

MS-IT SUMMER INTERNSHIP PC649

DATABASE TITLE: CRICKET MANABEMENT SYSTEM (CMS)

UNDER SUPERVISION OF PROF. P M JAT

NORMALIZATION PROOFS:

Team (Team_id, Team_name, Group_name, No_of_Batsman, No_of_Bowlers, No_of_Allrounder, No_of_wins, No_of_Loses)

Team_id \rightarrow {Team_name, Group_name, No_of_Batsman, No_of_Bowlers, No_of_Allrounder, No_of_wins, No_of_Loses}

Team relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Team_id**.

Team	
BCNF	Yes
Primary key	Team_id

Coach (Coach_id, Coach_Name, C_Country, Team_id)

Coach_id \rightarrow {Coach_Name, C_Country, Team_id}

Coach relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Coach_id**.

Coach	
BCNF	Yes
Primary key	Coach_Id

Players (Player_id, Player_Name, DOB, No_of_ODI, No_of_Test, no_of_T20, Batting_avg, Total_Runs, No_of_fours, No_of_sixes, Blw_Type, Economy, Year_of_Keeping, No_of_Wickets, Jersey No, Year_of_captaincy, isbatsman, isbowler, iswicketkeeper, iscaptain, Team_id)

Players	
1NF	No

Primary key	--
-------------	----

- Players relation is not in 1NF because jersey No is multivalued Attribute for this Attribute, we create a new relation R1 (Players Jersey No)
- **Players Jersey No** (Jersey No, Player_id)

Now, Players Jersey No relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e. {**Jersey No, Player_id**}.

R1:

Players Jersey No	
BCNF	Yes
Primary key	Jersey No, Player_id

Players (Player_id, Player_Name, DOB, No_of_ODI, No_of_Test, no_of_T20, Batting_avg, Total_Runs, No_of_fours, No_of_sixes, Blw_Type, Economy, Year_of_Keeping, No_of_Wickets, Year_of_captaincy, isbatsman, isbowler, iswicketkeeper, iscaptain, Team_id)

Players relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Player_id**.

R2:

Players	
BCNF	Yes
Primary key	Player_id

Umpire (U_id, Umpire_Name, Country)

$U_id \rightarrow \{Umpire_Name, Country\}$

Umpire relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **U_id**.

Umpire	
BCNF	Yes

Primary key	U_id
-------------	-------------

Matches (Match_id, Winner, loser)

Match_id → {Winner, loser}

Matches relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Match_id**

Matches	
BCNF	Yes
Primary key	Match_id

Scorecard (Scorecard_ID, No of 6's From Team 1, No of 4's From Team 1, No of 6's From Team 2, wickets_of_team1, wickets_of_team2, Score_of_Team_1, Score_of_Team_2, Match_id)

Scorecard_ID → {No of 6's From Team 1, No of 4's From Team 1, No of 6's From Team 2, wickets_of_team1, wickets_of_team2, Score_of_Team_1, Score_of_Team_2, Match_id}

Scorecard relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Scorecard_ID**.

Scorecard	
BCNF	Yes
Primary key	Scorecard_id

Played (Stadium, Match_Date, Team_id_1, Team_id_2, Match_id)

Team_id_1, Team_id_2, Match_id → {Stadium, Match_Date}

Played relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Team_id_1, Team_id_2, Match_id**.

Played	
BCNF	Yes
Primary key	Team_id_1, Team_id_2, Match_id

Umpired by (U_ID, Match_id)

Umpired by relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **U_ID, Match_id**.

Scored (Highest_Scored_Player, Player_id, Scorecard_ID)

Player_id, Scorecard_ID \rightarrow {Highest_Scored_Player}

Scored by relation is in **BCNF** form since the attributes to the left of all function dependencies are **Primary key** i.e., **Player_id, Scorecard_ID**.

Scored	
BCNF	Yes
Primary key	Player_id, Scorecard_ID

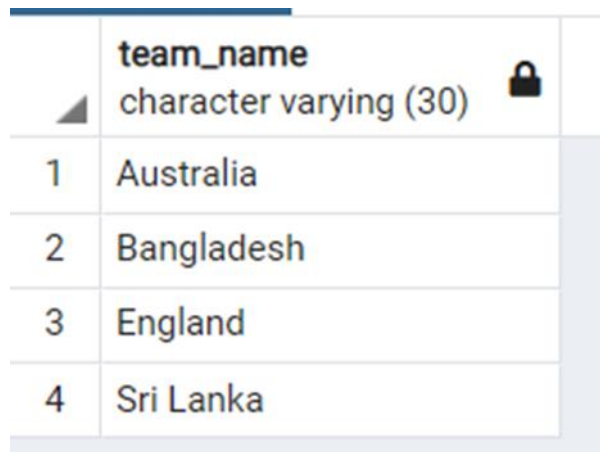
QUERIES

QUERY: 1 (A)

Display the country whose players have batting average greater than 90.

```
SELECT DISTINCT TEAM_NAME
FROM TEAM
NATURAL JOIN PLAYERS
WHERE BATTING_AVG > 90;
```

SCREENSHOT:



The screenshot shows a database query result in a table format. The table has two columns: an index column and a column named 'team_name'. The 'team_name' column is described as 'character varying (30)' and has a lock icon. The table contains four rows of data, indexed 1 through 4.

	team_name character varying (30) 🔒
1	Australia
2	Bangladesh
3	England
4	Sri Lanka

QUERY: 1 (B)

Display the country whose players have batting average less than 30.

```
SELECT DISTINCT TEAM_NAME
FROM TEAM
NATURAL JOIN PLAYERS
WHERE BATTING_AVG < 30;
```

SCREENSHOT:






	team_name character varying (30) 
1	Bangladesh
2	Scotland
3	Pakistan
4	Afghanistan
5	India
6	South Africa
7	West Indies

QUERY: 2

Display name of coach and name of player who has coached a player with total runs greater than 9500.

```
SELECT DISTINCT
    COACH_F_NAME,
    COACH_L_NAME,
    F_NAME AS PLAYER_F_NAME,
    L_NAME AS PLAYER_L_NAME
FROM COACH
INNER JOIN PLAYERS ON COACH.TEAM_ID = PLAYERS.TEAM_ID WHERE
(TOTAL_RUNS > 9500);
```

SCREENSHOT:

	Data Output	Messages		
	 coach_f_name character varying (20) 	coach_l_name character varying (20) 	player_f_name character varying (20) 	player_l_name character varying (20) 
1	Russell	Domingo	Tamim	Iqbal
2	Misbah ul	Haq	Asif	Ali
3	Russell	Domingo	DAS	Liton
4	Mickey	Arthur	kusal	perera
5	Lance	Klusener	Najibullah	Zadran
6	Shane	Burger	Kyle	Coetzer
7	Lance	Klusener	Mohammad	Nabi
8	Ravi	Shastri	Virat	Kohli
9	Justin	Langer	Matthew	Wade
10	Chris	Silverwood	jos	Buttler
11	Chris	Silverwood	Ben	Stokes
12	Phil	Simmons	Fafdes	Plessis
13	Lance	Klusener	Rashid	Khan
14	Phil	Simmons	Aides	Markram
15	Mickey	Arthur	angelo	mathews
16	Ravi	Shastri	Rohit	Sharma
17	Russell	Domingo	Shakib Al	Hasan
18	Misbah ul	Haq	Babar	Azam
19	Mark	Boucher	Quinton-de	Kock
20	Mickey	Arthur	dIMUTH	karanarathe

QUERY: 3

Number of players used by each team.

```
SELECT COUNT(*) AS TOTAL_TEAM_PLAYER, TEAM_NAME
FROM PLAYERS
      INNER JOIN TEAM
      ON PLAYERS.TEAM_ID=TEAM.TEAM_ID
GROUP BY TEAM_NAME;
```

SCREENSHOT:



A screenshot of a database table with two columns: 'total_player' (bigint) and 'team_name' (character varying (30)). The table contains 10 rows of data, numbered 1 to 10 in the first column. The team names are listed in the second column.

	total_player bigint	team_name character varying (30)
1	11	Bangladesh
2	11	Sri Lanka
3	11	England
4	11	Afghanistan
5	11	India
6	11	South Africa
7	11	Scotland
8	11	Pakistan
9	11	Australia
10	11	West Indies

QUERY: 4

Display All team with number of won match count.

```
SELECT TEAM_NAME,  
       COUNT(MATCHES) AS WINS  
FROM TEAM  
LEFT JOIN MATCHES ON (WINNER = TEAM_NAME)  
GROUP BY TEAM_NAME  
ORDER BY WINS DESC;
```

SCREENSHOT:

team_name	wins
character varying (30)	bigint
Sri Lanka	2
South Africa	1
Bangladesh	1
India	1
West Indies	1
Scotland	1
Australia	1
Pakistan	0
England	0
Afghanistan	0

QUERY: 5

select team name, player id, player name whose any of the players scored more than 25000+ runs and 500+ sixes.

```

SELECT TEAM_NAME,
       PLAYER_ID,
       F_NAME,
       L_NAME
FROM TEAM
JOIN PLAYERS ON TEAM.TEAM_ID = PLAYERS.TEAM_ID
WHERE PLAYERS.TOTAL_RUNS > 25000
       AND PLAYERS.NO_OF_SIXES > 500

```

SCREENSHOT:

Data Output		messages		
	team_name character varying (30) 🔒	player_id character varying (30) 🔒	f_name character varying (20) 🔒	L_name character varying (20) 🔒
1	Afghanistan	AFG001	Rashid	Khan
2	Bangladesh	BAN005	DAS	Liton
3	Sri Lanka	SL005	kusal	perera

QUERY: 6

List all the team captain with his team.

```
SELECT F_NAME,  
       L_NAME, TEAM_NAME  
FROM PLAYERS  
JOIN TEAM ON PLAYERS.TEAM_ID = TEAM.TEAM_ID  
WHERE PLAYERS.ISCAPTAIN = TRUE;
```

SCREENSHOT:




	f_name character varying (20)	L_name character varying (20)	team_name character varying (30)
1	Virat	Kohli	India
2	Babar	Azam	Pakistan
3	Mohammad	Nabi	Afghanistan
4	Michdel	Leask	Scotland
5	Dwayne	Pretorius	West Indies
6	Aaron	Finch	Australia
7	Eoin	Morgan	England
8	Mushfiqur	Rahim	Bangladesh
9	iman-ul	Haq	South Africa
10	kusal	perera	Sri Lanka

QUERY: 7

List all the player with age greater than 45 years.

```
SELECT F_NAME,
       L_NAME, DOB,
       AGE(CURRENT_DATE,DATE(DOB)) AS AGE
FROM PLAYERS
WHERE AGE(DOB) > interval '45 years';
```

SCREENSHOT:

	f_name character varying (20) 	L_name character varying (20) 	dob date 	player_id [PK] character varying (30) 	age interval
1	Wahab	Riaz	1973-10-06	PAK011	48 years
2	Rashid	Khan	1975-10-04	AFG001	46 years
3	Najibullah	Zadran	1975-05-01	AFG005	47 years
4	Omer	Hussain	1970-05-09	SC004	52 years
5	iman-ul	Haq	1974-04-09	WI004	48 years
6	imran	Tahir	1975-10-06	WI011	46 years
7	Kane	Richardson	1973-02-11	AUS004	49 years
8	Eoin	Morgan	1973-02-11	ENG004	49 years
9	iman-ul	Haq	1974-04-09	SA004	48 years
10	imran	Tahir	1975-10-06	SA011	46 years

QUERY: 8

Count total number of matches played in “Wankhede” Stadium in current season.

```
SELECT 'Wankhede' AS NAME,
       COUNT(*) AS TOTAL_MATCHES
FROM MATCHES
JOIN PLAYED ON MATCHES.MATCH_ID = PLAYED.MATCH_ID
WHERE STADIUM = 'Wankhede';
```

SCREENSHOT:

	name text	total_matches bigint
1	Wankhede	3

QUERY: 9

List all players of india whose name start with A and his jersey_no.

```

SELECT F_NAME,
       L_NAME, JERSEY_NO
FROM PLAYERS
JOIN TEAM ON TEAM.TEAM_ID = PLAYERS.TEAM_ID
JOIN PLAYERSJERSEY_NO ON PLAYERS.PLAYER_ID =
PLAYERSJERSEY_NO.PLAYER_ID
WHERE F_NAME like 'K%'
       AND TEAM.TEAM_NAME = 'India';

```

SCREENSHOT:

	f_name character varying (20)	l_name character varying (20)	jersey_no integer
1	KL	Rahul	17
2	KL	Rahul	1

QUERY: 10

List the match wise total Score for the current season.

```
SELECT MATCH_ID,  
       SCORE_OF_TEAM_1 + SCORE_OF_TEAM_2 AS SCORE  
FROM SCORECARD  
ORDER BY SCORE DESC
```

SCREENSHOT:

	match_id character varying (30) 🔒	score integer 🔒
1	T2022M03	362
2	T2022M02	274
3	T2022M05	250
4	T2022M08	250
5	T2022M04	250
6	T2022M01	239
7	T2022M07	187
8	T2022M06	179

QUERY: 11

List of all-rounder information of Team India

```
SELECT *
FROM PLAYERS
WHERE TEAM_ID = 'T20202111'

      AND ISBATSMAN

      AND ISBOWLER
```

SCREENSHOT:

	player_id [PK] character varying (30)	f_name character varying (20)	l_name character varying (20)	dob date	no_of_odi integer	no_of_test integer	no_of_t20 integer	batting_avg numeric (4,2)	total_runs integer	no_of_fours integer	no_of_sixes integer	bh ch
1	IND006	Hardik	Pandya	1993-10-11	63	11	54	20.50	3000	75	55	m
2	IND007	Ravindra	Jadeja	1988-12-06	168	56	55	17.10	5014	168	32	sf

QUERY: 12

How many Bowler/Batsman/Wicketkeeper/All Rounder/ Players/Teamin current season

```
SELECT 'Bowler : ' || COUNT(ISBOWLER) AS INFO
FROM PLAYERS
WHERE ISBOWLER = 'true'

      AND ISBATSMAN = 'false';
```

SCREENSHOT:

Data Output		Message
	info	
	text	
1	Bowler : 40	

--Total Batsman

```
SELECT 'Batsman : ' || COUNT(ISBATSMAN) AS INFO
FROM PLAYERS
WHERE ISBATSMAN = 'true'
      AND ISBOWLER = 'false';
```

--Total Wicketkeeper

```
SELECT 'Wicketkeeper : ' || COUNT(ISWICKETKEEPER) AS INFO
FROM PLAYERS
WHERE ISWICKETKEEPER = 'true';
```

--Total All Rounder

```
SELECT 'All Rounder : ' || COUNT(ISBOWLER) + COUNT (ISBATSMAN) AS
INFO
FROM PLAYERS
WHERE ISBOWLER = 'true'
      AND ISBATSMAN = 'true';
```

--Total players

```
SELECT 'All players : ' || COUNT(PLOYER_ID) AS INFO FROM PLAYERS
```



```
--Total Team
```

```
SELECT COUNT(*) AS TOTA_TEAM FROM TEAM;
```

QUERY: 13

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

```
SELECT F_NAME,  
       L_NAME, TEAM_NAME  
FROM PLAYERS  
JOIN TEAM ON PLAYERS.TEAM_ID = TEAM.TEAM_ID  
WHERE ISWICKETKEEPER = 'true'  
       AND ISCAPTAIN = 'true';
```

SCREENSHOT:

	f_name character varying (20) 🔒	l_name character varying (20) 🔒	team_name character varying (30) 🔒
1	Michdel	Leask	Scotland
2	kusal	perera	Sri Lanka

QUERY: 14

Display playerId, team_ID, Playername how many time hit highest run from his time in current season.

```
SELECT COUNT(*) AS HIGHEST_RUN_PLAYER,  
       PLAYER_ID,  
       F_NAME,  
       L_NAME,  
       TEAM_ID  
FROM PLAYERS  
JOIN SCORED ON PLAYERS.PLAYER_ID = SCORED.PLAYERID  
GROUPBY PLAYER_ID  
ORDER BY HIGHEST_RUN_PLAYER DESC;
```

SCREENSHOT:

	highest_run_player bigint	player_id [PK] character varying (30)	f_name character varying (20)	L_name character varying (20)	team_id character varying (30)
1	2	SL005	kusal	perera	T20222105
2	2	AUS001	Steve	Smith	T20222101
3	2	IND001	Virat	Kohli	T20222111
4	1	ENG005	jos	Buttler	T20222102
5	1	BAN002	Shakib Al	Hasan	T20222103

QUERY: 15

Display which player not debut in test format.

```
SELECT PLAYER_ID, F_NAME, L_NAME, TEAM_NAME
FROM PLAYERS
JOIN TEAM ON PLAYERS.TEAM_ID = TEAM.TEAM_ID
WHERE NO_OF_TEST IS NULL;
```

SCREENSHOT:

	player_id character varying (30) 🔒	f_name character varying (20) 🔒	L_name character varying (20) 🔒	team_name character varying (30) 🔒
1	IND008	Yuzvendra	Chahal	India
2	PAK008	Hasam	Ali	Pakistan
3	SC008	jes	Duminy	Scotland
4	WI008	jp	Duminy	West Indies
5	AUS008	Marcus	Stoinis	Australia
6	AFG008	jes	Duminy	Afghanistan
7	ENG008	Jofra	archer	England
8	BAN008	Mehidy	Hasan	Bangladesh
9	SA008	jp	Duminy	South Africa
10	SL008	jeffrey	vandersay	Sri Lanka