

DATABASE MANAGEMENT SYSTEM



Team Members:-

Abhijeet Senapati RA1811030010064

B. Sanchit Smarak RA1811030010070

Akshat Goel RA1811030010069

**TOPIC:- CRICKET TOURNAMENT MANAGEMENT
SYSTEM**



Project Name : Cricket Tournament

Introduction :

Our DBMS project is based on Cricket Tournament management. It provides various information about the various teams participating in the Tournament, in which all the major countries participate. It also provides us with information about the various players participating in the tournament. The database contains details of players, coaches and umpires among others. All the useful information about the entire Tournament can be found here.

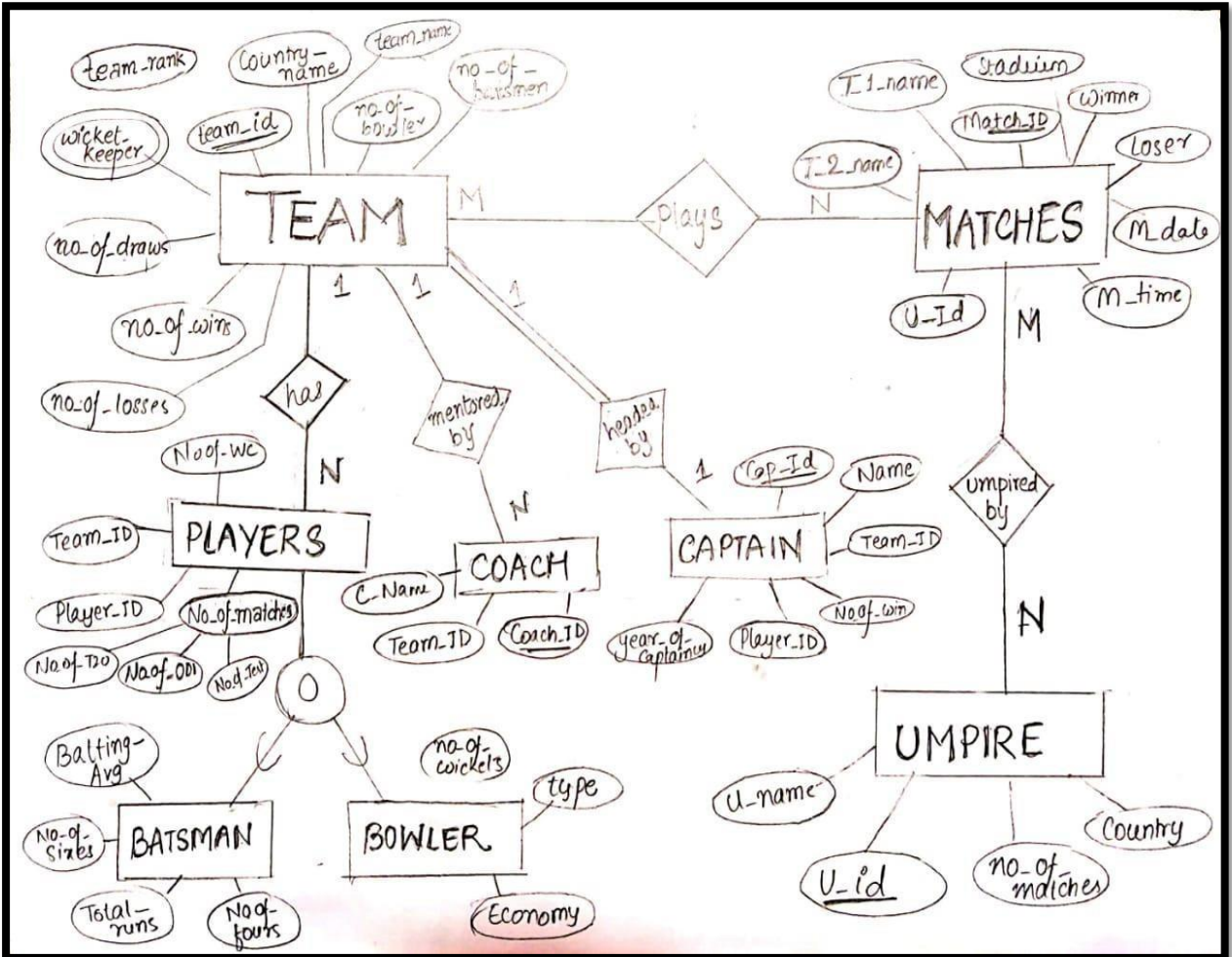
Data Requirements:

Entities:

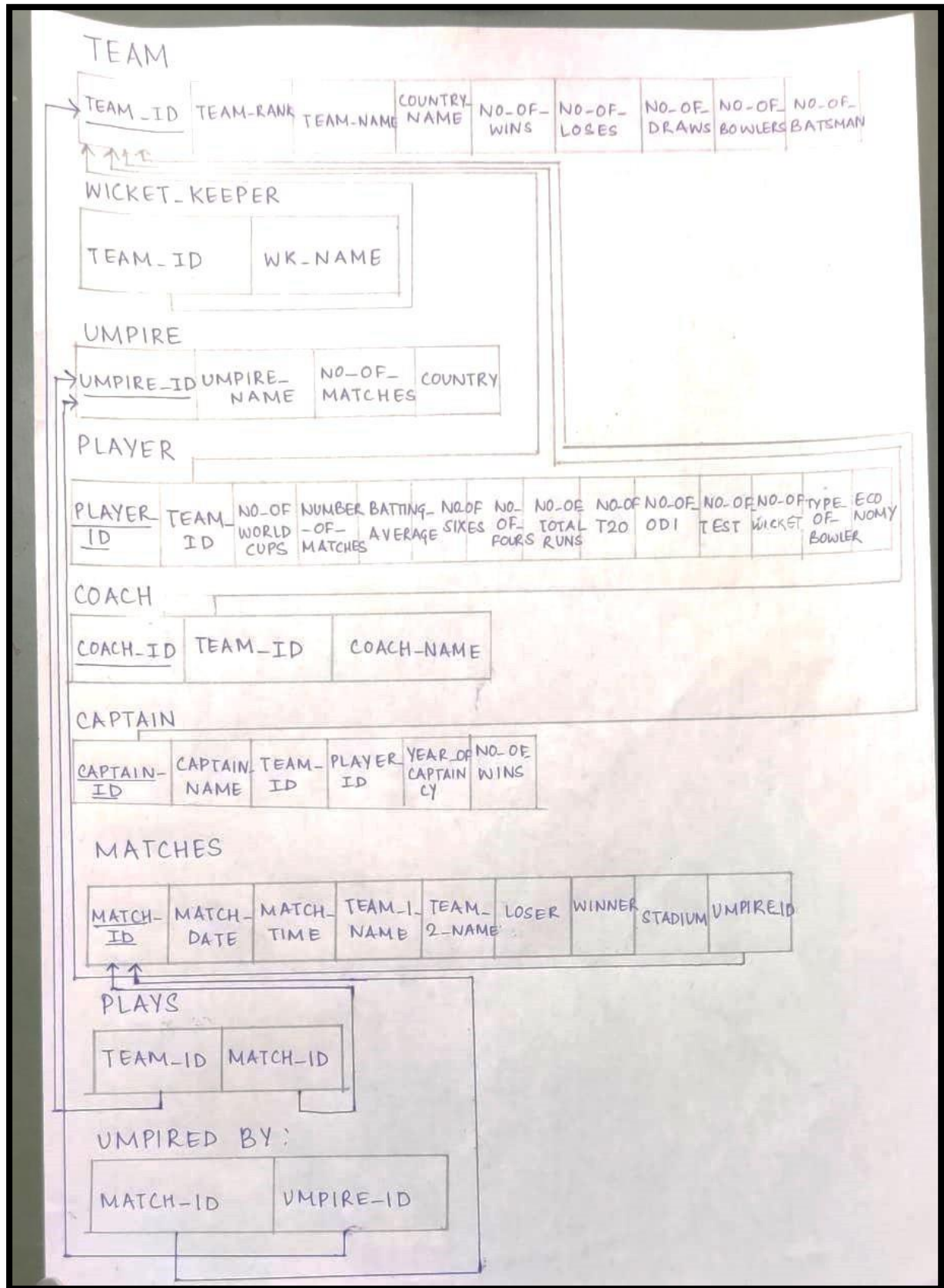
- 1) **Team** is an entity type which has many attributes like Team Name which uses the data type varchar. Every team has been given a **Team ID which is the primary key** which is of data type varchar. Team Ranking, Number of Batsmen and Number of Bowlers are of the data type number. There is another attribute - Wicketkeeper which is of multivalued type and accepts varchar data type. Primary key cannot have null value.
- 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 a foreign key, Team ID which is the primary key of the entity, Team. There is a complex attribute, Number of matches played, which comprises of Number of Test Matches, Number of T20 Matches, Number of Tournament Matches and Number of ODIs.

- 3) **Batsman** is an entity type which has the attributes – Number of sixes hit, Number of Fours hit, the batting average, and the total runs scored. All of these attributes are of the data type number.
- 4) **Bowler** is an entity type which has the attribute – type of batsman with varchar data type. It also includes number of wickets and economy which are of the data type number.
- 5) **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.
- 6) **Coach** is an entity type with a foreign key, Team ID, which is a primary key of entity type, Team. **It has a primary key, Coach ID, of data type varchar.** It also has another attribute of data type varchar, Name.
- 7) **Captain** is an entity type with a **primary key, Captain ID of data type varchar.** It has two foreign keys, i) Player id from table Players and ii) Team ID from table Team. Number of years of captaincy and Number of wins are also attributes of this table of data type number.
- 8) **Matches** is an entity type with a **primary key, match ID, of varchar data type.** It has attributes like Team1 Name, Team2 Name, Stadium, Winner Team and Loser Team of data type varchar. Match date is an attribute which uses the datatype date. Match time is an attribute which is of the data type time.

ER Diagram:-



Relational Schema:-



Create Tables:-

TABLES

- Team
- Wicket_Keeper
- Umpire
- Player
- Coach
- Captain
- Matches
- Plays
- Umpired_By

CODE TO CREATE TABLES:

```
create table TEAM(  
    team_id varchar(30) primary key,  
    team_rank number(3),  
    team_name varchar(20) not null,  
    country_name varchar(20),  
    no_of_wins number(3),  
    no_of_loses number(3),  
    no_of_draws number(3),  
    no_of_bowlers number(2),  
    no_of_batsmans number(2)  
);  
create table WICKET_KEEPER(  
    team_id references TEAM,  
    wk_name varchar(30)  
);  
create table UMPIRE(  
    umpire_id varchar(30) primary key,  
    umpire_name varchar(30),  
    no_of_matches number(4),  
    country varchar(20)  
);  
create table PLAYER(  
    player_id varchar(30) primary key,  
    team_id references TEAM,  
    no_of_worldcups number(2),  
    number_of_matches number(3),  
    batting_average number(3),  
    no_of_sixes number(3),
```



```

        no_of_fours number(3),
        no_of_totalruns number(4),
        no_of_t20 number(3),
        no_of_odi number(3),
        no_of_test number(3),
        no_of_wickets number(2),
        type_of_bowler varchar(30),
        economy number(3)
    );
create table COACH(
    coach_id varchar(30) primary key,
    team_id references TEAM,
    coach_name varchar(30)
);
create table CAPTAIN(
    captain_id varchar(30) primary key,
    captain_name varchar(30),
    team_id references TEAM,
    player_id varchar(30),
    year_of_captaincy number(2),
    no_of_wins number(4)
);
create table MATCHES(
    match_id varchar(20) primary key,
    match_date date,
    match_time timestamp(0),
    team_1_name varchar(30),
    team_2_name varchar(30),
    loser varchar(30),
    winner varchar(30),
    stadium varchar(30),
    umpire_id references umpire
);
create table PLAYS(
    team_id references TEAM,
    match_id references MATCHES
);
create table UMPIRED_BY(
    match_id references MATCHES,
    umpire_id references UMPIRE
);

```


TABLE TEAM:

```
SQL> create table TEAM(  
  2      team_id varchar(30) primary key,  
  3      team_rank number(3),  
  4      team_name varchar(20) not null,  
  5      country_name varchar(20),  
  6      no_of_wins number(3),  
  7      no_of_loses number(3),  
  8      no_of_draws number(3),  
  9      no_of_bowlers number(2),  
 10      no_of_batsmans number(2)  
 11 );
```

Table created.

```
SQL> desc TEAM;
```

Name	Null?	Type
TEAM_ID	NOT NULL	VARCHAR2(30)
TEAM_RANK		NUMBER(3)
TEAM_NAME	NOT NULL	VARCHAR2(20)
COUNTRY_NAME		VARCHAR2(20)
NO_OF_WINS		NUMBER(3)
NO_OF_LOSES		NUMBER(3)
NO_OF_DRAWS		NUMBER(3)
NO_OF_BOWLERS		NUMBER(2)
NO_OF_BATSMANS		NUMBER(2)

TABLE WICKET KEEPER:

```
SQL> create table WICKET_KEEPER(  
  2     team_id references TEAM,  
  3     wk_name varchar(30)  
  4 );
```

Table created.

```
SQL> desc WICKET_KEEPER;
```

Name	Null?	Type
-----	-----	-----
TEAM_ID		VARCHAR2(30)
WK_NAME		VARCHAR2(30)

TABLE UMPIRE:

```
SQL> create table UMPIRE(  
  2     umpire_id varchar(30) primary key,  
  3     umpire_name varchar(30),  
  4     no_of_matches number(4),  
  5     country varchar(20)  
  6 );
```

Table created.

```
SQL> desc UMPIRE;
```

Name	Null?	Type
-----	-----	-----
UMPIRE_ID	NOT NULL	VARCHAR2(30)
UMPIRE_NAME		VARCHAR2(30)
NO_OF_MATCHES		NUMBER(4)
COUNTRY		VARCHAR2(20)

TABLE PLAYER:

```
SQL> create table PLAYER(  
 2     player_id varchar(30) primary key,  
 3     team_id references TEAM,  
 4     no_of_worldcups number(2),  
 5     number_of_matches number(3),  
 6     batting_average number(3),  
 7     no_of_sixes number(3),  
 8     no_of_fours number(3),  
 9     no_of_totalruns number(4),  
10     no_of_t20 number(3),  
11     no_of_odi number(3),  
12     no_of_test number(3),  
13     no_of_wickets number(2),  
14     type_of_bowler varchar(30),  
15     economy number(3)  
16 );
```

Table created.

```
SQL> desc PLAYER;
```

Name	Null?	Type
PLAYER_ID	NOT NULL	VARCHAR2(30)
TEAM_ID		VARCHAR2(30)
NO_OF_WORLDSCUPS		NUMBER(2)
NUMBER_OF_MATCHES		NUMBER(3)
BATTING_AVERAGE		NUMBER(3)
NO_OF_SIXES		NUMBER(3)
NO_OF_FOURS		NUMBER(3)
NO_OF_TOTALRUNS		NUMBER(4)
NO_OF_T20		NUMBER(3)
NO_OF_ODI		NUMBER(3)
NO_OF_TEST		NUMBER(3)
NO_OF_WICKETS		NUMBER(2)
TYPE_OF_BOWLER		VARCHAR2(30)
ECONOMY		NUMBER(3)

TABLE COACH:

```
SQL> create table COACH(  
 2      coach_id varchar(30) primary key,  
 3      team_id references TEAM,  
 4      coach_name varchar(30)  
 5  );
```

Table created.

```
SQL> desc COACH;
```

Name	Null?	Type
-----	-----	-----
COACH_ID	NOT NULL	VARCHAR2(30)
TEAM_ID		VARCHAR2(30)
COACH_NAME		VARCHAR2(30)

TABLE CAPTAIN:

```
SQL> create table CAPTAIN(  
 2      captain_id varchar(30) primary key,  
 3      captain_name varchar(30),  
 4      team_id references TEAM,  
 5      player_id varchar(30),  
 6      year_of_captaincy number(2),  
 7      no_of_wins number(4)  
 8  );
```

Table created.

```
SQL> desc CAPTAIN;
```

Name	Null?	Type
-----	-----	-----
CAPTAIN_ID	NOT NULL	VARCHAR2(30)
CAPTAIN_NAME		VARCHAR2(30)
TEAM_ID		VARCHAR2(30)
PLAYER_ID		VARCHAR2(30)
YEAR_OF_CAPTAINCY		NUMBER(2)
NO_OF_WINS		NUMBER(4)

TABLE MATCHES:

```
SQL> create table MATCHES(  
 2     match_id varchar(20) primary key,  
 3     match_date date,  
 4     match_time timestamp(0),  
 5     team_1_name varchar(30),  
 6     team_2_name varchar(30),  
 7     loser varchar(30),  
 8     winner varchar(30),  
 9     stadium varchar(30),  
10     umpire_id references umpire  
11 );
```

Table created.

```
SQL> desc MATCHES;
```

Name	Null?	Type
MATCH_ID	NOT NULL	VARCHAR2(20)
MATCH_DATE		DATE
MATCH_TIME		TIMESTAMP(0)
TEAM_1_NAME		VARCHAR2(30)
TEAM_2_NAME		VARCHAR2(30)
LOSER		VARCHAR2(30)
WINNER		VARCHAR2(30)
STADIUM		VARCHAR2(30)
UMPIRE_ID		VARCHAR2(30)

TABLE PLAYS:

```
SQL> create table PLAYS(  
 2     team_id references TEAM,  
 3     match_id references MATCHES  
 4 );
```

Table created.

```
SQL> desc PLAYS;
```

Name	Null?	Type
TEAM_ID		VARCHAR2(30)
MATCH_ID		VARCHAR2(20)

TABLE UMPIRED_BY:

```
SQL> create table UMPIRED_BY(  
2     match_id references MATCHES,  
3     umpire_id references UMPIRE  
4 );
```

Table created.

```
SQL> desc UMPIRED_BY;
```

Name	Null?	Type
MATCH_ID		VARCHAR2(20)
UMPIRE_ID		VARCHAR2(30)

CODE TO INSERT VALUES TO TABLE:

TEAM VALUES

insert into team values(

'IND1221', 1, 'MEN IN BLUE','INDIA', 5, 1, 0, 6, 7

);

Insert into team values(

'AUS2174', 4, 'KANGAROO','AUSTRAILA', 3, 3, 0, 5, 6

);

Insert into team values(

'SA5412', 3, 'PROTEA','SOUTH AFRICA', 3, 2, 1, 8, 5

);

Insert into team values(

'NZ5687', 2, 'BLACK CAPS','NEW ZEALAND', 4, 2, 0, 6, 7

);

Insert into team values(

'BAN9852', 5, 'TIGERS','BANGLADESH', 2, 4, 0, 7, 7

);

```
SQL> select * from team;
```

TEAM_ID	TEAM_RANK	TEAM_NAME	COUNTRY_NAME	NO_OF_WINS	NO_OF_LOSES	NO_OF_DRAWS	NO_OF_BOWLERS	NO_OF_BATSMANS
IND1221	1	MEN IN BLUE	INDIA	5	1	0	6	7
AUS2174	4	KANGAROO	AUSTRAILA	3	3	0	5	6
SA5412	3	PROTEA	SOUTH AFRICA	3	2	1	8	5
NZ5687	2	BLACK CAPS	NEW ZEALAND	4	2	0	6	7
BAN9852	5	TIGERS	BANGLADESH	2	4	0	7	7

UMPIRE VALUES

insert into UMPIRE values (

'UMP41002', 'Kumar Dharmasena', 103, 'Sri Lanka'

);

insert into UMPIRE values (

'UMP74101', 'Aleem Dar', 207, 'Pakistan'

);

insert into UMPIRE values (

'Ump52410', 'Anil Chaudhary', 19, 'India'

);

insert into UMPIRE values (

'UMP85201', 'Ian Gould', 140, 'England'

);

insert into UMPIRE values (

'UMP55200', 'Tony Hill', 96, 'New Zealand'

);

```
SQL> select * from UMPIRE;
```

UMPIRE_ID	UMPIRE_NAME	NO_OF_MATCHES	COUNTRY
UMP41002	Kumar Dharmasena	103	Sri Lanka
UMP74101	Aleem Dar	207	Pakistan
Ump52410	Anil Chaudhary	19	India
UMP85201	Ian Gould	140	England
UMP55200	Tony Hill	96	New Zealand

COACH VALUES

insert into COACH values(

'CH417', 'IND1221', 'RAVI SHASTRI'

);

insert into COACH values(

'CH140', 'AUS2174', 'JUSTIN LANGER'

);

insert into COACH values(

'CH223', 'SA5412', 'OTTIS GIBSON'

);

insert into COACH values(

'CH398', 'NZ5687', 'GARY STEAD'

);

insert into COACH values(

'CH748', 'BAN9852', 'RUSSEL DOMINGO'

);

```
SQL> select * from COACH;
```

COACH_ID	TEAM_ID	COACH_NAME
CH417	IND1221	RAVI SHASTRI
CH140	AUS2174	JUSTIN LANGER
CH223	SA5412	OTTIS GIBSON
CH398	NZ5687	GARY STEAD
CH748	BAN9852	RUSSEL DOMINGO

CAPTAIN VALUES

insert into captain values(

'CAP11452', 'MS DHONI', 'IND1221','PLR44567', 4,56

);

insert into captain values(

'CAP21478', 'DALE STEYN', 'SA5412','PLR10235', 7,74

);

insert into captain values(

'CAP30214', 'MICHAEL CLARKE', 'AUS2174','PLR74138', 9,100

);

insert into captain values(

'CAP14789', 'TAMIM IQBAL', 'BAN9852','PLR89562',2,20

);

insert into captain values(

'CAP36957', 'ROSS TAYLOR', 'NZ5687','PLR957417', 5,85

);

```
SQL> select * from captain;
```

CAPTAIN_ID	CAPTAIN_NAME	TEAM_ID	PLAYER_ID	YEAR_OF_CAPTAINCY
CAP11452	MS DHONI	IND1221	PLR44567	4
CAP21478	DALE STEYN	SA5412	PLR10235	7
CAP30214	MICHAEL CLARKE	AUS2174	PLR74138	9
CAP14789	TAMIM IQBAL	BAN9852	PLR89562	2
CAP36957	ROSS TAYLOR	NZ5687	PLR957417	5

MATCHES VALUES

insert into MATCHES values(

'MAT101',to_date('12-03-2011','dd-mm-yyyy'),to_timestamp('15:30','hh24:mi'),'India','Bangladesh','Bangladesh','India','Feroz Shah Kotla','UMP55200'

);

insert into MATCHES values(

'MAT201',to_date('15-03-2011','dd-mm-yyyy'),to_timestamp('9:30','hh24:mi'),'England','Australia','England','Australia','Eden Gardens','UMP41002'

);

insert into MATCHES values(

'MAT301',to_date('21-03-2011','dd-mm-yyyy'),to_timestamp('11:30','hh24:mi'),'Sri Lanka','Bangladesh','Bangladesh','Sri Lanka','M.A. Chidambaram','UMP74101'

);

insert into MATCHES values(

'MAT401',to_date('23-03-2011','dd-mm-yyyy'),to_timestamp('15:30','hh24:mi'),'New Zealand','South Africa','South Africa','New Zealand','Sardar Patel','UMP85201'

);

insert into MATCHES values(

'MAT501',to_date('26-03-2011','dd-mm-yyyy'),to_timestamp('8:30','hh24:mi'),'England','India','England','India','Wankhede','Ump52410'

);

```
SQL> select * from MATCHES;
```

MATCH_ID	MATCH_DAT	MATCH_TIME	TEAM_1_NAME			
TEAM_2_NAME	LOSER	WINNER	STADIUM	UMPIRE_ID		
MAT101 Bangladesh	12-MAR-11 Bangladesh	01-OCT-19 03.30.00 PM Bangladesh	India Feroz Shah Kotla	UMP55200		
MAT301 Bangladesh	21-MAR-11 Bangladesh	01-OCT-19 11.30.00 AM Bangladesh	Sri Lanka M.A. Chidambaram	UMP74101		
MAT401 South Africa	23-MAR-11 South Africa	01-OCT-19 03.30.00 PM South Africa	New Zealand Sardar Patel	UMP85201		
MAT501 India	26-MAR-11 England	01-OCT-19 08.30.00 AM England	India Wankhede	Ump52410		
MAT201 Australia	15-MAR-11 England	01-OCT-19 09.30.00 AM England	England Eden Gardens	UMP41002		

PLAYER VALUES

insert into PLAYER values (

'PLR17410', 'IND1221', 2, 13, 58,7,24,800,74,120,20,1,'medium',3.2

);

insert into PLAYER values (

'PLR74203', 'AUS2174', 1, 6, 67, 10,39,463,41,210,140 ,1,'slow',8.5

);

insert into PLAYER values (

'PLR45987', 'SA5412', 3, 4, 99, 4, 47,985, 24,63,65,1,'medium-slow',11.2

);

insert into PLAYER values (

'PLR20147', 'NZ5687', 1, 12, 12, 1, 3,85, 52 ,10,74,1,'legspin',18.3

);

insert into PLAYER values (

'PLR65200', 'BAN9852', 2, 9, 4, 0,1 ,21,77, 30,2,1,'fast',17.3

);

```
SQL> select * from PLAYER;
```

PLAYER_ID	TEAM_ID			NO_OF_WORLDSCUPS	NUMBER_OF_MATCHES	BATTING_AVERAGE	NO_OF_SIXES	NO_OF_FOURS			
NO_OF_TOTALRUNS	NO_OF_T20	NO_OF_ODI	NO_OF_TEST	NO_OF_WICKETS	TYPE_OF_BOWLER	ECONOMY					
PLR17410	800	74	IND1221 120	20	1 medium	2	13	3	58	7	24
PLR74203	463	41	AUS2174 210	140	1 slow	1	6	9	67	10	39
PLR45987	985	24	SA5412 63	65	1 medium-slow	3	4	11	99	4	47
PLR20147	85	52	NZ5687 10	74	1 legspin	1	12	18	12	1	3
PLR65200	21	77	BAN9852 30	2	1 fast	2	9	17	4	0	1

UMPIRED_BY VALUES

insert into Umpired_by values(

'MAT501','UMP55200'

);

insert into Umpired_by values(

'MAT301','Ump52410'

);

insert into Umpired_by values(

'MAT101','UMP41002'

);

insert into Umpired_by values(

'MAT401','UMP74101'

);

insert into Umpired_by values(

'MAT201','Ump52410'

);

```
SQL> select * from Umpired_by;
```

MATCH_ID	UMPIRE_ID
MAT501	UMP55200
MAT301	Ump52410
MAT101	UMP41002
MAT401	UMP74101
MAT201	Ump52410

PLAYS VALUES

insert into Plays values(

'IND1221','MAT101'

);

insert into Plays values(

'AUS2174','MAT201'

);

insert into Plays values(

'BAN9852','MAT301'

);

insert into Plays values(

'NZ5687','MAT401'

);

insert into Plays values(

'IND1221','MAT501'

);

```
SQL> select * from Plays;
```

TEAM_ID	MATCH_ID
=====	=====
IND1221	MAT101
AUS2174	MAT201
BAN9852	MAT301
NZ5687	MAT401
IND1221	MAT501

WICKET_KEEPER VALUES

insert into WICKET_KEEPER values(

'IND1221','MS Dhoni'

);

insert into WICKET_KEEPER values(

'IND1221','Dinesh Kartik'

);

insert into WICKET_KEEPER values(

'AUS2174','Tim Lee'

);

insert into WICKET_KEEPER values(

'AUS2174','Peter Hegward'

);

insert into WICKET_KEEPER values(

'AUS2174','Hefer Kingsly'

);

```
SQL> select * from WICKET_KEEPER;
```

TEAM_ID	WK_NAME
IND1221	MS Dhoni
IND1221	Dinesh Kartik
AUS2174	Tim Lee
AUS2174	Peter Hegward
AUS2174	Hefer Kingsly

DML:-

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 WNS+ number of LOSES + number of DRAWS.

CODE:

```
alter table team add total_matches number(5);
update team set total_matches=no_of_draws + no_of_wins + no_of_loses;
```

```
SQL> alter table team add total_matches number(5);
Table altered.
SQL> update team set total_matches=no_of_draws + no_of_wins + no_of_loses;
$ rows updated.
SQL> set lines 180
SQL> set pagesize 500
SQL> desc team;
-----
Name                                     Null?    Type
-----
TEAM_ID                                NOT NULL VARCHAR2(30)
TEAM_RANK                             NUMBER(3)
TEAM_NAME                             NOT NULL VARCHAR2(20)
COUNTRY_NAME                           VARCHAR2(20)
NO_OF_WINS                             NUMBER(3)
NO_OF_LOSES                             NUMBER(3)
NO_OF_DRAWS                             NUMBER(3)
NO_OF_BOWLERS                             NUMBER(2)
NO_OF_BATSMANS                             NUMBER(2)
TOTAL_MATCHES                             NUMBER(5)

SQL> select * from team;
-----
TEAM_ID    TEAM_RANK  TEAM_NAME    COUNTRY_NAME    NO_OF_WINS  NO_OF_LOSES  NO_OF_DRAWS  NO_OF_BOWLERS  NO_OF_BATSMANS  TOTAL_MATCHES
-----
IND1221    1  MEN IN BLUE    INDIA            5            1            0            6            7            6
AUS2174    4  KANGAROO      AUSTRAILA        3            3            0            5            6            6
SA5412     3  PROTEA        SOUTH AFRICA     3            2            1            8            5            6
NZ5687     2  BLACK CAPS    NEW ZEALAND      4            2            0            6            7            6
BAN9852    5  TIGERS        BANGLADESH       2            4            0            7            7            6

SQL>
```

2. Add column named 'PLAYER_NAME' in table PLAYER. Using interactive updation.

CODE:

```
3. alter table player add player_name varchar(20);
4. update player set player_name = '&player_name' where player_id = '&player_id';
```

OUTPUT:

SQL Plus

```
SQL> alter table player add player_name varchar(20);
Table altered.

SQL> update player set player_name = '&player_name' where player_id = '&player_id';
Enter value for player_name: MS Dhoni
Enter value for player_id: PLR17410
old 1: update player set player_name = '&player_name' where player_id = '&player_id'
new 1: update player set player_name = 'MS Dhoni' where player_id = 'PLR17410'

1 row updated.
```

SQL Plus

```
0
2 1 fast 17 Shakib Al Hassan

SQL>
SQL> set lines 150
SQL> select * from player
2 ;
```

PLAYER_ID	TEAM_ID	NO_OF_WORLD CUPS	NUMBER_OF_MATCHES	BATTING_AVERAGE	NO_OF_SIXES	NO_OF_FOURS				
NO_OF_TOTAL RUNS	NO_OF_T20	NO_OF_ODI	NO_OF_TEST	NO_OF_WICKETS	TYPE_OF_BOWLER	ECONOMY	PLAYER_NAME			
PLR17410	800	74	IND1221 120	20	1 medium	2	13	58	7	24
PLR74203	463	41	AUS2174 210	140	1 slow	1	6	67	10	39
PLR45987	985	24	SA5412 63	65	1 medium-slow	3	4	99	4	47
PLR20147	85	52	NZ5687 10	74	1 legspin	1	12	12	1	3
PLR65200	21	77	BAN9852 30	2	1 fast	2	9	4	0	1
								17 Shakib Al Hassan		

SQL QUERIES USING JOIN, SUB QUERY & SET OPERATIONS:-

1. Display the name of the umpires who have not umpired matches in eden gardens.

CODE:

```
select umpire_name from umpire minus select umpire_name from umpire
where umpire_id in(select umpire_id from matches where stadium='Eden Gardens');

select umpire_name from umpire minus select umpire_name from umpire natural join mat
ches where stadium='Wankhede';
```

OUTPUT:

```
SQL> select umpire_name from umpire minus select umpire_name from umpire
  2  where umpire_id in(select umpire_id from matches where stadium='Eden
  3  Gardens');

UMPIRE_NAME
-----
Aleem Dar
Anil Chaudhary
Ian Gould
Tony Hill

SQL> select umpire_name from umpire minus select umpire_name from umpire
  2  where umpire_id in(select umpire_id from matches where stadium='Wankhede');

UMPIRE_NAME
-----
Aleem Dar
Ian Gould
Kumar Dharmasena
Tony Hill

SQL>
```

```
SQL>
SQL> select umpire_name from umpire natural join matches where stadium='Wankhede';

UMPIRE_NAME
-----
Anil Chaudhary

SQL>
SQL> select umpire_name from umpire minus select umpire_name from umpire natural join matches where stadium='Wankhede';

UMPIRE_NAME
-----
Aleem Dar
Ian Gould
Kumar Dharmasena
Tony Hill

SQL>
```

2. (a) Display the country whose players have batting average greater than 60.
(b) Display the country whose players donot have batting average greater than 60.

CODE:

```
select country_name from team where team_id in(select team_id from player
where batting_average >60);

select country_name from team natural join player where batting_average>60;

select country_name from team minus select country_name from team where team_id in(s
elect team_id from player
where batting_average >60);
```

OUTPUT:

```
SQL>
SQL>
SQL> select country_name from team where team_id in(select team_id from player
2   where batting_average >60);

COUNTRY_NAME
-----
AUSTRAILA
SOUTH AFRICA

SQL>
SQL> select country_name from team natural join player where batting_average>60;

COUNTRY_NAME
-----
AUSTRAILA
SOUTH AFRICA

SQL>
SQL> select country_name from team minus select country_name from team where team_id in(select team_id from player
2   where batting_average >60);

COUNTRY_NAME
-----
BANGLADESH
INDIA
NEW ZEALAND

SQL>
```

3. Display name of coach who has coached a player with total_runs greater than 500;

CODE:

```
select distinct coach_name from coach where team_id in(select team_id
from player where no_of_totalruns>500 );
```

```
select distinct coach_name from coach inner join player on coach.team_id
= player.team_id where(player.no_of_totalruns>500);
```

```
select distinct coach_name from coach minus select distinct coach_name from coach wh
ere team_id in(select team_id from player where no_of_totalruns>500 );
```

OUTPUT:

```
SQL> select distinct coach_name from coach where team_id in(select team_id
  2  from player where no_of_totalruns>500 );

COACH_NAME
-----
OTTIS GIBSON
RAVI SHASTRI

SQL>
SQL> select distinct coach_name from coach inner join player on coach.team_id
  2  = player.team_id where(player.no_of_totalruns>500);

COACH_NAME
-----
OTTIS GIBSON
RAVI SHASTRI

SQL>
```

```
SQL>
SQL> select distinct coach_name from coach minus select distinct coach_name from coach where team_id in(select team_id
  2  from player where no_of_totalruns>500 );

COACH_NAME
-----
GARY STEAD
JUSTIN LANGER
RUSSEL DOMINGO

SQL>
```

4. Display name of wicket keeper who is also the captain of his team.

CODE:

```
select wk_name from WICKET_KEEPER where team_id in(select team_id from
captain where captain_name=wk_name);

select wk_name from WICKET_KEEPER natural join captain where captain_name =wk_name;

select wk_name from WICKET_KEEPER minus select wk_name from WICKET_KEEPER where tea
m_id in(select team_id from
captain where captain_name=wk_name);
```

OUTPUT:

```
SQL> update captain set captain_name ='MS Dhoni'where Captain_id='CAP11452';
1 row updated.
```

```
SQL> select * from captain;
```

CAPTAIN_ID	CAPTAIN_NAME	TEAM_ID	PLAYER_ID	YEAR_OF_CAPTAINCY
NO_OF_WINS				
CAP11452	MS Dhoni	IND1221	PLR44567	4
56				
CAP21478	DALE STEYN	SA5412	PLR10235	7
74				
CAP30214	MICHAEL CLARKE	AUS2174	PLR74138	9
100				
CAP14789	TAMIM IQBAL	BAN9852	PLR89562	2
20				
CAP36957	ROSS TAYLOR	NZ5687	PLR957417	5
85				

```
SQL> select wk_name from WICKET_KEEPER where team_id in(select team_id from
2 captain where captain_name=wk_name);
```

```
WK_NAME
-----
MS Dhoni
```

```
SQL>
```

```
SQL> select wk_name from WICKET_KEEPER natural join captain where captain_name =wk_name;
```

```
WK_NAME
-----
MS Dhoni
```

```
SQL>
```

```
SQL> select wk_name from WICKET_KEEPER minus select wk_name from WICKET_KEEPER where team_id in(select team_id from
2 captain where captain_name=wk_name);
```

```
WK_NAME
-----
Dinesh Kartik
Hefer Kingsly
Peter Hegward
Tim Lee
```

```
SQL>
```


GROUP BY HAVING CLAUSE QUERY:-

Display the name of players who have same bowling action

CODE:

```
select player_id, upper(player_name) from player where type_of_bowler in(select type_of_bowler from player group by type_of_bowler having count(*)>1);
```

OUTPUT:

```
SQL> select player_id,player_name from player where type_of_bowler in(select type_of_bowler from player group by type_of_bowler having count(*)>1);
PLAYER_ID      PLAYER_NAME
-----
PLR75401      Jasprit Bumrah
PLR65200      Shakib Al Hassan

SQL> select player_id, upper(player_name) from player where type_of_bowler in(select type_of_bowler from player group by type_of_bowler having count(*)>1);
PLAYER_ID      UPPER(PLAYER_NAME)
-----
PLR75401      JASPRIT BUMRAH
PLR65200      SHAKIB AL HASSAN

SQL>
```

DELETE:

1. Deleting the column number_of_matches.

CODE:

```
alter table player drop column no_of_matches;
```

```
delete from coach where coach_id='CH596';
```

OUTPUT:

```
SQL> select * from player;
PLAYER_ID      TEAM_ID      NO_OF_WORLDUPS  NUMBER_OF_MATCHES  BATTING_AVERAGE  NO_OF_SIXES  NO_OF_FOURS
-----
PLR75401      23          56             IND1221            5                7 fast       3            11           8          17 Jasprit Bumrah  1          1
PLR17410      800         74             IND1221            20               1 medium     2            13           88         3 MS Dhoni       7          24
PLR74203      463         41             AUS2174            210              1 slow       1            6            67         9 BRETT LEE      10         39
PLR45987      985         24             SA5412             63               1 medium-slow 3            4            99         11 DAVID MILLER  4          47
PLR20147      85          52             NZ5687            10               1 legspin    1            12           12         18 Kane Williamson 1          3
PLR65200      21          77             BAN9852            30               1 fast       2            9            4          17 Shakib Al Hassan 0          1

6 rows selected.

SQL> alter table player drop column number_of_matches;
Table altered.

SQL> desc player;
Name      Null?  Type
-----
PLAYER_ID      NOT NULL  VARCHAR2(30)
TEAM_ID        NOT NULL  VARCHAR2(30)
NO_OF_WORLDUPS      NUMBER(3)
BATTING_AVERAGE    NUMBER(3)
NO_OF_SIXES         NUMBER(3)
NO_OF_FOURS         NUMBER(3)
NO_OF_TOTALRUNS     NUMBER(4)
NO_OF_T20           NUMBER(3)
NO_OF_T20I          NUMBER(3)
NO_OF_TEST          NUMBER(3)
NO_OF_WICKETS       NUMBER(2)
TYPE_OF_BOWLER      VARCHAR2(30)
ECONOMY             NUMBER(3)
PLAYER_NAME       VARCHAR2(20)

SQL>
```

```

SQL>
SQL> insert into COACH values(
  2  'CH596', 'IND1221', 'GARY KISTERN'
  3  );

1 row created.

SQL> select * from coach;

COACH_ID          TEAM_ID          COACH_NAME
-----
CH596             IND1221         GARY KISTERN
CH417             IND1221         RAVI SHASTRI
CH140             AUS2174         JUSTIN LANGER
CH223             SA5412         OTTIS GIBSON
CH398             NZ5687         GARY STEAD
CH748             BAN9852         RUSSEL DOMINGO

6 rows selected.

SQL>
SQL> delete from coach where coach_id='CH596';

1 row deleted.

SQL> select * from coach;

COACH_ID          TEAM_ID          COACH_NAME
-----
CH417             IND1221         RAVI SHASTRI
CH140             AUS2174         JUSTIN LANGER
CH223             SA5412         OTTIS GIBSON
CH398             NZ5687         GARY STEAD
CH748             BAN9852         RUSSEL DOMINGO

SQL>

```

DELETION WITH EMBEDDED SELECT

```

delete from player where team_id in(select team_id from team where country_name='Australia');

```

```

SQL> set lines 150
SQL> set pagesize 500
SQL> select * from team;

TEAM_ID          TEAM_RANK TEAM_NAME          COUNTRY_NAME          NO_OF_WINS NO_OF_LOSES NO_OF_DRAWS NO_OF_BOWLERS NO_OF_BATSMANS
-----
TOTAL_MATCHES
IND1221          6          6          7          1 MEN IN BLUE          INDIA          5          1          0
AUS2174          6          5          6          4 KANGAROO          AUSTRALIA          3          3          0
SA5412          6          8          5          3 PROTEA          SOUTH AFRICA          3          2          1
NZ5687          6          6          7          2 BLACK CAPS          NEW ZEALAND          4          2          0

SQL> delete from player where team_id in(select team_id from team where country_name='SOUTH AFRICA');

1 row deleted.

SQL> select * from player;

PLAYER_ID          TEAM_ID          NO_OF_WORLD CUPS          BATTING_AVERAGE          NO_OF_SIXES          NO_OF_FOURS          NO_OF_TOTAL RUNS          NO_OF_T20
-----
NO_OF_ODI          NO_OF_TEST          NO_OF_WICKETS          TYPE_OF_BOWLER          ECONOMY          PLAYER_NAME
PLR75401          IND1221          23          56          7 fast          17          8          1          1
23          5
PLR17410          IND1221          120          74          1 medium          3          58          7          24
800          20
PLR74203          AUS2174          1          41          1 slow          1          67          10          39
463          140
PLR20147          NZ5687          10          52          1 legspin          1          12          1          3
85          74

SQL>

```

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.

```
SQL>
SQL> set serveroutput on
SQL> declare
  2 cursor details is
  3 select * from player;
  4 det details%rowtype;
  5 team_id varchar(30);
  6 begin
  7   open details;
  8   loop
  9     fetch details into det;
 10     exit when details%notfound;
 11     team_id:='&team_id';
 12     if(det.team_id=team_id) then
 13       dbms_output.put_line(' Player Name:'||det.player_name);
 14       dbms_output.put_line(' No of total runs:'||det.no_of_totalruns);
 15       dbms_output.put_line(' Batting Average'||det.batting_average);
 16       dbms_output.put_line(' Economy'||det.economy);
 17     else
 18       dbms_output.put_line('Team id did not match');
 19     end if;
 20   end loop;
 21 end;
 22 /
Enter value for team_id: IND1221
old 11: team_id:='&team_id';
new 11: team_id:='IND1221';
Player Name:Jasprit Bumrah
No of total runs:23
Batting Average8
Economy17
Player Name:MS Dhoni
No of total runs:800
Batting Average58
Economy3
Team id did not match
Team id did not match
Team id did not match
Team id did not match

PL/SQL procedure successfully completed.
SQL>
```

FUNCTION:

User wants to book the tickets of an upcoming match

Create a PL/SQL function to display the stadium name on entering the desired Match.

SQL Plus

```
SQL>
SQL> set serveroutput on;
SQL> declare
  2  p matches.match_id%type;
  3  tf matches.stadium%type;
  4  function get_stdname(matchid out matches.match_id%type, std out
  5  matches.stadium%type) return varchar is
  6  begin
  7  select stadium into std from matches where match_id='&matchid';
  8  return std;
  9  end;
 10  begin
 11  dbms_output.put_line('Stadium: '||get_stdname(p,tf));
 12  end;
 13  /
Enter value for matchid: MAT401
old 7: select stadium into std from matches where match_id='&matchid';
new 7: select stadium into std from matches where match_id='MAT401';
Stadium:Sardar Patel

PL/SQL procedure successfully completed.

SQL>
SQL>
SQL> set serveroutput on;
SQL> declare
  2  p matches.match_id%type;
  3  tf matches.stadium%type;
  4  function get_stdname(matchid out matches.match_id%type, std out
  5  matches.stadium%type) return varchar is
  6  begin
  7  select stadium into std from matches where match_id='&matchid';
  8  return std;
  9  end;
 10  begin
 11  dbms_output.put_line('Stadium: '||get_stdname(p,tf));
 12  end;
 13  /
Enter value for matchid: MAT501
old 7: select stadium into std from matches where match_id='&matchid';
new 7: select stadium into std from matches where match_id='MAT501';
Stadium: Wankhede

PL/SQL procedure successfully completed.

SQL>
```

Cursor, Trigger:-

Define two business rules appropriate for the database under consideration and implement the rules using trigger.

TRIGGER 1

When a team is eliminated do the necessary process and update the elimination table.

CODE:

```
create table elimination
(
teamid  varchar(10) primary key,
cntry_name varchar(15),
rankk  number(2),
teamName varchar(15),
noLoses number(2)
);
set serveroutput on
create or replace trigger trig2
after delete on team
referencing new as new old as old
for each row
begin
insert into elimination values (:OLD.team_id ,:OLD.country_name
,:OLD.team_rank ,:OLD.team_name,:OLD.no_of_loses);
END;
/

delete from team where team_id='BAN9852';
select *from elimination ;
```

OUTPUT

```
SQL>
SQL>
SQL> create table elimination
  2  (
  3  teamid  varchar(10) primary key,
  4  cntry_name varchar(15),
  5  rankk number(2),
  6  teamName varchar(15),
  7  noLoses number(2)
  8  );

Table created.

SQL> set serveroutput on
SQL> create or replace trigger trig2
  2  after delete on team
  3  referencing new as new old as old
  4  for each row
  5  begin
  6  insert into elimination values (:OLD.team_id ,:OLD.country_name
  7  ,:OLD.team_rank ,:OLD.team_name,:OLD.no_of_loses);
  8  END;
  9  /

Trigger created.
```

```
SQL> delete from team where team_id='BAN9852';

1 row deleted.

SQL> select * from elimination;

TEAMID      CNTRY_NAME      RANKK TEAMNAME      NOLOSES
-----
BAN9852     BANGLADESH      5  TIGERS      4

SQL>
```

TRIGGER 2

Due to some malpractices a team was banned for 2 years . After 2 years when it came back the board of cricket council order to change the team_ID because of some reasons

CODE:

```
Create or replace trigger reference1
after update on team
for each row
begin
update player set team_id=:new.team_id where
team_id=:old.team_id;
update coach set team_id=:new.team_id
where team_id=:old.team_id;
update captain set team_id=:new.team_id where
team_id=:old.team_id;
update plays set team_id=:new.team_id where
team_id=:old.team_id;
update wicket_keeper set team_id=:new.team_id where
team_id=:old.team_id;
end;
/
update team set team_id= 'AUS7895' where team_id='AUS2174';

select * from player;
```

OUTPUT

```
SQL> select * from player;
```

PLAYER_ID	TEAM_ID		NO_OF_WORLD CUPS		NUMBER_OF_MATCHES		BATTING_AVERAGE	NO_OF_SIXES	NO_OF_FOURS
NO_OF_TOTAL RUNS	NO_OF_T20	NO_OF_ODI	NO_OF_TEST	NO_OF_WICKETS	TYPE_OF_BOWLER	ECONOMY	PLAYER_NAME		
PLR75401	23	56	IND1221 23	5	7 fast	3	11	8 17 Jasprit Bumrah	1
PLR17410	800	74	IND1221 120	20	1 medium	2	13	58 3 MS Dhoni	24
PLR74203	463	41	AUS2174 210	140	1 slow	1	6	67 9 BRETT LEE	39
PLR45987	985	24	SA5412 63	65	1 medium-slow	3	4	99 11 DAVID MILLER	47
PLR20147	85	52	NZ5687 10	74	1 legspin	1	12	12 18 Kane Williamson	3
PLR65200	21	77	BAN9852 30	2	1 fast	2	9	4 17 Shakib Al Hassan	1

6 rows selected.


```

SQL>
SQL> Create or replace trigger reference1
2 after update on team
3 for each row
4 begin
5 update player set team_id=:new.team_id where
6 team_id=:old.team_id;
7 update coach set team_id=:new.team_id
8 where team_id=:old.team_id;
9 update captain set team_id=:new.team_id where
10 team_id=:old.team_id;
11 update plays set team_id=:new.team_id where
12 team_id=:old.team_id;
13 update wicket_keeper set team_id=:new.team_id where
14 team_id=:old.team_id;
15 end;
16 /

```

Trigger created.

```

SQL>
SQL>

```

```

SQL>
SQL> update team set team_id= 'AUS7895' where team_id='AUS2174';
1 row updated.

```

```
SQL> select * from team;
```

TEAM_ID	TEAM_RANK	TEAM_NAME	COUNTRY_NAME	NO_OF_WINS	NO_OF_LOSES	NO_OF_DRAWS	NO_OF_BOWLERS	NO_OF_BATSMANS
TOTAL_MATCHES								
IND1221	6	1 MEN IN BLUE	INDIA	5	1	0	6	7
AUS7895	6	4 KANGAROO	AUSTRALIA	3	3	0	5	6
SA5412	6	3 PROTEA	SOUTH AFRICA	3	2	1	8	5
NZ5687	6	2 BLACK CAPS	NEW ZEALAND	4	2	0	6	7

```
SQL> select * from player;
```

PLAYER_ID	TEAM_ID	NO_OF_WORLD CUPS	BATTING_AVERAGE	NO_OF_SIXES	NO_OF_FOURS	NO_OF_TOTAL RUNS	NO_OF_T20
NO_OF_ODI	NO_OF_TEST	NO_OF_WICKETS	TYPE_OF_BOWLER	ECONOMY	PLAYER_NAME		
PLR75401	IND1221	3	8	1	1	23	56
23	5	7 fast	17 Jasprit Bumrah				
PLR17410	IND1221	2	58	7	24	800	74
120	20	1 medium	3 MS Dhoni				
PLR74203	AUS7895	1	67	10	39	463	41
210	140	1 slow	9 BRETT LEE				
PLR45987	SA5412	3	99	4	47	985	24
63	65	1 medium-slow	11 DAVID MILLER				
PLR20147	NZ5687	1	12	1	3	85	52
10	74	1 legspin	18 Kane Williamson				

```
SQL>
```