DATABASE MANAGEMENT SYSTEM PROJECT

CRICKET MANAGEMENT SYSTEM

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ABSTRACT

The proposed Cricket Management system is an automated Management system built for cricket organizers. The proposed system allows the organizers to go through the data of various cricket teams worldwide. Less effort is required for maintaining the database. The margin of errors will be reduced and keeping track of participating teams will be a breeze.

The database contains details of teams, players, umpires, coaches among others. All useful information about a tournament can be found in the given database. It also contains a technical diagram, the Entity Relationship diagram.

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PROBLEM STATEMENT

The main aim of Cricket Management is to manage all the details of Cricket Matches, Team, Players, Schedules. The project is built at the administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Cricket tournaments. And to make it easy to access all information of a particular match, team, players, and other relative information.

ENTITIES AND ATTRIBUTES

1) **Team** is entity that has attributes:- team_id (primary key), wicket_keeper (multivalued attribute), team_name(not null), country_name, no_of_wins, no_of_loses, no_of_draws, no_of_bowlers, no_of_batsmans

2) **Players** is entity that has an attribute:- player_id (primary key) , team_id(foreign key), no_of_worldcups , number_of_matches (complex attribute) , 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

3) **Wicket keeper** is an entity that has attributes:- team_id(foreign key), wk_name

4) **Umpire** is an entity that has attributes:- umpire_id (primary key), umpire_name, no_of_matches, country

5) **Coach** is an entity that has attributes:- coach_id (primary key) , team_id (foreign key) , coach_name

6) **Captain** is an entity that has attributes:- captain_id (primary key), captain_name, team_id(foreign key), player_id), year_of_captaincy , no_of_wins

7) **Matches** is an entity that has attributes:- match_id (primary key), match_date date, match_time, team_1_name, team_2_name, loser , winner , stadium, umpire_id(foreign key)

8) Plays is a relationship whose all attributes are foreign keys:-team_id, match_id

9) Umpired_by is a relationship whose all attributes are foreign keys   :- match_id,umpire_id

CONSTRAINTS

Sr. No.	Table Name	Primary Key	Foreign Key
1	Team	team_id	-
2	Wicket_Keeper	-	team_id
3	Umpire	umpire_id	-
4	Player	player_id	-
5	Coach	coach_id	team_id
6	Captain	captain_id	team_id
7	Matches	match_id	umpire_id
8	Plays	-	team_id, match_id
9	Umpired_by	-	match_id, umpire_id

CARDINALITY

Team Has Players(1-N)
Here a team can have multiple players in it but a player can play from one team only. Hence, the relationship is one to many (1-N).

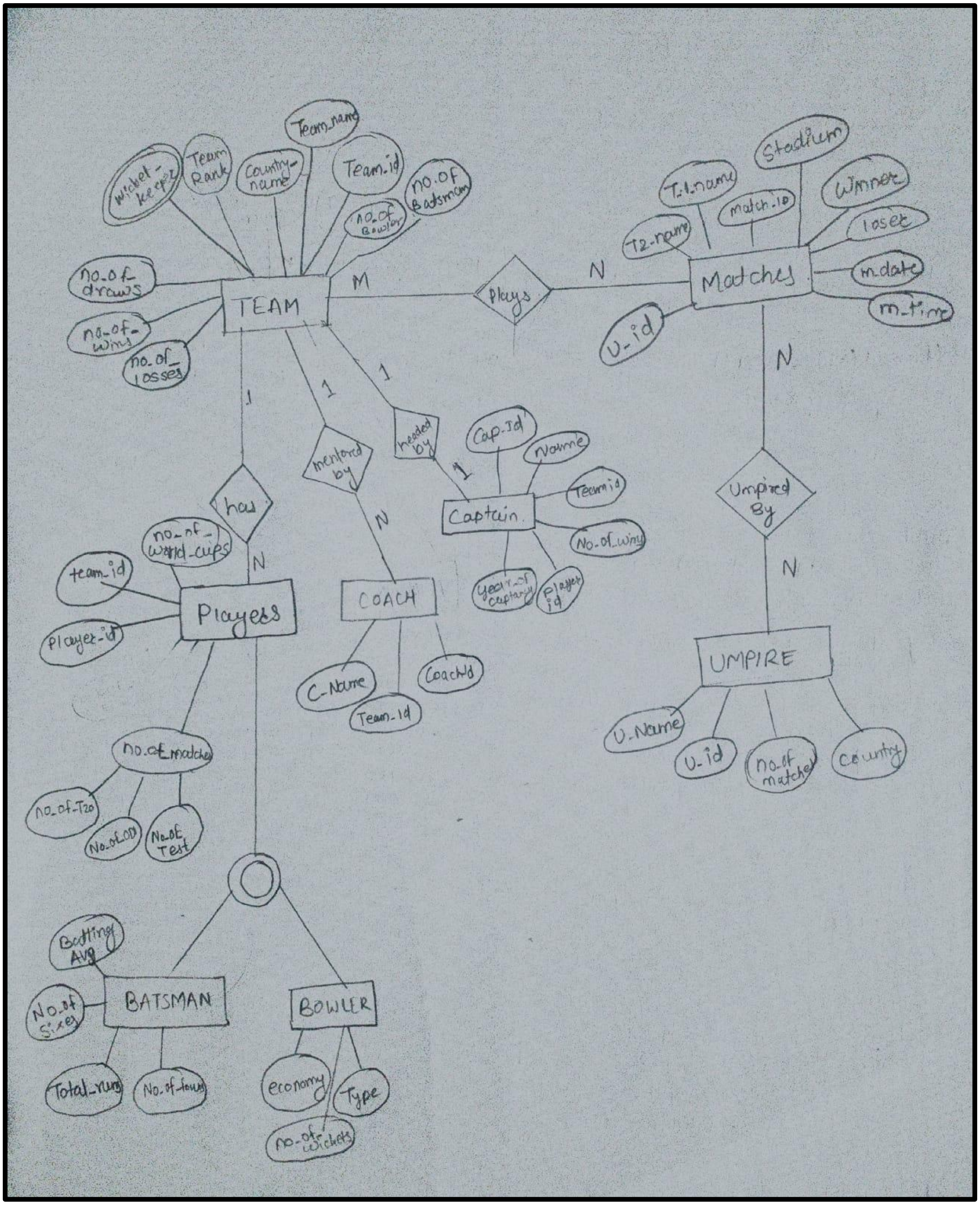
Team is Mentored by Coach(1-N)
Here a team can have multiple coaches mentoring them. For example, a team can have a batting coach, bowling coach, fitness coach. But a coach can only work for one team. Also, it is compulsory for a team to have a coach. Hence, the relationship is one to many (1-N).

Team is Headed by Captain(1-1)
Here a team can be headed only by one captain. Also, a captain can play for one team. So the relationship is one to one (1-1).

Team Plays Matches(M-N)
Here a team can play many matches. Also, a match is played by two teams. Hence, the relationship is many to many (M-N).

Match is Umpired by Umpire(M-N)
Here a match can be umpired by two umpires. Also, an umpire can umpire many matches. Hence, the relationship is many to many (M-N).

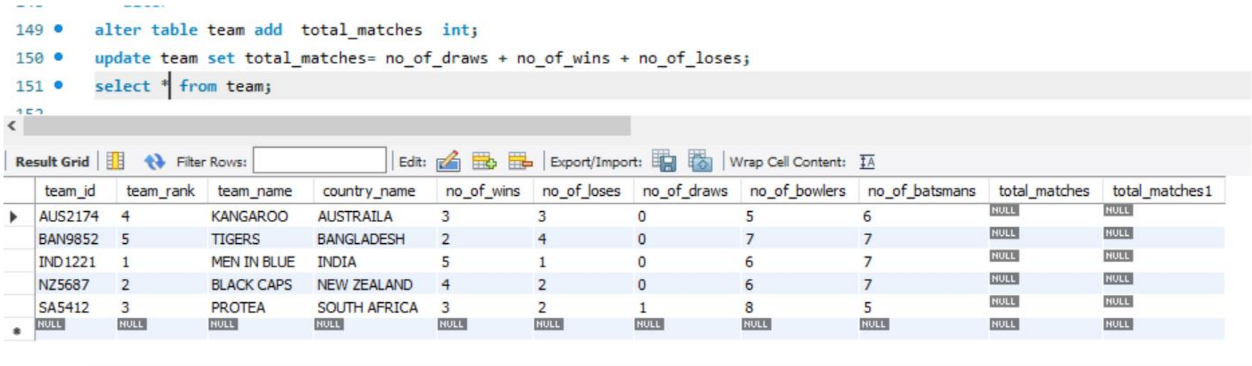
ER DIAGRAM


Team_name
Team Rank
wicket-keeper
Country-name
Team.id
no.of Batsman
no.of Bowler
no.of draws
TEAM
no-of-wins
no.of_losses
M
Plays
N
T.1.name
Stadium
match.ID
Winner
T2-name
loser
Matches
m.date
m_time
U-id
N
1
1
1
mentored by
headed by
1
Cap.Id
Name
Teamid
Captain
No-of-wins
year-of captancy
player id
Umpired By
N
has
N
no-of-world-cups
team_id
Players
player-id
N
COACH
C-Name
Team-Id
CoachId
UMPIRE
U-Name
U-id
no.of matches
country
no.of matches
no-of-T20
No-of-ODI
No-of Test
Batting Avg
BATSMAN
No-of Sixes
Total_runs
No-of-fours
BOWLER
economy
Type
no-of-wickets

QUERIES

- **Delete and update statement**

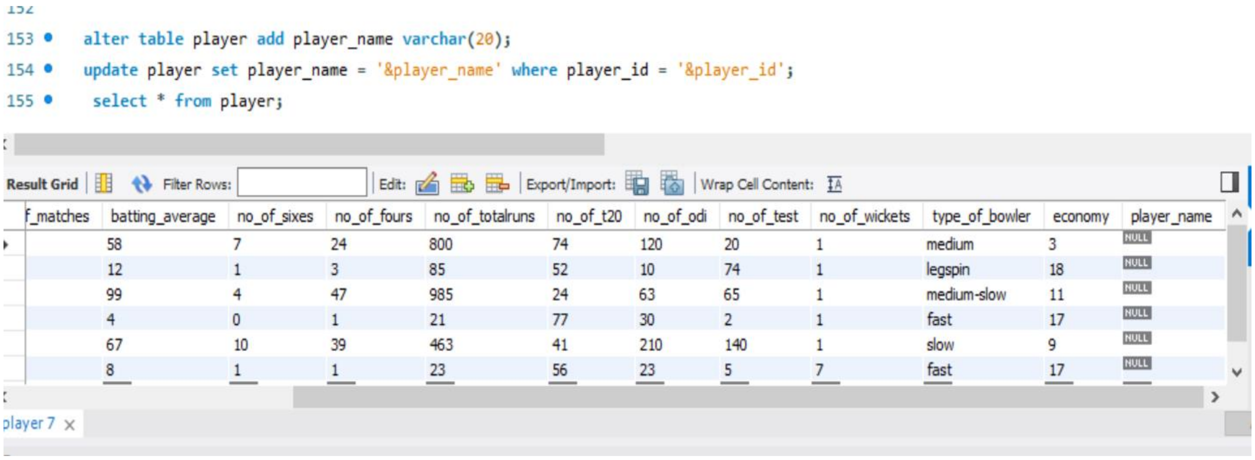
1) **Update : Add column of total matches in the table TEAM. Update the rows using total matches= number of WNS number of LOSES + number of DRAWS.**



```
alter table team add  total_matches  int;
update team set total_matches= no_of_draws + no_of_wins + no_of_loses;
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	total_matches1
AUS2174	4	KANGAROO	AUSTRAILA	3	3	0	5	6	NULL	NULL
BAN9852	5	TIGERS	BANGLADESH	2	4	0	7	7	NULL	NULL
IND1221	1	MEN IN BLUE	INDIA	5	1	0	6	7	NULL	NULL
NZ5687	2	BLACK CAPS	NEW ZEALAND	4	2	0	6	7	NULL	NULL
SA5412	3	PROTEA	SOUTH AFRICA	3	2	1	8	5	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

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

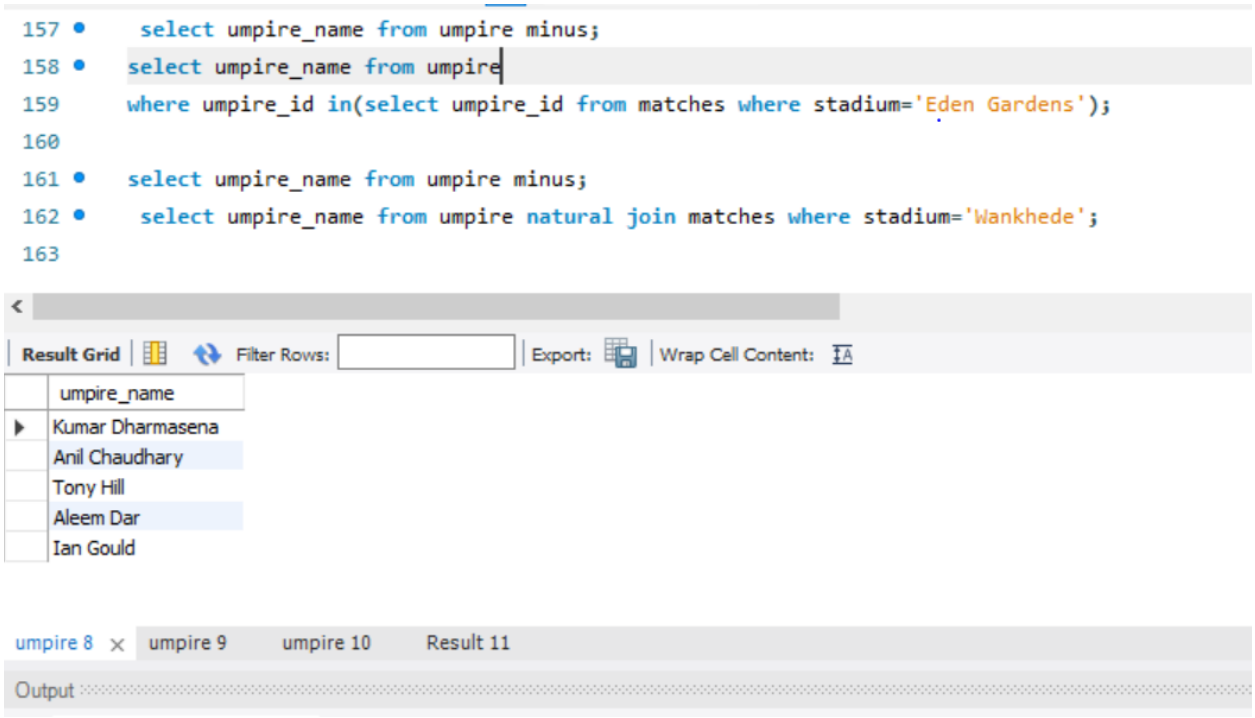


```
alter table player add player_name varchar(20);
update player set player_name = '&player_name' where player_id = '&player_id';
 select * from player;
```

f_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	player_name
	58	7	24	800	74	120	20	1	medium	3	NULL
	12	1	3	85	52	10	74	1	legspin	18	NULL
	99	4	47	985	24	63	65	1	medium-slow	11	NULL
	4	0	1	21	77	30	2	1	fast	17	NULL
	67	10	39	463	41	210	140	1	slow	9	NULL
	8	1	1	23	56	23	5	7	fast	17	NULL

- **JOIN/NESTING/SET OPERATIONS**

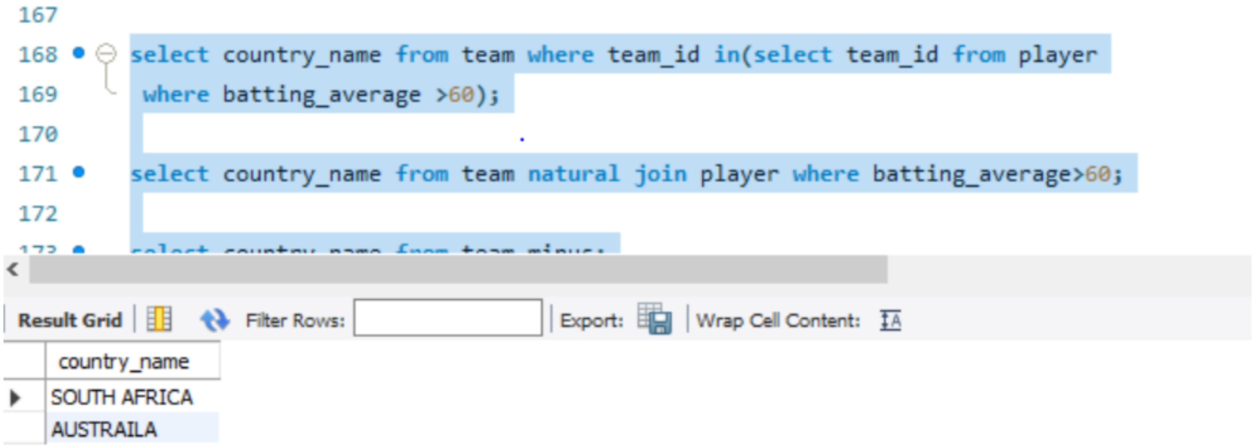
1) **Display the name of the umpires who have not umpired matches in eden gardens.**



```
 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 matches where stadium='Wankhede';

```

umpire_name
Kumar Dharmasena
Anil Chaudhary
Tony Hill
Aleem Dar
Ian Gould

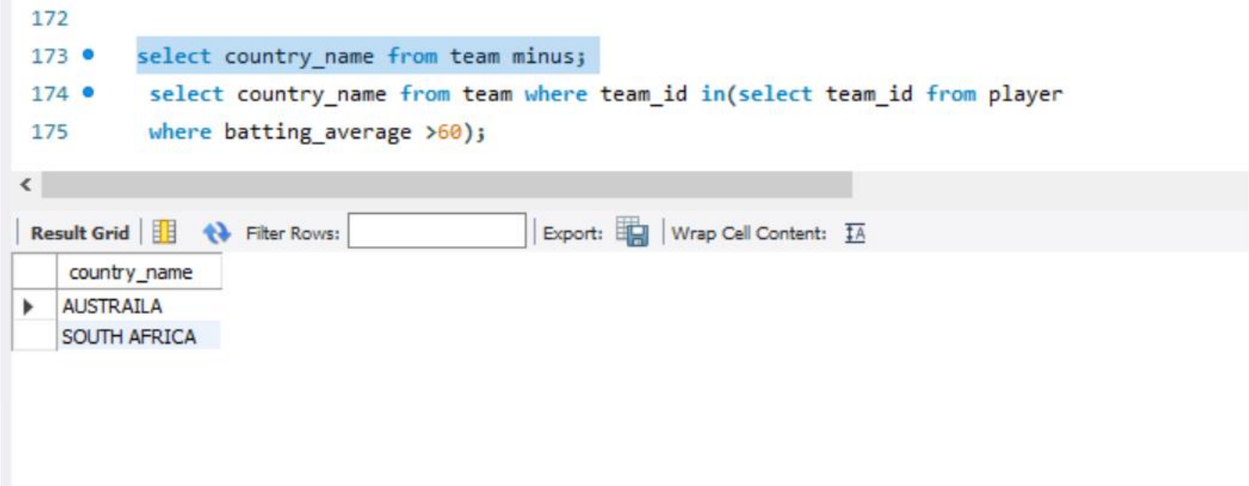
2a) - Display the country whose players have batting average greater than 60.



```

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;
```

country_name
SOUTH AFRICA
AUSTRAILA

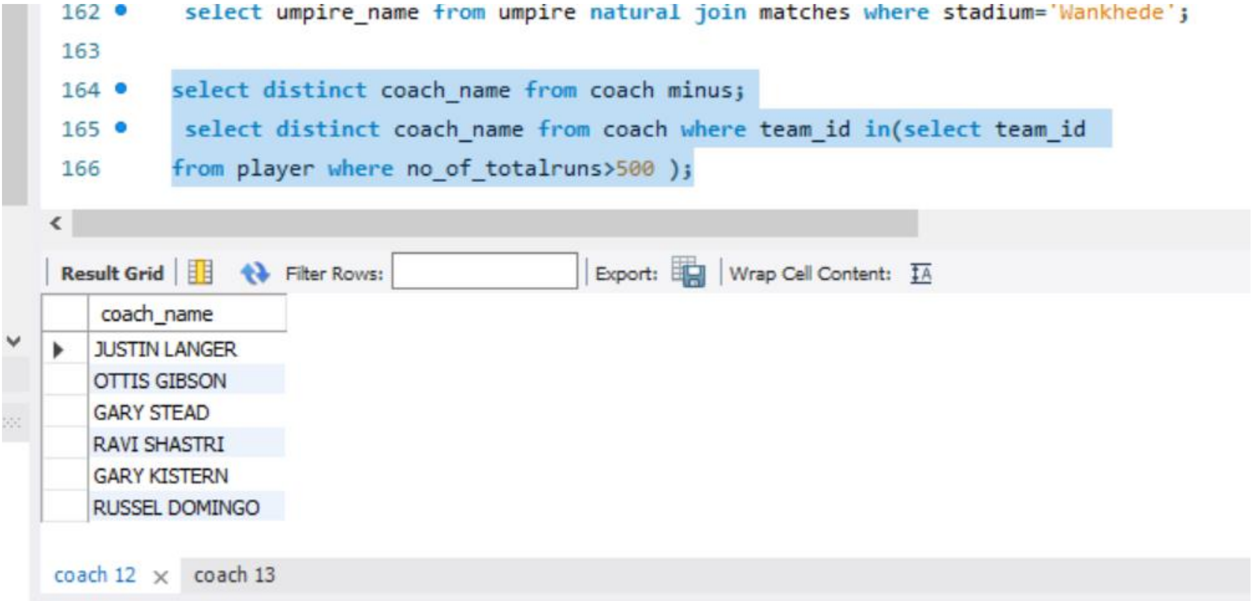
2b) -Display the country whose players donot have batting average greater than 60.



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

country_name
AUSTRAILA
SOUTH AFRICA

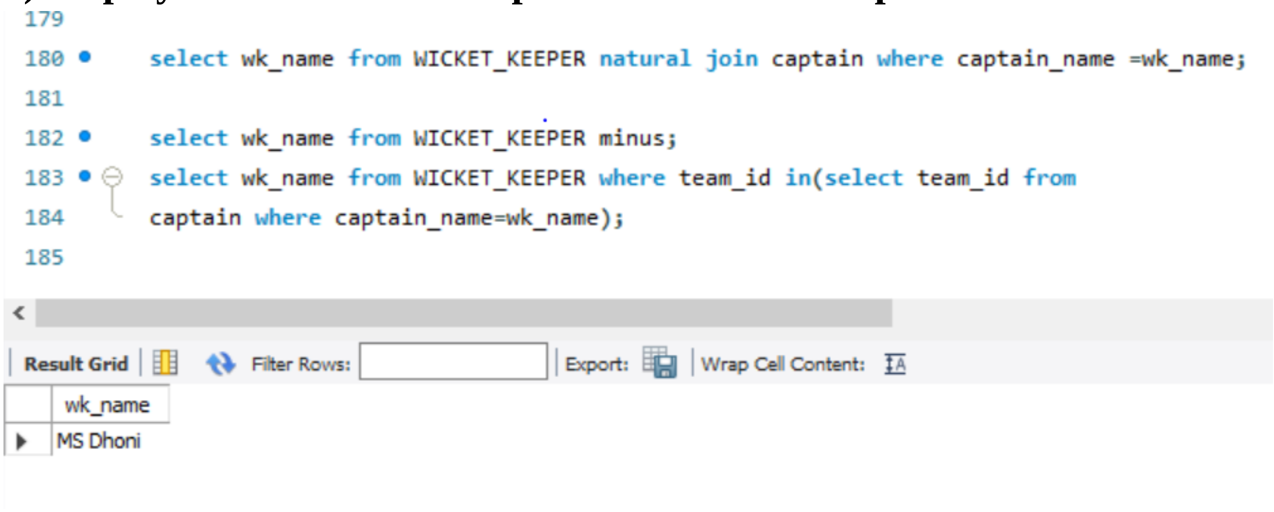
3. Display name of coach who has coached a player with total_runs greater than 500;



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

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

coach_name
JUSTIN LANGER
OTTIS GIBSON
GARY STEAD
RAVI SHASTRI
GARY KISTERN
RUSSEL DOMINGO

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

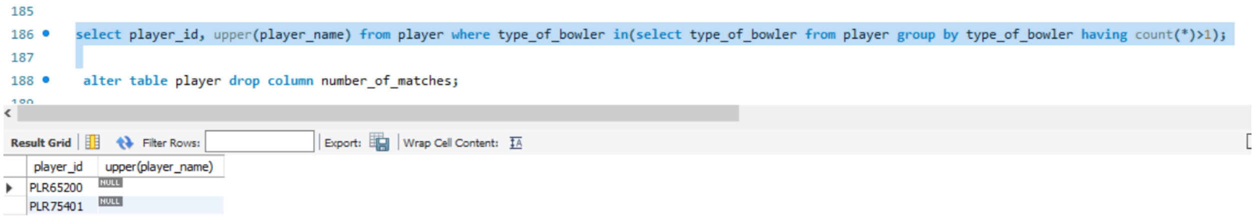


```
select wk_name from WICKET_KEEPER natural join captain where captain_name =wk_name;

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

wk_name
MS Dhoni

GROUP BY HAVING CLAUSE QUERY

1) Display the name of players who have same bowling action

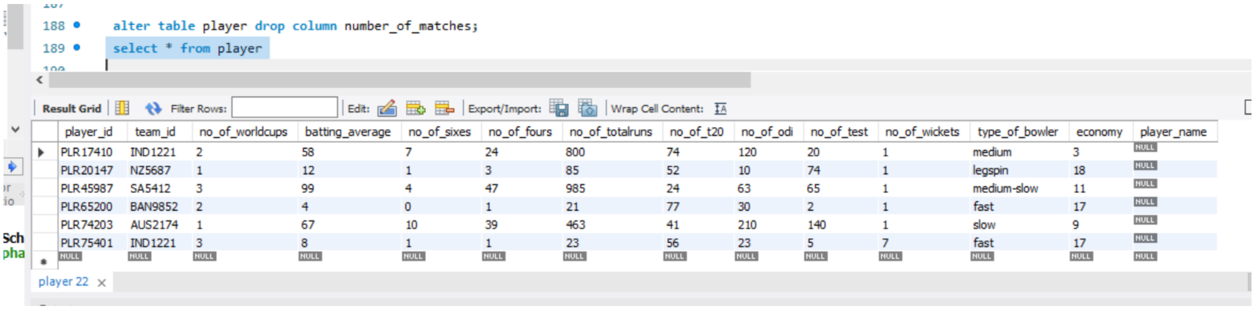


```
select player_id, upper(player_name) from player where type_of_bowler in(select type_of_bowler from player group by type_of_bowler having count(*)>1);

 alter table player drop column number_of_matches;
```

player_id	upper(player_name)
PLR65200	NULL
PLR75401	NULL

DELETE:

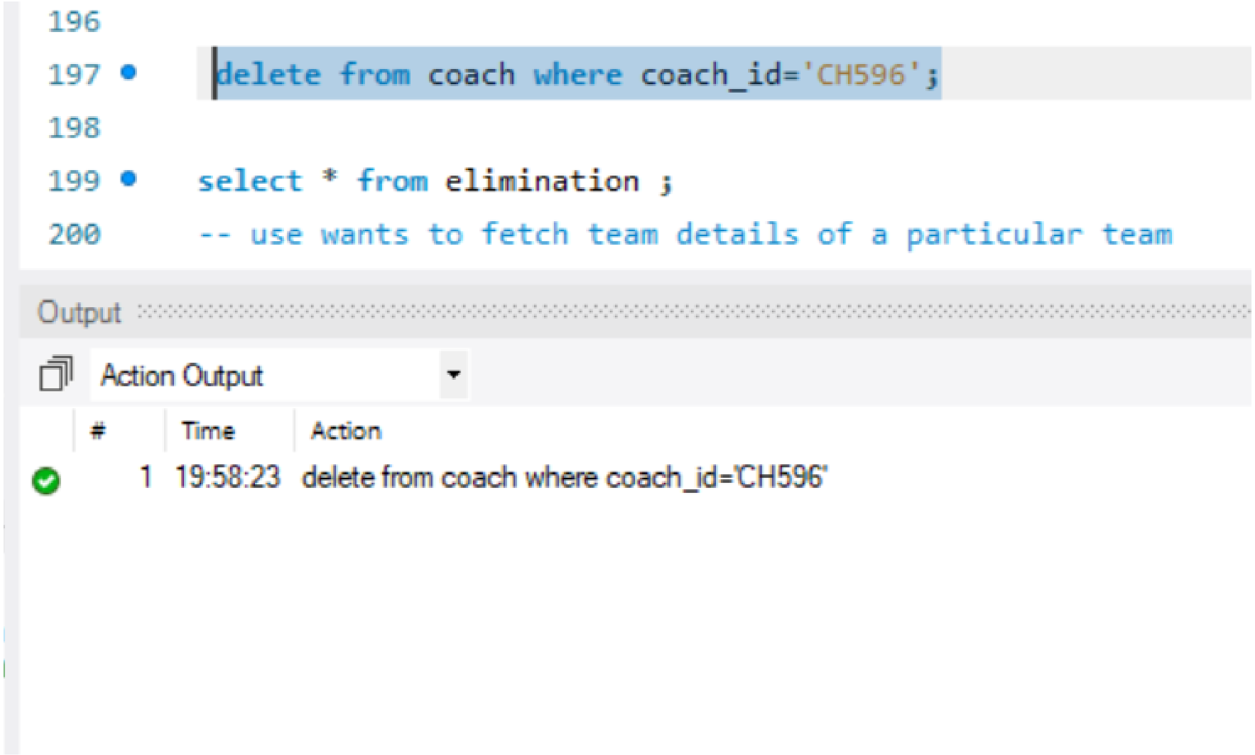
1. Deleting the column number_of_matches.



```
alter table player drop column number_of_matches;
select * from player
```

player_id	team_id	no_of_worldcups	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	player_name
PLR17410	IND1221	2	58	7	24	800	74	120	20	1	medium	3	NULL
PLR20147	NZ5687	1	12	1	3	85	52	10	74	1	legspin	18	NULL
PLR45987	SA5412	3	99	4	47	985	24	63	65	1	medium-slow	11	NULL
PLR65200	BAN9852	2	4	0	1	21	77	30	2	1	fast	17	NULL
PLR74203	AUS2174	1	67	10	39	463	41	210	140	1	slow	9	NULL
PLR75401	IND1221	3	8	1	1	23	56	23	5	7	fast	17	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Deletion with embedded select



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

select * from elimination ;
-- use wants to fetch team details of a particular team
```

```
    #   Time      Action
    1   19:58:23  delete from coach where coach_id='CH596'
```

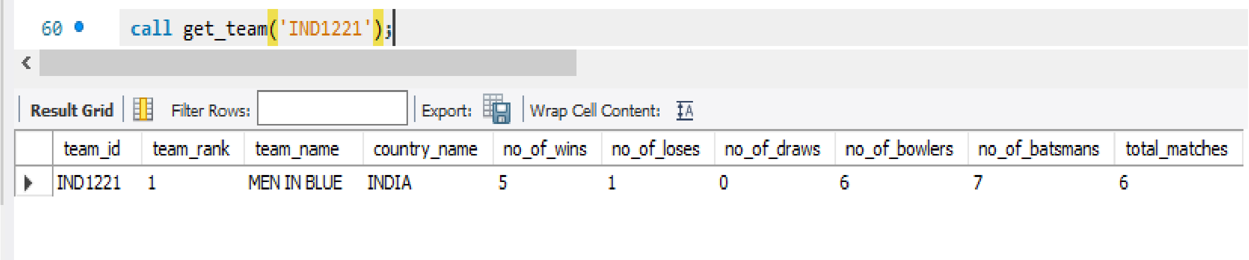
STORED PROCEDURES

1)User wants to predict the competition level of the next match by fetching the team details of the particular team. Use stored procedure to execute the same.

Code:

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `get_team`(IN team
varchar(30))
BEGIN
Select *  from team where team_id = team;
END
```

Output:



```
call get_team('IND1221');
```

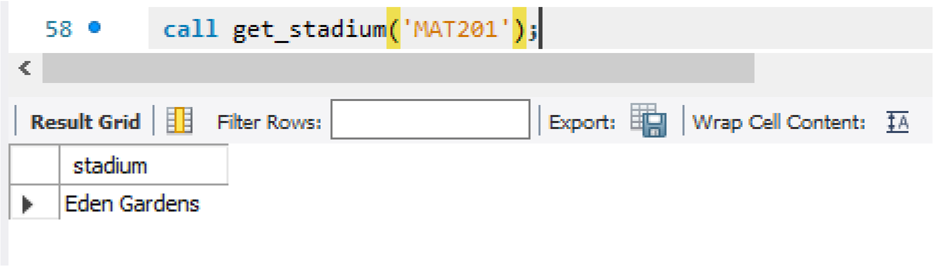
team_id	team_rank	team_name	country_name	no_of_wins	no_of_loses	no_of_draws	no_of_bowlers	no_of_batsmans	total_matches
IND1221	1	MEN IN BLUE	INDIA	5	1	0	6	7	6

2)User wants to book the tickets for an upcoming match. Create a stored procedure to display the stadium name on entering the desired Match.

Code:

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `get_stadium`(IN
matchnum varchar(30) )
BEGIN
select stadium from matches where match_id = matchnum;
END
```

Output:



```
call get_stadium('MAT201');
```

stadium
Eden Gardens

TRIGGERS

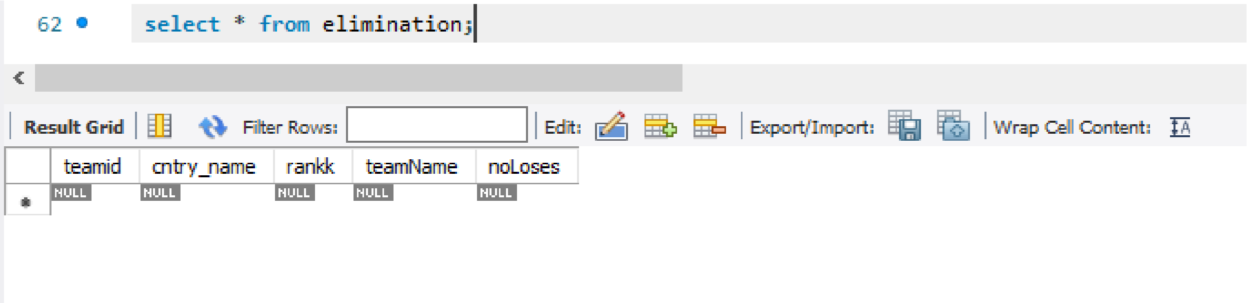
1)When a team is eliminated, do the necessary process and update the elimination table.

Code:

```
CREATE DEFINER=`root`@`localhost` TRIGGER
`elimination_AFTER_DELETE` AFTER DELETE ON `team` FOR EACH ROW
BEGIN
declare teamid varchar(10);
declare cntry_name varchar(15);
declare rankk int(2);
declare teamName varchar(15);
declare noLoses int(2);
set teamid = old.team_id;
set cntry_name = old.country_name;
set rankk = old.team_rank;
set teamName = old.team_name;
set noLoses = old.no_of_loses;
insert into elimination values(teamid, cntry_name, rankk, teamName, noLoses );
END
```

Output:

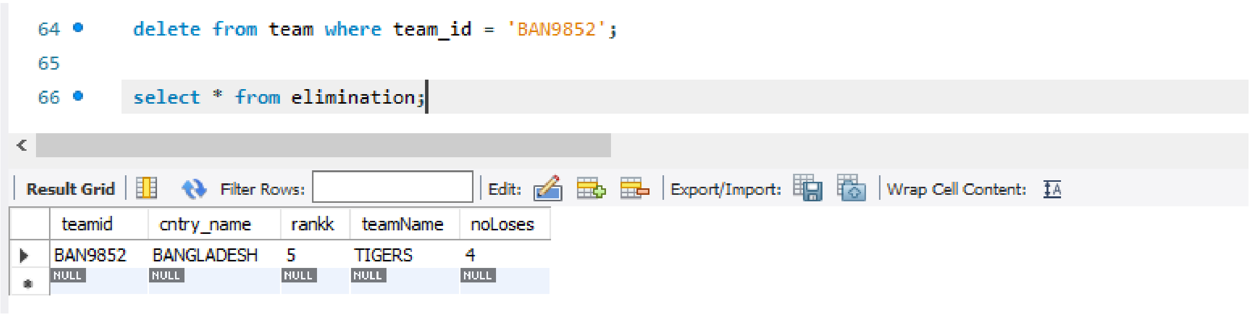
Before



```
select * from elimination;
```

teamid	cntry_name	rankk	teamName	noLoses
NULL	NULL	NULL	NULL	NULL

After



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

select * from elimination;
```

teamid	cntry_name	rankk	teamName	noLoses
BAN9852	BANGLADESH	5	TIGERS	4
NULL	NULL	NULL	NULL	NULL

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

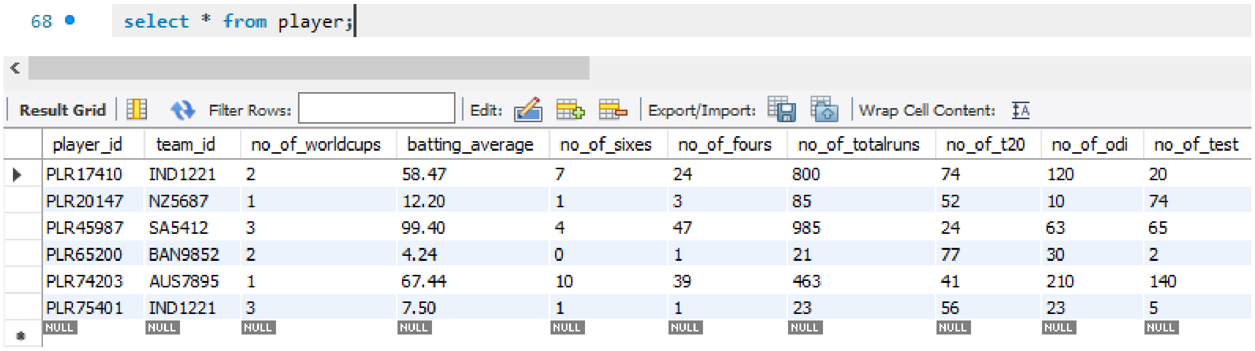
<u>Code</u>:

```
CREATE DEFINER=`root`@`localhost` TRIGGER `team_AFTER_UPDATE`
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
```

<u>Output</u>:

Before

Player Table

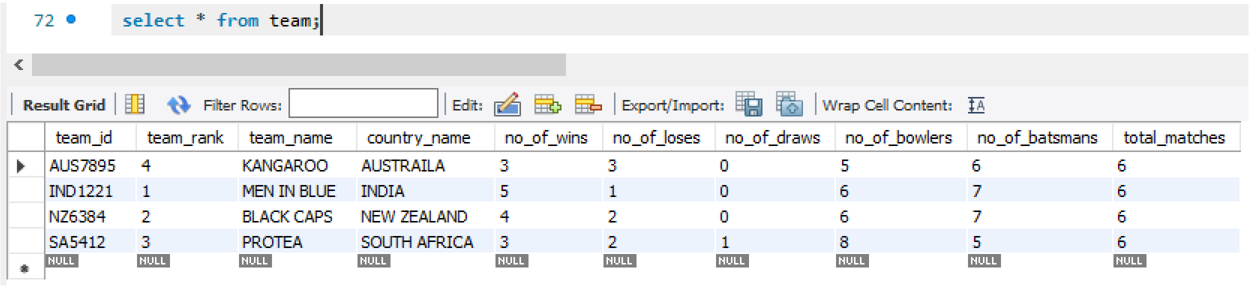


```
select * from player;
```

player_id	team_id	no_of_worldcups	batting_average	no_of_sixes	no_of_fours	no_of_totalruns	no_of_t20	no_of_odi	no_of_test
PLR17410	IND1221	2	58.47	7	24	800	74	120	20
PLR20147	NZ5687	1	12.20	1	3	85	52	10	74
PLR45987	SA5412	3	99.40	4	47	985	24	63	65
PLR65200	BAN9852	2	4.24	0	1	21	77	30	2
PLR74203	AUS7895	1	67.44	10	39	463	41	210	140
PLR75401	IND1221	3	7.50	1	1	23	56	23	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

After

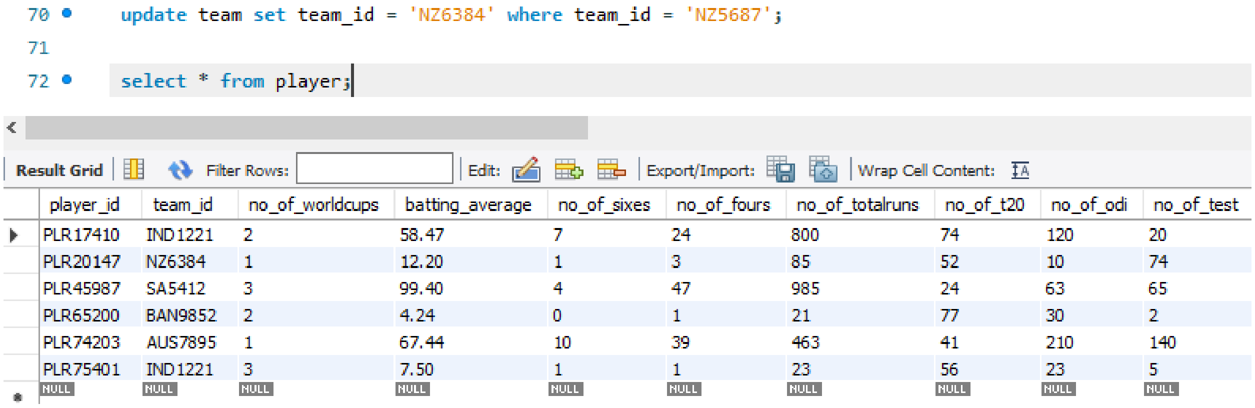
Team Table



```
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
AUS7895	4	KANGAROO	AUSTRAILA	3	3	0	5	6	6
IND1221	1	MEN IN BLUE	INDIA	5	1	0	6	7	6
NZ6384	2	BLACK CAPS	NEW ZEALAND	4	2	0	6	7	6
SA5412	3	PROTEA	SOUTH AFRICA	3	2	1	8	5	6
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Player Table



```
update team set team_id = 'NZ6384' where team_id = 'NZ5687';

select * from player;
```

player_id	team_id	no_of_worldcups	batting_average	no_of_sixes	no_of_fours	no_of_totalruns	no_of_t20	no_of_odi	no_of_test
PLR17410	IND1221	2	58.47	7	24	800	74	120	20
PLR20147	NZ6384	1	12.20	1	3	85	52	10	74
PLR45987	SA5412	3	99.40	4	47	985	24	63	65
PLR65200	BAN9852	2	4.24	0	1	21	77	30	2
PLR74203	AUS7895	1	67.44	10	39	463	41	210	140
PLR75401	IND1221	3	7.50	1	1	23	56	23	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL