where g_id = 'GAME003'

1 row updated.

SQL> update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id';
Enter value for no_of_attendees: 3905
Enter value for g_id: GAME004
old   1: update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id'
new   1: update game set no_of_attendees = '3905' where g_id = 'GAME004'

1 row updated.

SQL> update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id';
Enter value for no_of_attendees: 3880
Enter value for g_id: GAME005
old   1: update game set no_of_attendees = '&no_of_attendees' where g_id = '&g_id'
new   1: update game set no_of_attendees = '3880' where g_id = 'GAME005'

1 row updated.

SQL> select * from game;

G_ID       G_TIME                                                                    G_DATE    VENUE                     NO_OF_ATTENDEES
---------- ------------------------------------------------------------------------- --------- ------------------------- ---------------
GAME001    01-MAR-20 07.00.00 PM                                                     09-DEC-19 BHUBANESWAR                       4550
GAME002    01-MAR-20 07.00.00 PM                                                     11-DEC-19 CHENNAI                           3680
GAME003    01-MAR-20 04.45.00 PM                                                     12-DEC-19 LUCKNOW                           4260
GAME004    01-MAR-20 07.00.00 PM                                                     12-DEC-19 DELHI                             3905
GAME005    01-MAR-20 04.45.00 PM                                                     14-DEC-19 BHUBANESWAR                       3880
```

3. Add column Experience to Umpires table based on the number of matches they have umpired

```
alter table umpire add experience varchar(10);
update umpire set experience = 'HIGH' where no_of_matches >
200;
update umpire set experience = MEDIUM where no_of_matches
between 100 and 200;
update umpire set experience = 'LOW' where no_of_matches <
100;
```

```
SQL> alter table umpire add experience varchar(10);

Table altered.

SQL> update umpire set experience = 'HIGH' where no_of_matches > 200;

2 rows updated.

SQL> update umpire set experience = 'MEDIUM' where no_of_matches between 100 and 200;

3 rows updated.

SQL> update umpire set experience = 'LOW' where no_of_matches < 100;

0 rows updated.

SQL> select * from umpire;

U_ID       UNAME                     COUNTRY                   NO_OF_MATCHES EXPERIENCE
---------- ------------------------- ------------------------- ------------- ----------
UMP001     RAGHU PRASAD              INDIA                               200 MEDIUM
UMP006     JAVED SHAIKH              PAKISTAN                            106 MEDIUM
UMP469     DAVID TOM                 CANADA                              269 HIGH
UMP111     ADAM KEARNS               AUSTRALIA                           342 HIGH
UMP011     BEN GOENTGEN              BELGIUM                             145 MEDIUM
```

4. Due to rain, the match to be conducted in Lucknow is postponed to new timings. Update the match timings to 19:00

```
update game set g_time = to_timestamp('19:00','HH24:MI') where
venue = 'LUCKNOW';
```

```
SQL> update game set g_time = to_timestamp('19:00','HH24:MI') where venue = 'LUCKNOW';

1 row updated.

SQL> d
SP2-0042: unknown command "d" - rest of line ignored.
SQL> update game set g_time = to_timestamp('19:00','HH24:MI') where venue = 'LUCKNOW';

1 row updated.

SQL> select * from game;

G_ID       G_TIME                                                                        G_DATE    VENUE                          NO_OF_ATTENDEES
---------- --------------------------------------------------------------------------- --------- ------------------------------ ---------------
GAME001    19:00                                                                       09-DEC-19 BHUBANESWAR                              4550
GAME002    19:00                                                                       11-DEC-19 CHENNAI                                  3680
GAME003    19:00                                                                       12-DEC-19 LUCKNOW                                  4260
GAME004    19:00                                                                       12-DEC-19 DELHI                                    3905
GAME005    16:45                                                                       14-DEC-19 BHUBANESWAR                              3880
```

SQL QUERIES USING JOIN/NESTING/SET OPERATIONS:

1. Display details of team with highest rank.

```
select * from team where t_rank=(select max(t_rank) from
team);
```

```
SQL> select * from team where t_rank=(select max(t_rank) from team);

T_ID       T_NAME                  T_RANK NO_OF_WINS NO_OF_LOSSES NO_OF_DRAWS
---------- -------------------- ---------- ---------- ------------ -----------
PAK006     PAKISTAN                    12          0            3           1
```

2. Display coaches who are from the same country which they coach.

```
select coach_id, coach_name from coach natural join team where
coach.country = team.t_name;
```

```
SQL> select coach_id, coach_name from coach natural join team where coach.country = team.t_name;

COACH_ID   | COACH_NAME
========== | ==============================
COA001     | HARENDRA SINGH
COA111     | COLIN BATCH
COA006     | REHAN BUTT
```

3. Display captain with most experience in the position.

```
select c_id, c_name from captain where years_captain=(select
max(years_captain) from captain);
```

```
SQL> select c_id, c_name from captain where years_captain=(select max(years_captain) from captain);

C_ID                 C_NAME
-------------------- ------------------------------
CAP111               EDDIE OCKENDEN
```

4. Display umpire details of umpire who has umpired more than 150 matches.

```
select u_id, uname, no_of_matches from umpire where
no_of_matches > 150;
```

```
SQL> select u_id, uname, no_of_matches from umpire where no_of_matches > 150;

U_ID       | UNAME                          | NO_OF_MATCHES
========== | ============================== | =============
UMP001     | RAGHU PRASAD                   |           200
UMP469     | DAVID TOM                      |           269
UMP111     | ADAM KEARNS                    |           342
```

5. Display the name of the umpires who have not umpired matches in Bhubaneswar.

```
select uname from umpire minus select uname from umpire where
u_id in(select u_id from umpired_by where g_id in(select g_id
from game where venue='Bhubaneswar'));
```

```
SQL> select uname from umpire minus select uname from umpire where u_id in(select u_id from umpired_by where g_id in(sel
ect g_id from game where venue='BHUBANESWAR'));

UNAME
----------------------------
BEN GOENTGEN
DAVID TOM
JAVED SHAIKH
```

6. (a)Display the teams whose captain have number of wins greater than 100.
(b) Display the teams whose captain do not have number of wins greater than 100.

```
select t_name from team where t_id in(select t_id from Captain
where no_of_wins>100);

select t_name from team minus select t_name from team where
t_id in (select t_id from Captain where no_of_wins>100);
```

```
SQL> select t_name from team where t_id in(select t_id from Captain where no_of_wins>100);

T_NAME
--------------------
AUSTRALIA
BELGIUM
INDIA

SQL> select t_name from team minus select t_name from team where t_id in (select t_id from Captain where no_of_wins>100)
;

T_NAME
--------------------
CANADA
PAKISTAN
```

7. Display name of coach who has coached a team with captain having number of wins lesser than 100

```
select coach_name from coach where t_id in(select t_id from
Captain where no_of_wins<100);

select coach_name from coach inner join Captain on coach.t_id
= Captain.t_id where(captain.no_of_wins<100);
```

```
SQL> select coach_name from coach where t_id in(select t_id from Captain where no_of_wins<100);

COACH_NAME
----------------------------
PAUL BUNDY
REHAN BUTT

SQL> select coach_name from coach inner join Captain on coach.t_id = Captain.t_id where(captain.no_of_wins<100);

COACH_NAME
----------------------------
REHAN BUTT
PAUL BUNDY
```

8. SELECT WITH GROUP BY HAVING CLAUSE QUERY:

```
select p_id, upper(p_name) from players natural join
field_player where position in (select position from
field_player group by position having count(*)>1)
```

```
QL> select p_id, upper(p_name) from players natural join field_player where position in (select position from field_pla
er group by position having count(*)>1);

_ID      UPPER(P_NAME)
-------- ----------------------------
LR0011   SIMON GOUGNARD
LR0006   AMMAD BUTT
```

DELETE QUERY:

1. Deleting the column number_of_matches.

```
alter table players drop column no_of_matches;
```

```
SQL> alter table players drop column no_of_matches;

Table altered.

SQL> select * from players;

P_ID       P_NAME                         DOB       T_ID
---------- ------------------------------ --------- ----------
PLR0001    SREEJESH PARATTU               08-MAY-88 IND001
PLR0002    BIRENDRA LAKRA                 03-FEB-90 IND001
PLR0011    SIMON GOUGNARD                 17-JAN-91 BLG011
PLR0006    AMMAD BUTT                     13-JAN-95 PAK006
PLR0096    SUKHI PANESAR                  26-DEC-93 CAN469
```

2. Deleting a coach from COACH table.

```
delete from coach where coach_id='COA011';
```

```
SQL> select * from coach;

COACH_ID   COACH_NAME                     COUNTRY
---------- ------------------------------ ----------
       EXP T_ID
---------- ----------
COA011     SHANE McLEOD                   NEW ZEALAND
        23 BLG011

COA111     COLIN BATCH                    AUSTRALIA
         9 AUS111

COA006     REHAN BUTT                     PAKISTAN
         7 PAK006


COACH_ID   COACH_NAME                     COUNTRY
---------- ------------------------------ ----------
       EXP T_ID
---------- ----------
COA469     PAUL BUNDY                     UK
        13 CAN469
SQL> delete from coach where coach_id='COA011';

1 row deleted.

SQL> select * from coach;

COACH_ID   COACH_NAME                     COUNTRY
---------- ------------------------------ ----------
       EXP T_ID
---------- ----------
COA111     COLIN BATCH                    AUSTRALIA
         9 AUS111

COA006     REHAN BUTT                     PAKISTAN
         7 PAK006

COA469     PAUL BUNDY                     UK
        13 CAN469
```

DELETION WITH EMBEDDED SELECT:

3. Deleting those coach who coached a given team .

```
select * from coach where t_id in((select team_id from team
where t_name='INDIA'));
```

```
SQL> select * from coach where t_id in((select t_id from team where t_name='INDIA'));

COACH_ID   COACH_NAME                    COUNTRY
---------- ----------------------------- -----------------------------
       EXP T_ID
---------- ----------
COA001     HARENDRA SINGH                INDIA
        12 IND001

COA002     Rajnath                       INDIA
        15 IND001
```

```
delete from coach where t_id in(select t_id from team where
t_name='INDIA');
```

```
SQL> delete from coach where t_id in(select t_id from team where
  2  t_name='INDIA');

2 rows deleted.
```

```
select * from coach where t_id in((select team_id from team
where t_name='INDIA'));
```

```
SQL> select * from coach where t_id in(select t_id from team where t_name='INDIA');

no rows selected
```

4. Delete which umpire umpired in a given venue of a game.

```
select u_id,uname from umpire where u_id in (select u_id from
umpired_by where g_id in(select g_id from game where
venue='DELHI'));
```

```
delete from umpired_by where u_id in(select u_id from
umpired_by where g_id in(select g_id from game where
venue='DELHI'));
```

```
SQL> select u_id,uname from umpire where u_id in (select u_id from umpired_by where g_id in(select g_id from game where venue='DELHI'));

U_ID       UNAME
---------- -----------------------------
UMP469     DAVID TOM

SQL> delete from umpired_by where u_id in(select u_id from umpired_by where g_id in(select g_id from game where venue='DELHI'));

1 row deleted.

SQL> select u_id,uname from umpire where u_id in (select u_id from umpired_by where g_id in(select g_id from game where venue='DELHI'));

no rows selected
```

7. Define and implement two PL/SQL function involving cursor and two PL/SQL procedure involving cursor for the database under consideration.

PL/SQL PROCEDURE:

User wants to predict the competition level of the next match by fetching the player details of a particular team. Use PL/SQL procedure to execute the same.

```
Declare
cursor details is
select * from players;
det details%rowtype;
team_id varchar(30);

PROCEDURE print(x IN string) IS
BEGIN
   dbms_output.put_line(x);
END;

PROCEDURE printvalues(x IN string) IS

BEGIN

       open details;
    loop fetch details into det;
    exit when details%notfound;
     team_id:='&team_id';
    IF (det.t_id= team_id) THEN
        print(' Name of the player:' || det.p_name);
        print('no of matches' || det.no_of_matches);
        print(' date of birth' || det.dob);
    else
        print('Team id did not match');
    end IF;
end loop;
END;

begin
    printvalues('');
end;
/
```

```
SQL> declare
  2  cursor details is
  3  select * from players;
  4  det details%rowtype;
  5  team_id varchar(30);
  6
  7  PROCEDURE print(x IN string) IS
  8  BEGIN
  9     dbms_output.put_line(x);
 10  END;
 11
 12  PROCEDURE printvalues(x IN string) IS
 13
 14  BEGIN
 15
 16         open details;
 17      loop fetch details into det;
 18      exit when details%notfound;
 19       team_id:='&team_id';
 20      IF (det.t_id= team_id) THEN
 21          print(' Name of the player:' || det.p_name);
 22          print('no of matches' || det.no_of_matches);
 23          print(' date of birth' || det.dob);
 24      else
 25          print('Team id did not match');
 26      end IF;
 27  end loop;
 28  END;
 29
 30  begin
 31      printvalues('');
 32  end;
 33  /
Enter value for team_id: IND001
old  19:       team_id:='&team_id';
new  19:       team_id:='IND001';
Name of the player:SREEJESH PARATTU
no of matches4
date of birth08-MAY-88
Name of the player:BIRENDRA LAKRA
no of matches4
date of birth03-FEB-90
Team id did not match
Team id did not match
Team id did not match

PL/SQL procedure successfully completed.
```

```
SQL> declare
  2  cursor details is
  3  select * from players;
  4  det details%rowtype;
  5  team_id varchar(30);
  6
  7  PROCEDURE print(x IN string) IS
  8  BEGIN
  9     dbms_output.put_line(x);
 10  END;
 11
 12  PROCEDURE printvalues(x IN string) IS
 13
 14  BEGIN
 15
 16         open details;
 17      loop fetch details into det;
 18      exit when details%notfound;
 19       team_id:='&team_id';
 20      IF (det.t_id= team_id) THEN
 21          print(' Name of the player:' || det.p_name);
 22          print('no of matches' || det.no_of_matches);
 23          print(' date of birth' || det.dob);
 24      else
 25          print('Team id did not match');
 26      end IF;
 27  end loop;
 28  END;
 29
 30  begin
 31      printvalues('');
 32  end;
 33  /
Enter value for team_id: CAN469
old  19:       team_id:='&team_id';
new  19:       team_id:='CAN469';
Team id did not match
Team id did not match
Team id did not match
Team id did not match
Name of the player:SUKHI PANESAR
no of matches4
date of birth26-DEC-93

PL/SQL procedure successfully completed.
```

PL/SQL FUNCTION:

User wants to book the tickets of an upcoming match. Create a PL/SQL function to display the city name where the desired Match will be held.

```
declare
p game.g_id%type;
tf game.venue%type;
c number(5);
function get_stdname (matchid out game.g_id%type, std out
game.venue%type) return varchar is
begin
select venue into std from game where  g_id='&GameID';
return std;
end;
function printit(x IN string) return number is
begin
    dbms_output.put_line('Venue: '|| get_stdname(p,tf));
    return 1;
end;
begin
    c:=printit('HELLO');
end;
/
```

```
SQL> declare
  2  p game.g_id%type;
  3  tf game.venue%type;
  4  c number(5);
  5  function get_stdname (matchid out game.g_id%type, std out game.venue%type) return varchar is
  6  begin
  7  select venue into std from game where  g_id='&GameID';
  8  return std;
  9  end;
 10
 11  function printit(x IN string) return number is
 12  begin
 13      dbms_output.put_line('Venue: '|| get_stdname(p,tf));
 14      return 1;
 15  end;
 16
 17  begin
 18      c:=printit('HELLO');
 19  end;
 20  /
Enter value for gameid: GAME001
old   7: select venue into std from game where  g_id='&GameID';
new   7: select venue into std from game where  g_id='GAME001';
Venue: BHUBANESWAR

PL/SQL procedure successfully completed.
```

```
SQL> declare
  2  p game.g_id%type;
  3  tf game.venue%type;
  4  c number(5);
  5  function get_stdname (matchid out game.g_id%type, std out game.venue%type) return varchar is
  6  begin
  7  select venue into std from game where  g_id='&GameID';
  8  return std;
  9  end;
 10
 11  function printit(x IN string) return number is
 12  begin
 13      dbms_output.put_line('Venue: '|| get_stdname(p,tf));
 14      return 1;
 15  end;
 16
 17  begin
 18      c:=printit('HELLO');
 19  end;
 20  /
Enter value for gameid: GAME003
old   7: select venue into std from game where  g_id='&GameID';
new   7: select venue into std from game where  g_id='GAME003';
Venue: LUCKNOW

PL/SQL procedure successfully completed.
```

****