.

Project Report On

IPL Database Management System

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of
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In
Information Technology

At

under the guidance of

Ms. J R Shruti

Department of Information Technology

National Institute of Technology Karnataka, Surathkal.

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CERTIFICATE

This is to certify that the project entitled **"IPL Database Management System"** has been submitted by '**Goutham VR', 'Karan Panchal', 'Tushar Jyoti Sahariah'**, students of third year B.Tech (IT), National Institute of Technology Karnataka, Surathkal, during the odd semester of the academic year 2021 - 2022, in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Information Technology at NITK Surathkal.

(Signature of the Guide)

Place:

Date:

Department of Information Technology

National Institute of Technology Karnataka, Surathkal

Course code: IT 252

Course Title: Database Systems

Title of the Project: ***IPL Database Management System***

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ABSTRACT

In a country like India where cricket is not just a game but a religion, what else can give the action hungry fans a more delicious treat than a super-fast game of the domestic cricket league, IPL? The popularity of the game attracts a lot of revenue as advertising in a IPL match is seen by companies as a great investment made to penetrate the vast Indian market. With so much on stake, it is very important for the teams to focus on their games, strategies and their weakness and strengths as well as for organizing bodies like BCCI for the peaceful conduct of matches and tournaments adding to the brand value of the game. Therefore, it is very important to store and maintain the related data mentioned above.

This project aims to design a database system that keeps track of the status of players, their respective teams and their performances, coaching staff, supervision, and the tournaments being conducted their venues and media coverage, etc. A statistics company like “Stato-Inferno” chips in to provide these services.

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Problem statement

In a country like India where cricket is not just a game but a religion, what else can give the action hungry fans a more delicious treat than a super-fast game of the domestic cricket league, IPL? The popularity of the game attracts a lot of revenue as advertising in a IPL match is seen by companies as a great investment made to penetrate the vast Indian market. With so mjuch on stake, it is very important for the teams to focus on their games, strategies and their weakness and strengths as well as for organising bodies like BCCI for the peaceful conduct of matches and tournaments adding to the brand value of the game. Therefore, it is very important to store and maintain the related data mentioned above.

This project aims to design a database system that keeps track of the status of players, their respective teams and their performances, coaching staff, supervision, and the tournaments being conducted their venues and media coverage, etc. A statistics company like “Stato-Inferno” chips in to provide these services.

The requirements are:

All the players are grouped into three categories (entities) -

1. Batsmen
2. Bowlers
3. All-rounders

Each player has a personal profile encompassing information about their name, age and matches played . Important statistics have been covered with attributes like -

1. For Batsmen: Batting average, strike rate, centuries, total runs, innings played, etc. for the batsmen.
2. For Bowlers: Bowling average, strike rate, 5 wicket hauls, total wickets taken, matches played, etc. for bowlers
3. For all-rounders: a combination of the above-mentioned attributes.

All the teams will include a combination of the above three categories of players with some people in the role of

1. Captain,
2. Vice-captain
3. Wicket-keeper

The different venues and the stadiums are also included in the database along with the capacity of the stadium.

The details of the injury recovery staff which include a physiotherapist is also included, The coaching staff along with their field of expertise(bowling, fielding etc) is mentioned in the database. The user can access and collect data about the required information whenever he/she wants.

ACTORS

People who interact with the database are:

- ❖ Media
- ❖ Public
- ❖ Boards
- ❖ Players

Some sample queries

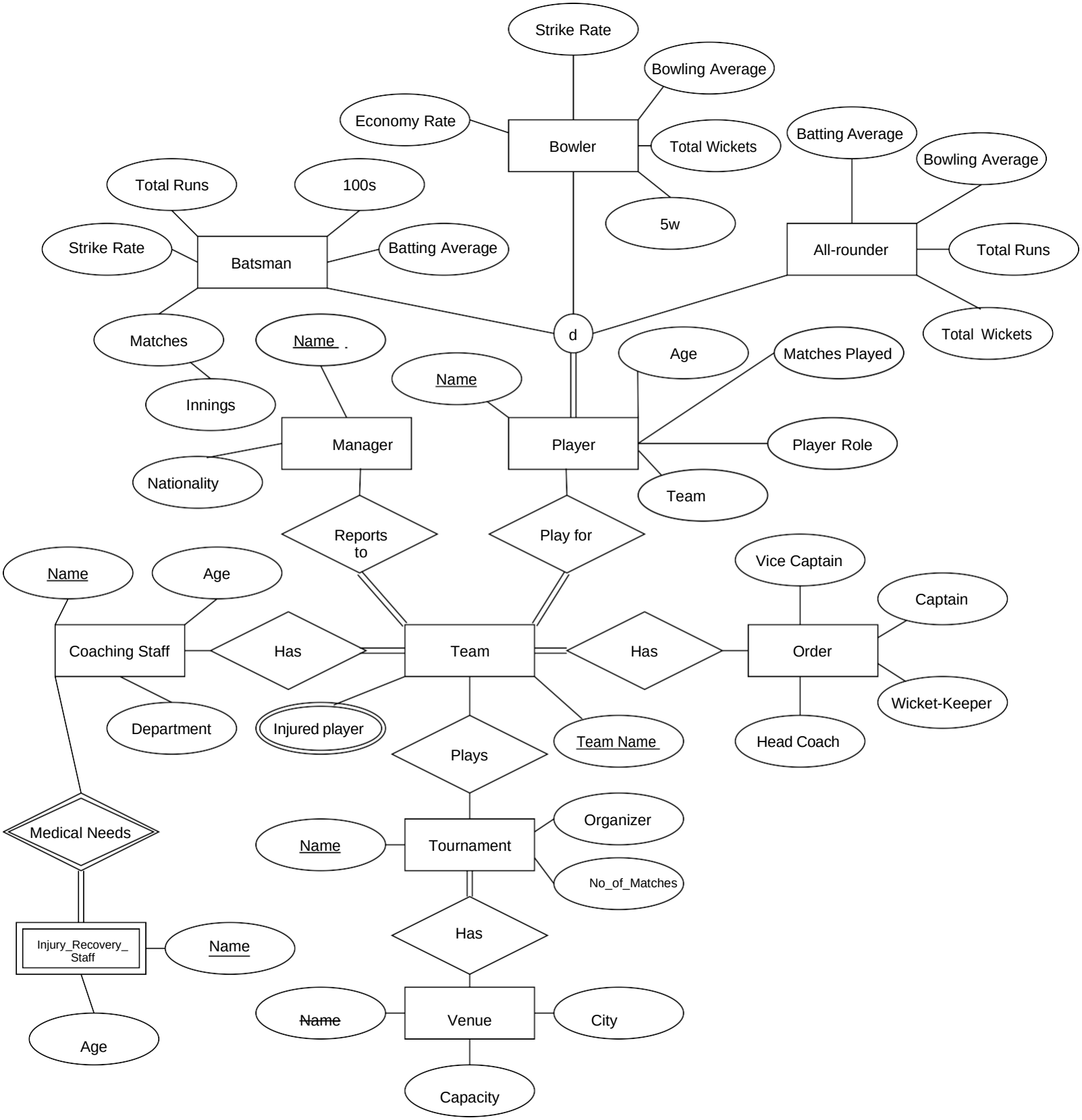
Media and Public can:

- See list of teams selected.
- Check players in a team.
- Obtain statistics of all players.
- Obtain the list of tournaments.
- Get the list of venues of a tournament.

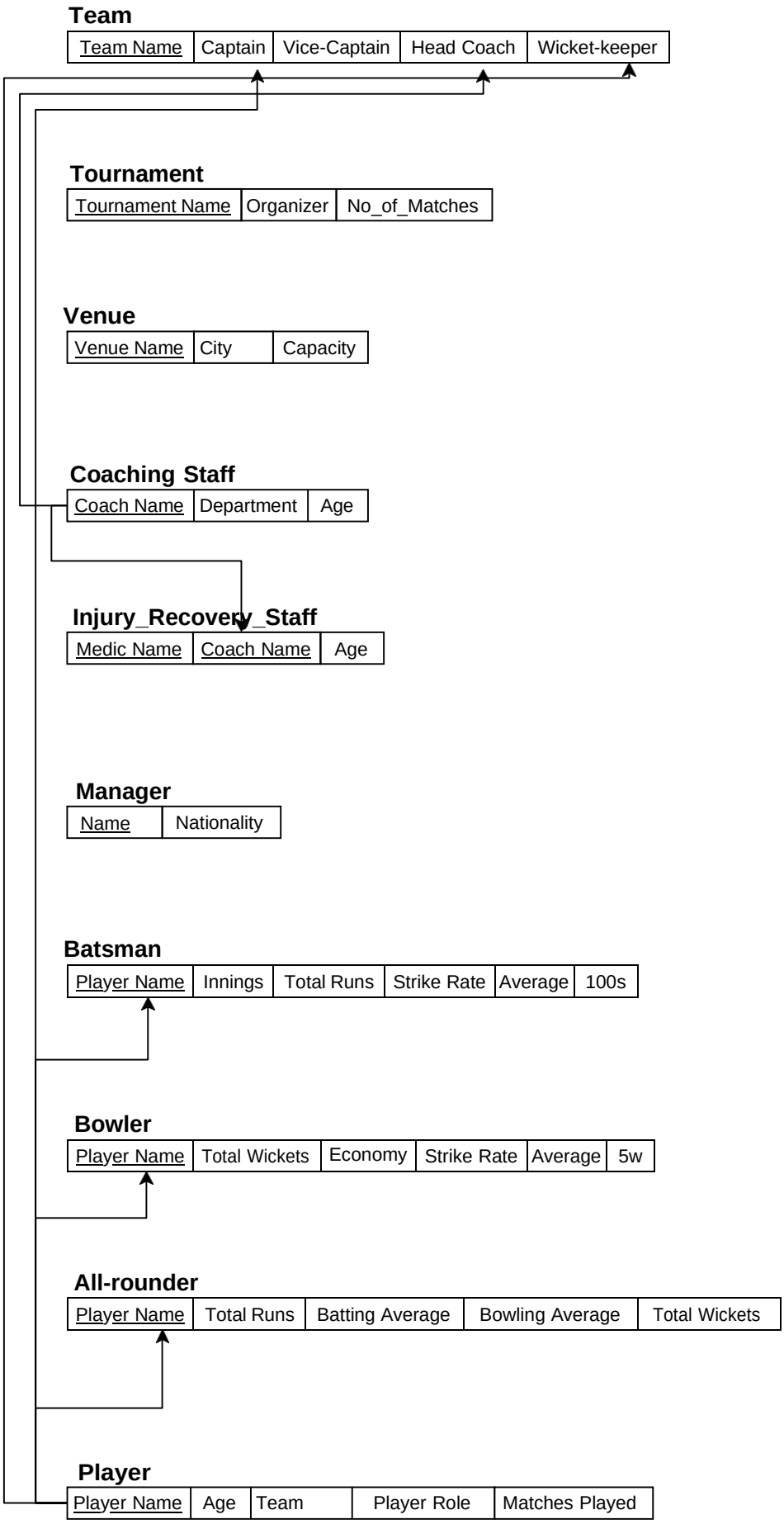
Boards and players can:

- Do everything media and public can do.
- Obtain a list of teams/players registered for a tournament.
- View and analyse the statistics of a certain player in a team.
- Select coaching staff and medical staff for a team.
- Get a list of all the captains, vice-captains and wicket keepers.

EER Diagram (Conceptual Model)



Global Conceptual Schema



The following code has been used to create the database Cricket_Info -

```
create table Player(
Player_Name varchar(20) not null primary key,
Age int,
Team varchar(20) not null,
Role varchar(20) not null,
Matches_Played int);
insert into Player values ('Virat Kohli',32,'MI','Batsman',254);
insert into Player values ('Rohit Sharma',33,'MI','Batsman',227);
insert into Player values ('Shikhar Dhawan',35,'MI','Batsman',142);
insert into Player values ('Shubman Gill',21,'MI','Batsman',3);
insert into Player values ('Hardik Pandya',27,'MI','All-Rounder',60);
insert into Player values ('Ravindra Jadeja',32,'MI','All-Rounder',168);
insert into Player values ('KL Rahul',28,'MI','Batsman',38);
insert into Player values ('Mohammed Shami',38,'CSK','Bowler',79);
insert into Player values ('Jasprit Bumrah',27,'KKR','Bowler',67);
insert into Player values ('Kuldeep Yadav',26,'RCB','Bowler',63);
insert into Player values ('Yuzvendra Chahal',30,'PK','Bowler',54);
insert into Player values ('Aaron Finch',34,'CSK','Batsman',132);
insert into Player values ('Steven Smith',31,'CSK','Batsman',128);
insert into Player values ('David Warner',34,'CSK','Batsman',128);
insert into Player values ('Joe Burns',31,'CSK','Batsman',6);
insert into Player values ('Glenn Maxwell',32,'CSK','All-Rounder',116);
insert into Player values ('Marcus Stoinis',31,'CSK','All-Rounder',45); insert
into Player values ('Alex Carey',29,'CSK','Batsman',42);
insert into Player values ('Pat Cummins',27,'MI','Bowler',69);
insert into Player values ('Nathan Lyon',33,'KKR','Bowler',29);
insert into Player values ('Mitchell Starc',31,'RCB','Bowler',96);
insert into Player values ('Adam Zampa',29,'PK','Bowler',61);
insert into Player values ('Martin Guptill',34,'KKR','Batsman',186);
insert into Player values ('Ross Taylor',37,'KKR','Batsman',233);
insert into Player values ('Kane Williamson',30,'KKR','Batsman',151);
insert into Player values ('Henry Nicholls',29,'KKR','Batsman',52);
insert into Player values ('James Neesham',30,'KKR','All-Rounder',66);
insert into Player values ('Colin de Grandhomme',34,'KKR','All-Rounder',42);
insert into Player values ('Tom Latham',29,'KKR','Batsman',102);
insert into Player values ('Trent Boult',31,'MI','Bowler',93);
insert into Player values ('Matt Henry',29,'CSK','Bowler',55);
insert into Player values ('Tim Southee',32,'RCB','Bowler',143);
insert into Player values ('Ish Sodhi',28,'PK','Bowler',33);
insert into Player values ('Eoin Morgan',34,'RCB','Batsman',243);
insert into Player values ('Joe Root',30,'RCB','Batsman',149);
insert into Player values ('Jason Roy',35,'RCB','Batsman',96);
insert into Player values ('Liam Livingstone',27,'RCB','Batsman',2);
insert into Player values ('Moeen Ali',33,'RCB','All-Rounder',109);
insert into Player values ('Ben Stokes',29,'RCB','All-Rounder',98);
insert into Player values ('Jonny Bairstow',31,'RCB','Batsman',86);
insert into Player values ('Adil Rashid',33,'MI','Bowler',109);
insert into Player values ('Mark Wood',31,'CSK','Bowler',55);
insert into Player values ('Jofra Archer',26,'KKR','Bowler',17);
insert into Player values ('Olly Stone',27,'PK','Bowler',4);
insert into Player values ('Fakhar Zaman',30,'PK','Batsman',48);
```

```
insert into Player values ('Imam-ul-Haq',25,'PK','Batsman',41);
insert into Player values ('Babar Azam',26,'PK','Batsman',78);
insert into Player values ('Asif Ali',29,'PK','Batsman',19);
insert into Player values ('Haris Sohail',32,'PK','All-Rounder',42);
insert into Player values ('Mohammad Hafeez',40,'PK','All-Rounder',218);
insert into Player values ('Sarfaraz Ahmed',33,'PK','Batsman',116);
insert into Player values ('Wahab Riaz',35,'MI','Bowler',91);
insert into Player values ('Shaheen Afridi',20,'CSK','Bowler',23);
insert into Player values ('Hasan Ali',26,'KKR','Bowler',53);
insert into Player values ('Mohammad Hasnain',20,'RCB','Bowler',7);

create table Coaching_Staff(
Coach_Name varchar(20) primary key,
Department varchar(20),
Age int not null);
insert into Coaching_Staff values ('Ravi Shastri','Head Coach',58);
insert into Coaching_Staff values ('Ramakrishnan Sridhar','Fielding Coach',50);
insert into Coaching_Staff values ('Bharat Arun','Bowling Coach',58);
insert into Coaching_Staff values ('Justin Langer','Head Coach',50);
insert into Coaching_Staff values ('Mike Young','Fielding Coach',65);
insert into Coaching_Staff values ('Troy Cooley','Bowling Coach',55);
insert into Coaching_Staff values ('Gary Stead','Head Coach',49);
insert into Coaching_Staff values ('Luke Ronchi','Fielding Coach',39);
insert into Coaching_Staff values ('Shane Bond','Bowling Coach',45);
insert into Coaching_Staff values ('Chris Silverwood','Head Coach',46);
insert into Coaching_Staff values ('Carl Hopkinson','Fielding Coach',39);
insert into Coaching_Staff values ('Jon Lewis','Bowling Coach',45);
insert into Coaching_Staff values ('Misbah-ul-Haq','Head Coach',46);
insert into Coaching_Staff values ('Grant Bradburn','Fielding Coach',54);
insert into Coaching_Staff values ('Waqar Younis','Bowling Coach',49);

create table Team(
Team_Name varchar(20) not null,
Captain varchar(20) not null,
Vice_Captain varchar(20) not null,
Head_Coach varchar(20),
Wicket_Keeper varchar(20) not null,
PRIMARY KEY(Team_Name),
FOREIGN KEY(Captain) REFERENCES Player(Player_Name)
 ON UPDATE CASCADE,
FOREIGN KEY(Vice_Captain) REFERENCES Player(Player_Name)
 ON UPDATE CASCADE,
FOREIGN KEY(Wicket_Keeper) REFERENCES Player(Player_Name)
 ON UPDATE CASCADE,
FOREIGN KEY(Head_Coach) REFERENCES Coaching_Staff(Coach_Name)
 ON DELETE SET NULL
 ON UPDATE CASCADE);
insert into Team values ('India','Virat Kohli','Rohit Sharma','Ravi Shastri','KL Rahul');
insert into Team values ('Australia','Aaron Finch','Steven Smith','Justin Langer','Alex Carey');
insert into Team values ('New Zealand','Kane Williamson','Martin Guptill','Gary Stead','Tom Latham');
insert into Team values ('England','Eoin Morgan','Joe Root','Chris Silverwood','Jonny Bairstow');
insert into Team values ('Pakistan','Sarfaraz Ahmed','Babar Azam','Misbah-ul-Haq','Sarfaraz Ahmed');

create table Tournament(
```

```
Tournament_Name varchar(30) primary key,
Organizer varchar(30) not null,
Duration_in_days int not null);
insert into Tournament values ('Indian Premier League','BCCI',74);
insert into Tournament values ('Big Bash League','CA',61);
insert into Tournament values ('Caribbean Premier League',' Cricket West Indies',33);
insert into Tournament values ('Pakistan Super League', 'PCB',34);

create table Venue(
Venue_Name varchar(30) primary key,
Country varchar(20),
Capacity int not null);
insert into Venue values ('M. Chinnaswamy Stadium','Bengaluru',30000);
insert into Venue values ('Wankhede Stadium','Mumbai',28000);
insert into Venue values ('M.A. Chidambaram
Stadium,'Chennai',25500);
insert into Venue values ('HPCA
Stadium','Dharamshala',23000);
insert into Venue values ('Eden Gardens','Kolkata',68000);


create table Injury_Recovery_Staff( Physiotherapist_Name varchar(20) not null, Coach_Name varchar(20) not null,
Age int,
PRIMARY KEY(physiotherapist_name, coach_name));
insert into Injury_Recovery_Staff values ('Patrick Farhart','Ravi Shastri',59);
insert into Injury_Recovery_Staff values ('John Orchard','Justin Langer',53);
insert into Injury_Recovery_Staff values ('John Cameron','Gary Stead',55);
insert into Injury_Recovery_Staff values ('Nick Peirce','Chris Silverwood',56);
insert into Injury_Recovery_Staff values ('Sohail Saleem','Misbah-ul-Haq',55);

create table Manager(
Manager_name varchar(50) PRIMARY KEY, Nationality varchar(50));
insert into Manager values ('Anil Chaudhary', 'India');
insert into Manager values ('Sundaram Ravi', 'India');
insert into Manager values ('Chris Gaffaney','New Zealand');
insert into Manager values ('Paul Reiffel', 'Australia');
insert into Manager values ('Richard Illingworth', 'England');

create table Batsman(
Player_Name varchar(20) not null primary key,
Innings int,
Total_Runs int,
Average float,
Strike_Rate float,
Hundreds int,
FOREIGN KEY (Player_Name) REFERENCES Player(Player_Name)
ON UPDATE CASCADE
ON DELETE CASCADE;
insert into Batsman values ('Virat Kohli',245,12169,59.07,93.17,43);
insert into Batsman values ('Rohit Sharma',220,9205,48.96,88.9,29);
insert into Batsman values ('Shikhar Dhawan',139,5977,45.28,93.9,17);
insert into Batsman values ('Shubman Gill',3,49,16.33,69.01,0);
insert into Batsman values ('KL Rahul',37,1509,48.68,89.29,5);
insert into Batsman values ('Aaron Finch',128,5232,41.86,88.41,17);
```

```
insert into Batsman values ('Steven Smith',113,4378,43.35,88.5,11);
insert into Batsman values ('David Warner',126,5455,45.08,95.53,18);
insert into Batsman values ('Joe Burns',6,146,24.33,79.35,0);
insert into Batsman values ('Alex Carey',37,1091,36.37,91.76,1);
insert into Batsman values ('Martin Guptill',183,6927,41.98,87.74,16);
insert into Batsman values ('Ross Taylor',217,8576,48.18,83.36,21);
insert into Batsman values ('Kane Williamson',144,6174,47.49,81.76,13);
insert into Batsman values ('Henry Nicholls',50,1409,36.13,82.06,1);
insert into Batsman values ('Tom Latham',94,2824,34.02,83.72,5);
insert into Batsman values ('Eoin Morgan',226,7620,39.28,91.38,14);
insert into Batsman values ('Joe Root',140,5962,50.1,86.91,16);
insert into Batsman values ('Jason Roy',92,3598,39.98,107.15,9);
insert into Batsman values ('Liam Livingstone',2,63,63.0,121.15,0);
insert into Batsman values ('Jonny Bairstow',79,3426,48.25,104.64,11);
insert into Batsman values ('Fakhar Zaman',48,1968,44.73,95.07,4);
insert into Batsman values ('Imam-ul-Haq',41,1846,52.74,80.12,7);
insert into Batsman values ('Babar Azam',76,3596,56.19,87.75,12);
insert into Batsman values ('Asif Ali',14,361,27.77,128.93,0);
insert into Batsman values ('Sarfaraz Ahmed',90,2302,33.85,87.8,2);

create table Bowler(
Player_Name varchar(20) not null primary key,
Wickets int,
Economy float,
Average float,
Strike_Rate float,
Fifer int,
FOREIGN KEY (Player_Name) REFERENCES Player(Player_Name)
ON UPDATE CASCADE
ON DELETE CASCADE;
insert into Bowler values ('Mohammed Shami',148,5.63,25.63,27.32,1);
insert into Bowler values ('Jasprit Bumrah',108,4.66,25.33,32.62,1);
insert into Bowler values ('Kuldeep Yadav',105,5.22,27.9,32.06,1);
insert into Bowler values ('Yuzvendra Chahal',92,5.21,27.29,31.45,2);
insert into Bowler values ('Pat Cummins',111,5.25,28.78,32.89,1);
insert into Bowler values ('Nathan Lyon',29,4.92,46.0,56.07,0);
insert into Bowler values ('Mitchell Starc',184,5.18,23.17,26.83,7);
insert into Bowler values ('Adam Zampa',92,5.55,32.65,35.3,0);
insert into Bowler values ('Trent Boult',169,5.0,25.21,30.28,5);
insert into Bowler values ('Matt Henry',98,5.29,25.9,29.36,2);
insert into Bowler values ('Tim Southee',190,5.47,34.51,37.87,3);
insert into Bowler values ('Ish Sodhi',43,5.59,35.07,37.67,0);
insert into Bowler values ('Adil Rashid',158,5.66,32.41,34.36,2);
insert into Bowler values ('Mark Wood',69,5.55,37.52,40.59,0);
insert into Bowler values ('Jofra Archer',30,4.74,24.0,30.37,0);
insert into Bowler values ('Olly Stone',1,6.06,97.0,96.0,0);
insert into Bowler values ('Wahab Riaz',120,5.71,34.31,36.06,1);
insert into Bowler values ('Shaheen Afridi',47,5.31,21.70,24.51,2);
insert into Bowler values ('Hasan Ali',82,5.61,29.04,31.07,3);
insert into Bowler values ('Mohammad Hasnain',11,6.29,33.73,32.36,1);
```

```
create table All_Rounder(
Player_Name varchar(20) not null primary key,
Total_Runs int,
Batting_Average float,
Total_Wickets int,
Bowling_Average float,
FOREIGN KEY (Player_Name) REFERENCES Player(Player_Name)
ON UPDATE CASCADE
ON DELETE CASCADE;
insert into All_Rounder values ('Hardik Pandya',1267,34.24,55,41.22)
insert into All_Rounder values ('Ravindra Jadeja',2411,32.58,188,37.36);
insert into All_Rounder values ('Glenn Maxwell',3230,34.36,51,52.61);
insert into All_Rounder values ('Marcus Stoinis',1106,31.6,33,45.64);
insert into All_Rounder values ('James Neesham',1320,28.7,68,31.46);
insert into All_Rounder values ('Colin de Grandhomme',722,27.77,27,43.7);
insert into All_Rounder values ('Moeen Ali',1849,29.99,86,51.38);
insert into All_Rounder values ('Ben Stokes',2817,40.83,74,41.09);
insert into All_Rounder values ('Haris Sohail',1685,46.81,11,55.73);
insert into All_Rounder values ('Mohammad Hafeez',6614,32.91,139,38.86);
```

Normalization

Team

Attributes –

- *Team_Name*
- *Captain*
- *Vice_Captain*
- *Head_Coach*
- *Wicket_Keeper*

Functional Dependency –

Team_Name -> Captain, Vice_Captain, Head_Coach, Wicket_Keeper

Normalization –

The leftmost attribute is the super key. There are no transitive dependencies or partial dependencies present.

So, this table is in the BCNF form.

Team (Team_Name, Captain, Vice_Captain, Head_Coach, Wicket_Keeper)

Tournament

Attributes –

- *Tournament_Name*
- *Organiser*
- *No_of_Matches*

Functional Dependency –

Tournament_Name-> Organiser,

No_of_Matches

Normalization -

The left most attribute is the super key. There are no transitive dependencies or partial dependencies present.

So, this table is in the BCNF form.

Tournament (<u>Tournament_Name</u> , Organiser, No_of_Matches)

Venue

Attributes –

- *Venue_Name*
- *City*
- *Capacity*

Functional Dependency –

Venue_Name -> Country, Capacity

Normalization

The left most attribute is the super key. There are no transitive dependencies or partial dependencies present.

So, this table is in the BCNF form.

Venue (<u>Venue_Name</u> , City, Capacity)

Coaching_Staff

Attributes –

- *Coach_Name*
- *Department*
- *Age*

Functional Dependency –

Coach_Name -> Department, Age

Normalization –

The left most attribute is the super key. There are no transitive dependencies or partial dependencies present.

So, this table is in the BCNF form.

Coaching_Staff (Coach_Name , Department, Age)

Injury_Recovery_Staff

Attributes –

- *Physiotherapist_Name*
- *Coach_Name*
- *Age*

Functional Dependency –

Physiotherapist_Name,

Coach_Name -> AgeNormalization –

Since there are no transitive dependencies, partial dependencies or a super key, the table is in 3NF form.

Injury_Recovery_Staff (Physiotherapist_Name, Coach_Name, Age)

Manager

Attributes –

- *Name*
- *Nationality*

Functional Dependency –

Name -> Nationality

Normalization –

The left most attribute is the super key. There are no transitive dependencies or partial dependencies present.

So, this table is in the BCNF form.

Manager(Name, Nationality)

Batsman

Attributes –

- *Player_Name*
- *Innings*
- *Total_Runs*
- *Strike_Rate*
- *Average*
- *100s*

Functional Dependency –

Player_Name -> Innings, Total_Runs, Strike_Rate, Average, 100s

-Innings, Total_Runs -> Player_Name, Strike_Rate, Average, 100s

Normalization –

There are no transitive dependencies or partial dependencies present. Since player name is determining each and every attribute of the entity it is the candidate key and the prime attribute also but other attributes all are not non-prime. Also, various other combinations of attributes can determine the other entities uniquely.

So, this table is in the 3NF form.

Batsman (Player_Name, Innings, Total_Runs, Strike_Rate, Average, 100s)

Bowler

Attributes –

- *Player_Name*
- *Total_Wickets*
- *Economy*
- *Average*
- *5w*
- *Strike_Rate*

Functional Dependency –

Player_Name -> Total_Wickets, Economy, Average, 5w, Strike_Rate

-Economy, Total_Wickets -> Player_Name, Strike_Rate, Average, 5w

Normalization –

There are no transitive dependencies or partial dependencies present. Since player name is determining each and every attribute of the entity it is the candidate key and the prime attribute also but other attributes all are not non-prime. Also various other combinations of attributes can determine the other entities uniquely.

So this table is in the 3NF form.

Bowler (Player_Name, Total_Wickets, Economy, Average, 5w, Strike_Rate)

All_Rounder

Attributes –

- *Player_Name*
- *Total_Runs*
- *Total_Wickets*
- *Batting_Average*
- *Bowling_Average*

Functional Dependency –

Player_Name -> Total_Wickets, Total_Runs, Batting_Average, Bowling_Average

-Total_Runs, Total_Wickets -> Player_Name, Batting_Average, Bowling_Average

Normalization –

There are no transitive dependencies or partial dependencies present. Since player name is determining each and every attribute of the entity it is the candidate key and the prime attribute also but other attributes all are not non-prime. Also various other combinations of attributes can determine the other entities uniquely.

So this table is in the 3NF form.

All_Rounder (Player_Name, Total_Wickets, Total_Runs, Batting_Average, Bowling_Average)

Player

Attributes –

- *Player_Name*
- *Age*
- *Team*
- *Player_Role*
- *Matches_Played*

Functional Dependency –

Player_Name -> Age, Team, Player_Role, Matches_Played

Normalization –

The left most attribute is the super key. There are no transitive dependencies or partial dependencies present.

So, this table is in the BCNF form.

Player (Player_Name, Age, Team, Player_Role, Matches_Played)

Output

Creation Of Tables

```
mysql> select * from all_rounder;
+---------------------+------------+-----------------+---------------+-----------------+
| Player_Name         | Total_Runs | Batting_Average | Total_Wickets | Bowling_Average |
+---------------------+------------+-----------------+---------------+-----------------+
| Ben Stokes          |       2817 |           40.83 |            74 |           41.09 |
| Colin de Grandhomme |        722 |           27.77 |            27 |            43.7 |
| Glenn Maxwell       |       3230 |           34.36 |            51 |           52.61 |
| Hardik Pandya       |       1267 |           34.24 |            55 |           41.22 |
| Haris Sohail        |       1685 |           46.81 |            11 |           55.73 |
| James Neesham       |       1320 |            28.7 |            68 |           31.46 |
| Marcus Stoinis      |       1106 |            31.6 |            33 |           45.64 |
| Moeen Ali           |       1849 |           29.99 |            86 |           51.38 |
| Mohammad Hafeez     |       6614 |           32.91 |           139 |           38.86 |
| Ravindra Jadeja     |       2411 |           32.58 |           188 |           37.36 |
+---------------------+------------+-----------------+---------------+-----------------+
10 rows in set (0.00 sec)
```

```
mysql> select * from batsman;
+------------------+---------+------------+---------+-------------+----------+
| Player_Name      | Innings | Total_Runs | Average | Strike_Rate | Hundreds |
+------------------+---------+------------+---------+-------------+----------+
| Aaron Finch      |     128 |       5232 |   41.86 |       88.41 |       17 |
| Alex Carey       |      37 |       1091 |   36.37 |       91.76 |        1 |
| Asif Ali         |      14 |        361 |   27.77 |      128.93 |        0 |
| Babar Azam       |      76 |       3596 |   56.19 |       87.75 |       12 |
| David Warner     |     126 |       5455 |   45.08 |       95.53 |       18 |
| Eoin Morgan      |     226 |       7620 |   39.28 |       91.38 |       14 |
| Fakhar Zaman     |      48 |       1968 |   44.73 |       95.07 |        4 |
| Henry Nicholls   |      50 |       1409 |   36.13 |       82.06 |        1 |
| Imam-ul-Haq      |      41 |       1846 |   52.74 |       80.12 |        7 |
| Jason Roy        |      92 |       3598 |   39.98 |      107.15 |        9 |
| Joe Burns        |       6 |        146 |   24.33 |       79.35 |        0 |
| Joe Root         |     140 |       5962 |    50.1 |       86.91 |       16 |
| Jonny Bairstow   |      79 |       3426 |   48.25 |      104.64 |       11 |
| Kane Williamson  |     144 |       6174 |   47.49 |       81.76 |       13 |
| KL Rahul         |      37 |       1509 |   48.68 |       89.29 |        5 |
| Liam Livingstone |       2 |         63 |      63 |      121.15 |        0 |
| Martin Guptill   |     183 |       6927 |   41.98 |       87.74 |       16 |
| Rohit Sharma     |     220 |       9205 |   48.96 |        88.9 |       29 |
| Ross Taylor      |     217 |       8576 |   48.18 |       83.36 |       21 |
| Sarfaraz Ahmed   |      90 |       2302 |   33.85 |        87.8 |        2 |
| Shikhar Dhawan   |     139 |       5977 |   45.28 |        93.9 |       17 |
| Shubman Gill     |       3 |         49 |   16.33 |       69.01 |        0 |
| Steven Smith     |     113 |       4378 |   43.35 |        88.5 |       11 |
| Tom Latham       |      94 |       2824 |   34.02 |       83.72 |        5 |
| Virat Kohli      |     245 |      12169 |   59.07 |       93.17 |       43 |
+------------------+---------+------------+---------+-------------+----------+
25 rows in set (0.00 sec)
```

```
mysql> select * from bowler;
+-----------------+---------+---------+---------+-------------+-------+
| Player_Name     | Wickets | Economy | Average | Strike_Rate | Fifer |
+-----------------+---------+---------+---------+-------------+-------+
| Adam Zampa      |      92 |    5.55 |   32.65 |        35.3 |     0 |
| Adil Rashid     |     158 |    5.66 |   32.41 |       34.36 |     2 |
| Hasan Ali       |      82 |    5.61 |   29.04 |       31.07 |     3 |
| Ish Sodhi       |      43 |    5.59 |   35.07 |       37.67 |     0 |
| Jasprit Bumrah  |     108 |    4.66 |   25.33 |       32.62 |     1 |
| Jofra Archer    |      30 |    4.74 |      24 |       30.37 |     0 |
| Kuldeep Yadav   |     105 |    5.22 |    27.9 |       32.06 |     1 |
| Mark Wood       |      69 |    5.55 |   37.52 |       40.59 |     0 |
| Matt Henry      |      98 |    5.29 |    25.9 |       29.36 |     2 |
| Mitchell Starc  |     184 |    5.18 |   23.17 |       26.83 |     7 |
| Mohammad Hasnain |      11 |    6.29 |   33.73 |       32.36 |     1 |
| Mohammed Shami  |     148 |    5.63 |   25.63 |       27.32 |     1 |
| Nathan Lyon     |      29 |    4.92 |      46 |       56.07 |     0 |
| Olly Stone      |       1 |    6.06 |      97 |          96 |     0 |
| Pat Cummins     |     111 |    5.25 |   28.78 |       32.89 |     1 |
| Shaheen Afridi  |      47 |    5.31 |    21.7 |       24.51 |     2 |
| Tim Southee     |     190 |    5.47 |   34.51 |       37.87 |     3 |
| Trent Boult     |     169 |       5 |   25.21 |       30.28 |     5 |
| Wahab Riaz      |     120 |    5.71 |   34.31 |       36.06 |     1 |
| Yuzvendra Chahal |      92 |    5.21 |   27.29 |       31.45 |     2 |
+-----------------+---------+---------+---------+-------------+-------+
20 rows in set (0.00 sec)
```

```
mysql> select * from coaching_staff;
+----------------------+----------------+-----+
| Coach_Name           | Department     | Age |
+----------------------+----------------+-----+
| Bharat Arun          | Bowling Coach  |  58 |
| Carl Hopkinson       | Fielding Coach |  39 |
| Chris Silverwood     | Head Coach     |  46 |
| Gary Stead           | Head Coach     |  49 |
| Grant Bradburn       | Fielding Coach |  54 |
| Jon Lewis            | Bowling Coach  |  45 |
| Justin Langer        | Head Coach     |  50 |
| Luke Ronchi          | Fielding Coach |  39 |
| Mike Young           | Fielding Coach |  65 |
| Misbah-ul-Haq        | Head Coach     |  46 |
| Ramakrishnan Sridhar | Fielding Coach |  50 |
| Ravi Shastri         | Head Coach     |  58 |
| Shane Bond           | Bowling Coach  |  45 |
| Troy Cooley          | Bowling Coach  |  55 |
| Waqar Younis         | Bowling Coach  |  49 |
+----------------------+----------------+-----+
15 rows in set (0.00 sec)
```

```
mysql> select * from injury_recovery_staff;
+----------------------+------------------+------+
| Physiotherapist_Name | Coach_Name       | Age  |
+----------------------+------------------+------+
| John Cameron         | Gary Stead       |   55 |
| John Orchard         | Justin Langer    |   53 |
| Nick Peirce          | Chris Silverwood |   56 |
| Patrick Farhart      | Ravi Shastri     |   59 |
| Sohail Saleem        | Misbah-ul-Haq    |   55 |
+----------------------+------------------+------+
5 rows in set (0.00 sec)
```

```
mysql> select * from manager;
+---------------------+-------------+
| Manager_name        | Nationality |
+---------------------+-------------+
| Anil Chaudhary      | India       |
| Chris Gaffaney      | New Zealand |
| Paul Reiffel        | Australia   |
| Richard Illingworth | England     |
| Sundaram Ravi       | India       |
+---------------------+-------------+
5 rows in set (0.01 sec)
```

```
mysql> select * from player;
+---------------------+------+------+-------------+----------------+
| Player_Name         | Age  | Team | Role        | Matches_Played |
+---------------------+------+------+-------------+----------------+
| Aaron Finch         |   34 | CSK  | Batsman     |            132 |
| Adam Zampa          |   29 | PK   | Bowler      |             61 |
| Adil Rashid         |   33 | MI   | Bowler      |            109 |
| Alex Carey          |   29 | CSK  | Batsman     |             42 |
| Asif Ali            |   29 | PK   | Batsman     |             19 |
| Babar Azam          |   26 | PK   | Batsman     |             78 |
| Ben Stokes          |   29 | RCB  | All-Rounder |             98 |
| Colin de Grandhomme |   34 | KKR  | All-Rounder |             42 |
| David Warner        |   34 | CSK  | Batsman     |            128 |
| Eoin Morgan         |   34 | RCB  | Batsman     |            243 |
| Fakhar Zaman        |   30 | PK   | Batsman     |             48 |
| Glenn Maxwell       |   32 | CSK  | All-Rounder |            116 |
| Hardik Pandya       |   27 | MI   | All-Rounder |             60 |
| Haris Sohail        |   32 | PK   | All-Rounder |             42 |
| Hasan Ali           |   26 | KKR  | Bowler      |             53 |
| Henry Nicholls      |   29 | KKR  | Batsman     |             52 |
| Imam-ul-Haq         |   25 | PK   | Batsman     |             41 |
| Ish Sodhi           |   28 | PK   | Bowler      |             33 |
| James Neesham       |   30 | KKR  | All-Rounder |             66 |
| Jason Roy           |   35 | RCB  | Batsman     |             96 |
| Jasprit Bumrah      |   27 | KKR  | Bowler      |             67 |
| Joe Burns           |   31 | CSK  | Batsman     |              6 |
| Joe Root            |   30 | RCB  | Batsman     |            149 |
| Jofra Archer        |   26 | KKR  | Bowler      |             17 |
| Jonny Bairstow      |   31 | RCB  | Batsman     |             86 |
| Kane Williamson     |   30 | KKR  | Batsman     |            151 |
| KL Rahul            |   28 | MI   | Batsman     |             38 |
| Kuldeep Yadav       |   26 | RCB  | Bowler      |             63 |
| Liam Livingstone    |   27 | RCB  | Batsman     |              2 |
| Marcus Stoinis      |   31 | CSK  | All-Rounder |             45 |
| Mark Wood           |   31 | CSK  | Bowler      |             55 |
| Martin Guptill      |   34 | KKR  | Batsman     |            186 |
| Matt Henry          |   29 | CSK  | Bowler      |             55 |
| Mitchell Starc      |   31 | RCB  | Bowler      |             96 |
| Moeen Ali           |   33 | RCB  | All-Rounder |            109 |
| Mohammad Hafeez     |   40 | PK   | All-Rounder |            218 |
| Mohammad Hasnain    |   20 | RCB  | Bowler      |              7 |
| Mohammed Shami      |   38 | CSK  | Bowler      |             79 |
| Nathan Lyon         |   33 | KKR  | Bowler      |             29 |
| Olly Stone          |   27 | PK   | Bowler      |              4 |
| Pat Cummins         |   27 | MI   | Bowler      |             69 |
| Ravindra Jadeja     |   32 | MI   | All-Rounder |            168 |
| Rohit Sharma        |   33 | MI   | Batsman     |            227 |
| Ross Taylor         |   37 | KKR  | Batsman     |            233 |
```

Ross Taylor	37	KKR	Batsman	233
Sarfaraz Ahmed	33	PK	Batsman	116
Shaheen Afridi	20	CSK	Bowler	23
Shikhar Dhawan	35	MI	Batsman	142
Shubman Gill	21	MI	Batsman	3
Steven Smith	31	CSK	Batsman	128
Tim Southee	32	RCB	Bowler	143
Tom Latham	29	KKR	Batsman	102
Trent Boult	31	MI	Bowler	93
Virat Kohli	32	MI	Batsman	254
Wahab Riaz	35	MI	Bowler	91
Yuzvendra Chahal	30	PK	Bowler	54

55 rows in set (0.00 sec)

```
mysql> select * from team;
```

Team_Name	Captain	Vice_Captain	Head_Coach	Wicket_Keeper
CSK	Aaron Finch	Steven Smith	Justin Langer	Alex Carey
KKR	Kane Williamson	Martin Guptill	Gary Stead	Tom Latham
MI	Virat Kohli	Rohit Sharma	Ravi Shastri	KL Rahul
PK	Sarfaraz Ahmed	Babar Azam	Misbah-ul-Haq	Sarfaraz Ahmed
RCB	Eoin Morgan	Joe Root	Chris Silverwood	Jonny Bairstow

5 rows in set (0.00 sec)

```
mysql> select * from tournament;
```

Tournament_Name	Organizer	No_of_Matches
Big Bash League	CA	61
Caribbean Premier League	Cricket West Indies	33
Indian Premier League	BCCI	74
Pakistan Super League	PCB	34

4 rows in set (0.00 sec)

```
mysql> select * from venue;
```

Venue_Name	City	Capacity
Eden Gardens	Kolkata	68000
HPCA Stadium	Dharamshala	23000
M. Chinnaswamy Stadium	Bengaluru	30000
M.A. Chidambaram Stadium	Chennai	25500
Wankhede Stadium	Mumbai	28000

5 rows in set (0.00 sec)

Queries

Q1. Write a query to display the table names.

```
mysql> show tables;
+----------------------------+
| Tables_in_mini_project_ipl |
+----------------------------+
| all_rounder                |
| batsman                    |
| bowler                     |
| coaching_staff             |
| injury_recovery_staff      |
| manager                    |
| player                     |
| team                       |
| tournament                 |
| venue                      |
+----------------------------+
10 rows in set (0.00 sec)
```

Q2. Write a query to show the description of the table 'Player'.

```
mysql> desc player;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| Player_Name    | varchar(20) | NO   | PRI | NULL    |       |
| Age            | int(11)     | YES  |     | NULL    |       |
| Team           | char(20)    | YES  |     | NULL    |       |
| Role           | varchar(20) | NO   |     | NULL    |       |
| Matches_Played | int(11)     | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
5 rows in set (0.10 sec)
```

Q3. Write a query to display the contents of the table 'Player'.

```
mysql> select * from player;
+---------------------+------+------+-------------+----------------+
| Player_Name         | Age  | Team | Role        | Matches_Played |
+---------------------+------+------+-------------+----------------+
| Aaron Finch         |   34 | CSK  | Batsman     |            132 |
| Adam Zampa          |   29 | PK   | Bowler      |             61 |
| Adil Rashid         |   33 | MI   | Bowler      |            109 |
| Alex Carey          |   29 | CSK  | Batsman     |             42 |
| Asif Ali            |   29 | PK   | Batsman     |             19 |
| Babar Azam          |   26 | PK   | Batsman     |             78 |
| Ben Stokes          |   29 | RCB  | All-Rounder |             98 |
| Colin de Grandhomme |   34 | KKR  | All-Rounder |             42 |
| David Warner        |   34 | CSK  | Batsman     |            128 |
| Eoin Morgan         |   34 | RCB  | Batsman     |            243 |
| Fakhar Zaman        |   30 | PK   | Batsman     |             48 |
| Glenn Maxwell       |   32 | CSK  | All-Rounder |            116 |
| Hardik Pandya       |   27 | MI   | All-Rounder |             60 |
| Haris Sohail        |   32 | PK   | All-Rounder |             42 |
| Hasan Ali           |   26 | KKR  | Bowler      |             53 |
| Henry Nicholls      |   29 | KKR  | Batsman     |             52 |
| Imam-ul-Haq         |   25 | PK   | Batsman     |             41 |
| Ish Sodhi           |   28 | PK   | Bowler      |             33 |
| James Neesham       |   30 | KKR  | All-Rounder |             66 |
| Jason Roy           |   35 | RCB  | Batsman     |             96 |
| Jasprit Bumrah      |   27 | KKR  | Bowler      |             67 |
| Joe Burns           |   31 | CSK  | Batsman     |              6 |
| Joe Root            |   30 | RCB  | Batsman     |            149 |
| Jofra Archer        |   26 | KKR  | Bowler      |             17 |
| Jonny Bairstow      |   31 | RCB  | Batsman     |             86 |
| Kane Williamson     |   30 | KKR  | Batsman     |            151 |
| KL Rahul            |   28 | MI   | Batsman     |             38 |
| Kuldeep Yadav       |   26 | RCB  | Bowler      |             63 |
| Liam Livingstone    |   27 | RCB  | Batsman     |              2 |
| Marcus Stoinis      |   31 | CSK  | All-Rounder |             45 |
| Mark Wood           |   31 | CSK  | Bowler      |             55 |
| Martin Guptill      |   34 | KKR  | Batsman     |            186 |
| Matt Henry          |   29 | CSK  | Bowler      |             55 |
| Mitchell Starc      |   31 | RCB  | Bowler      |             96 |
| Moeen Ali           |   33 | RCB  | All-Rounder |            109 |
| Mohammad Hafeez     |   40 | PK   | All-Rounder |            218 |
| Mohammad Hasnain    |   20 | RCB  | Bowler      |              7 |
| Mohammed Shami      |   38 | CSK  | Bowler      |             79 |
| Nathan Lyon         |   33 | KKR  | Bowler      |             29 |
| Olly Stone          |   27 | PK   | Bowler      |              4 |
| Pat Cummins         |   27 | MI   | Bowler      |             69 |
| Ravindra Jadeja     |   32 | MI   | All-Rounder |            168 |
| Rohit Sharma        |   33 | MI   | Batsman     |            227 |
| Ross Taylor         |   37 | KKR  | Batsman     |            233 |
```

Sarfaraz Ahmed	33	PK	Batsman	116
Shaheen Afridi	20	CSK	Bowler	23
Shikhar Dhawan	35	MI	Batsman	142
Shubman Gill	21	MI	Batsman	3
Steven Smith	31	CSK	Batsman	128
Tim Southee	32	RCB	Bowler	143
Tom Latham	29	KKR	Batsman	102
Trent Boult	31	MI	Bowler	93
Virat Kohli	32	MI	Batsman	254
Wahab Riaz	35	MI	Bowler	91
Yuzvendra Chahal	30	PK	Bowler	54

55 rows in set (0.00 sec)

Q4. Write a query to display the players whose age is greater than 35.

```
mysql> select * from player where age>35;
+-----------------+------+------+-------------+----------------+
| Player_Name     | Age  | Team | Role        | Matches_Played |
+-----------------+------+------+-------------+----------------+
| Mohammad Hafeez |   40 | PK   | All-Rounder |            218 |
| Mohammed Shami  |   38 | CSK  | Bowler      |             79 |
| Ross Taylor     |   37 | KKR  | Batsman     |            233 |
+-----------------+------+------+-------------+----------------+
3 rows in set (0.00 sec)
```

Q5. Update the no of seats at Eden Gardens to 70,000.

```
mysql> update venue set Capacity=70000 where Venue_Name= "Eden Gardens";
Query OK, 1 row affected (0.08 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from venue;
+--------------------------+-------------+----------+
| Venue_Name               | Country     | Capacity |
+--------------------------+-------------+----------+
| Eden Gardens             | Kolkata     |    70000 |
| HPCA Stadium             | Dharamshala |    23000 |
| M. Chinnaswamy Stadium   | Bengaluru   |    30000 |
| M.A. Chidambaram Stadium | Chennai     |    25500 |
| Wankhede Stadium         | Mumbai      |    28000 |
+--------------------------+-------------+----------+
5 rows in set (0.00 sec)
```

Q6. Insert a tournament named 'Champions League Twenty20' along with its criterion.

```
mysql> insert into tournament values ('Champions League Twenty20', 'BCCI, CA and CSA', '24');
Query OK, 1 row affected (0.02 sec)

mysql> select * from tournament;
+--------------------------+----------------------+---------------+
| Tournament_Name          | Organizer            | No_of_Matches |
+--------------------------+----------------------+---------------+
| Big Bash League          | CA                   | 61            |
| Caribbean Premier League |  Cricket West Indies | 33            |
| Champions League Twenty20 | BCCI, CA and CSA     | 24            |
| Indian Premier League    | BCCI                 | 74            |
| Pakistan Super League    | PCB                  | 34            |
+--------------------------+----------------------+---------------+
5 rows in set (0.00 sec)
```

Q7. Alter the bowlers' stats to sort bowlers with an economy of less than 10.

```
mysql> alter table Bowler add check(Economy<10.00);
Query OK, 20 rows affected (0.23 sec)
Records: 20  Duplicates: 0  Warnings: 0

mysql> select *from Bowler;
+------------------+---------+---------+---------+-------------+-------+
| Player_Name      | Wickets | Economy | Average | Strike_Rate | Fifer |
+------------------+---------+---------+---------+-------------+-------+
| Adam Zampa       |      92 |    5.55 |   32.65 |        35.3 |     0 |
| Adil Rashid      |     158 |    5.66 |   32.41 |       34.36 |     2 |
| Hasan Ali        |      82 |    5.61 |   29.04 |       31.07 |     3 |
| Ish Sodhi        |      43 |    5.59 |   35.07 |       37.67 |     0 |
| Jasprit Bumrah   |     108 |    4.66 |   25.33 |       32.62 |     1 |
| Jofra Archer     |      30 |    4.74 |      24 |       30.37 |     0 |
| Kuldeep Yadav    |     105 |    5.22 |    27.9 |       32.06 |     1 |
| Mark Wood        |      69 |    5.55 |   37.52 |       40.59 |     0 |
| Matt Henry       |      98 |    5.29 |    25.9 |       29.36 |     2 |
| Mitchell Starc   |     184 |    5.18 |   23.17 |       26.83 |     7 |
| Mohammad Hasnain |      11 |    6.29 |   33.73 |       32.36 |     1 |
| Mohammed Shami   |     148 |    5.63 |   25.63 |       27.32 |     1 |
| Nathan Lyon      |      29 |    4.92 |      46 |       56.07 |     0 |
| Olly Stone       |       1 |    6.06 |      97 |          96 |     0 |
| Pat Cummins      |     111 |    5.25 |   28.78 |       32.89 |     1 |
| Shaheen Afridi   |      47 |    5.31 |    21.7 |       24.51 |     2 |
| Tim Southee      |     190 |    5.47 |   34.51 |       37.87 |     3 |
| Trent Boult      |     169 |       5 |   25.21 |       30.28 |     5 |
| Wahab Riaz       |     120 |    5.71 |   34.31 |       36.06 |     1 |
| Yuzvendra Chahal |      92 |    5.21 |   27.29 |       31.45 |     2 |
+------------------+---------+---------+---------+-------------+-------+
20 rows in set (0.00 sec)
```

Q8. Display the bowlers with more than a 100 wickets, an economy less than 3 and more than three five wicket hauls.

```
mysql> select *from Bowler where Wickets>100 and Economy<6.00 and Fifer>3;
+----------------+---------+---------+---------+-------------+-------+
| Player_Name    | Wickets | Economy | Average | Strike_Rate | Fifer |
+----------------+---------+---------+---------+-------------+-------+
| Mitchell Starc |     184 |    5.18 |   23.17 |       26.83 |     7 |
| Trent Boult    |     169 |       5 |   25.21 |       30.28 |     5 |
+----------------+---------+---------+---------+-------------+-------+
2 rows in set (0.00 sec)
```

Q9. Display the venues with a seating capacity of more than 50,000.

```
mysql> select * from venue where capacity > 50000;
+--------------+---------+----------+
| Venue_Name   | City    | Capacity |
+--------------+---------+----------+
| Eden Gardens | Kolkata |    70000 |
+--------------+---------+----------+
1 row in set (0.00 sec)
```

Q10. Delete the records of the injury_recovery_staff whose ages are greater than 55.

```
mysql> delete from Injury_Recovery_Staff where age > 55;
Query OK, 2 rows affected (0.09 sec)

mysql> select * from Injury_Recovery_Staff;
+----------------------+---------------+------+
| Physiotherapist_Name | Coach_Name    | Age  |
+----------------------+---------------+------+
| John Cameron         | Gary Stead    |   55 |
| John Orchard         | Justin Langer |   53 |
| Sohail Saleem        | Misbah-ul-Haq |   55 |
+----------------------+---------------+------+
3 rows in set (0.00 sec)
```

Q11. Add a column of experience to the table of coaching staff.

```
mysql> alter table coaching_staff add column experience int DEFAULT 1;
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select *from coaching_staff;
+----------------------+----------------+-----+------------+
| Coach_Name           | Department     | Age | experience |
+----------------------+----------------+-----+------------+
| Bharat Arun          | Bowling Coach  |  58 |          1 |
| Carl Hopkinson       | Fielding Coach |  39 |          1 |
| Chris Silverwood     | Head Coach     |  46 |          1 |
| Gary Stead           | Head Coach     |  49 |          1 |
| Grant Bradburn       | Fielding Coach |  54 |          1 |
| Jon Lewis            | Bowling Coach  |  45 |          1 |
| Justin Langer        | Head Coach     |  50 |          1 |
| Luke Ronchi          | Fielding Coach |  39 |          1 |
| Mike Young           | Fielding Coach |  65 |          1 |
| Misbah-ul-Haq        | Head Coach     |  46 |          1 |
| Ramakrishnan Sridhar | Fielding Coach |  50 |          1 |
| Ravi Shastri         | Head Coach     |  58 |          1 |
| Shane Bond           | Bowling Coach  |  45 |          1 |
| Troy Cooley          | Bowling Coach  |  55 |          1 |
| Waqar Younis         | Bowling Coach  |  49 |          1 |
+----------------------+----------------+-----+------------+
15 rows in set (0.00 sec)
```

Q12. Display the batsmen who have scored more than the average runs of all batsmen.

```
mysql> select * from Batsman where total_runs > ( select avg(total_runs) from Batsman);
+-----------------+---------+------------+---------+-------------+----------+
| Player_Name     | Innings | Total_Runs | Average | Strike_Rate | Hundreds |
+-----------------+---------+------------+---------+-------------+----------+
| Aaron Finch     |     128 |       5232 |   41.86 |       88.41 |       17 |
| David Warner    |     126 |       5455 |   45.08 |       95.53 |       18 |
| Eoin Morgan     |     226 |       7620 |   39.28 |       91.38 |       14 |
| Joe Root        |     140 |       5962 |    50.1 |       86.91 |       16 |
| Kane Williamson |     144 |       6174 |   47.49 |       81.76 |       13 |
| Martin Guptill  |     183 |       6927 |   41.98 |       87.74 |       16 |
| Rohit Sharma    |     220 |       9205 |   48.96 |        88.9 |       29 |
| Ross Taylor     |     217 |       8576 |   48.18 |       83.36 |       21 |
| Shikhar Dhawan  |     139 |       5977 |   45.28 |        93.9 |       17 |
| Steven Smith    |     113 |       4378 |   43.35 |        88.5 |       11 |
| Virat Kohli     |     245 |      12169 |   59.07 |       93.17 |       43 |
+-----------------+---------+------------+---------+-------------+----------+
11 rows in set (0.01 sec)
```

Q13. Display the bowlers, their total wickets and economy who have played more than 80 matches.

```
mysql> select Player_Name,Wickets,Economy from Bowler where Player_Name in (select Player_Name from Player where Matches_Played > 80);
+---------------+---------+---------+
| Player_Name   | Wickets | Economy |
+---------------+---------+---------+
| Adil Rashid   |     158 |    5.66 |
| Mitchell Starc |     184 |    5.18 |
| Tim Southee   |     190 |    5.47 |
| Trent Boult   |     169 |       5 |
| Wahab Riaz    |     120 |    5.71 |
+---------------+---------+---------+
5 rows in set (0.00 sec)
```

Q14. Display the batsmen, their average and strike rate who play for MI.

```
mysql> select player_name, average, strike_rate from batsman where player_name in (select player_name from player where team = 'MI');
+---------------+---------+-------------+
| player_name   | average | strike_rate |
+---------------+---------+-------------+
| KL Rahul      |   48.68 |       89.29 |
| Rohit Sharma  |   48.96 |        88.9 |
| Shikhar Dhawan |   45.28 |        93.9 |
| Shubman Gill  |   16.33 |       69.01 |
| Virat Kohli   |   59.07 |       93.17 |
+---------------+---------+-------------+
5 rows in set (0.00 sec)
```

Q15. Display all the all-rounders along with their team.

```
mysql> select player_name, team from player where player_name in (select player_name from All_Rounder);
+----------------------+------+
| player_name          | team |
+----------------------+------+
| Ben Stokes           | RCB  |
| Colin de Grandhomme  | KKR  |
| Glenn Maxwell        | CSK  |
| Hardik Pandya        | MI   |
| Haris Sohail         | PK   |
| James Neesham        | KKR  |
| Marcus Stoinis       | CSK  |
| Moeen Ali            | RCB  |
| Mohammad Hafeez      | PK   |
| Ravindra Jadeja      | MI   |
+----------------------+------+
10 rows in set (0.08 sec)
```

Q16. Show the name, age, team, role and matches played of all the team captains.

```
mysql> select p.player_name, p.age, p.team, p.role, p.matches_played from player p join team t on p.player_name = t.captain;
+----------------+------+------+---------+----------------+
| player_name    | age  | team | role    | matches_played |
+----------------+------+------+---------+----------------+
| Aaron Finch    |   34 | CSK  | Batsman |            132 |
| Eoin Morgan    |   34 | RCB  | Batsman |            243 |
| Kane Williamson |   30 | KKR  | Batsman |            151 |
| Sarfaraz Ahmed |   33 | PK   | Batsman |            116 |
| Virat Kohli    |   32 | MI   | Batsman |            254 |
+----------------+------+------+---------+----------------+
5 rows in set (0.00 sec)
```

Q17. Show the teams and their respective injury_recovery_staff.

```
mysql> select t.team_name, r.Physiotherapist_name from Team t JOIN injury_recovery_staff r on t.head_coach = r.coach_name;
+-----------+----------------------+
| team_name | Physiotherapist_name |
+-----------+----------------------+
| KKR       | John Cameron         |
| CSK       | John Orchard         |
| PK        | Sohail Saleem        |
+-----------+----------------------+
3 rows in set (0.08 sec)
```

Q18. Show the name, team, total runs and the strike rate of all the wicket keepers.

```
mysql> select t.wicket_keeper, t.team_name, b.total_runs, b.strike_rate from team t JOIN batsman b ON t.wicket_keeper = b.PLayer_name;
+----------------+-----------+------------+-------------+
| wicket_keeper  | team_name | total_runs | strike_rate |
+----------------+-----------+------------+-------------+
| Alex Carey     | CSK       |       1091 |       91.76 |
| Jonny Bairstow | RCB       |       3426 |      104.64 |
| KL Rahul       | MI        |       1509 |       89.29 |
| Sarfaraz Ahmed | PK        |       2302 |        87.8 |
| Tom Latham     | KKR       |       2824 |       83.72 |
+----------------+-----------+------------+-------------+
5 rows in set (0.08 sec)
```

Q19. Display all the all-rounders from RCB with more than a 1000 runs as well as more than a 100 wickets.

```
mysql> select * from All_Rounder where total_runs > 1000 and Total_Wickets > 100 and player_name in (select player_name from player where team = 'RCB');
Empty set (0.00 sec)
```

Q20. Display all the bowlers with an age less than 33, played more than a 100 matches and more than a 100 wickets.

```
mysql> select * from Bowler where Wickets>100 and Player_Name in (select Player_Name from Player where Matches_Played>100 and Age<33);
+-------------+---------+---------+---------+-------------+-------+
| Player_Name | Wickets | Economy | Average | Strike_Rate | Fifer |
+-------------+---------+---------+---------+-------------+-------+
| Tim Southee |     190 |    5.47 |   34.51 |       37.87 |     3 |
+-------------+---------+---------+---------+-------------+-------+
1 row in set (0.00 sec)
```

Triggers

The following trigger calculates the innings average whenever a new row is inserted into the Batsman table.

```
mysql> CREATE TRIGGER average_cal
    -> BEFORE INSERT
    -> ON Batsman FOR EACH ROW
    -> UPDATE Batsman SET Innings_Average = Total_Runs/Innings;
Query OK, 0 rows affected (0.01 sec)

mysql>
```

The following trigger which, whenever we update the all-rounder table, updates the batting average.

```
mysql> CREATE TRIGGER bat_avg
    -> AFTER UPDATE
    -> ON All_Rounder FOR EACH ROW
    -> UPDATE All_Rounder SET
    -> New.Batting_Average = New.Total_Runs/(select Matches_Played FROM Player WHERE All_Rounder.Player_Name = Player.Player_Name);
Query OK, 0 rows affected (0.01 sec)

mysql>
```

A new table called Player_Archive has been created, so whenever a player retires we delete the player from the current team (Player table) and store the data regarding that player in the Player_Archive table using a trigger.

```
mysql> delimiter //
mysql>      Create trigger archive
    ->      Before delete
    ->      On player for each row
    ->      Begin
    ->      Insert into player_archive(player_name, age, team, matches_played)
    ->      Values (old.player_name, old.age, old.team, old.matches_played);
    ->      End //
Query OK, 0 rows affected (0.02 sec)

mysql> Delimiter ;
mysql>       Select * from player_archive;
Empty set (0.00 sec)

mysql> Delete from player where player_name = 'Ali Rashid';
Query OK, 0 rows affected (0.00 sec)

mysql>        Select * from player_archive;
Empty set (0.00 sec)

mysql>   Delete from player where player_name = 'Ravindra Jadeja';
Query OK, 1 row affected (0.08 sec)

mysql>        Select * from player_archive;
+-----------------+------+------+----------------+
| Player_name     | Age  | Team | Matches_played |
+-----------------+------+------+----------------+
| Ravindra Jadeja |   32 | MI   |            168 |
+-----------------+------+------+----------------+
1 row in set (0.00 sec)
```

Views

The following view segregates all players younger than the age of 25.

```
mysql> create view young_player as select Player_Name, Team, Age from Player where Age <= 25;
Query OK, 0 rows affected (0.09 sec)

mysql> Select * from young_player;
+------------------+------+------+
| Player_Name      | Team | Age  |
+------------------+------+------+
| Imam-ul-Haq      | PK   |   25 |
| Mohammad Hasnain | RCB  |   20 |
| Shaheen Afridi   | CSK  |   20 |
| Shubman Gill     | MI   |   21 |
+------------------+------+------+
4 rows in set (0.08 sec)
```

The following view groups all veteran bowlers who have 100 or more wickets.

```
mysql> CREATE VIEW Veteran_Bowlers AS
    -> SELECT Player_Name, Wickets
    -> FROM Bowler
    -> WHERE Wickets>=100;
Query OK, 0 rows affected (0.01 sec)

mysql> select *from Veteran_Bowlers;
+----------------+---------+
| Player_Name    | Wickets |
+----------------+---------+
| Adil Rashid    |     158 |
| Jasprit Bumrah |     108 |
| Kuldeep Yadav  |     105 |
| Mitchell Starc |     184 |
| Mohammed Shami |     148 |
| Pat Cummins    |     111 |
| Tim Southee    |     190 |
| Trent Boult    |     169 |
| Wahab Riaz     |     120 |
+----------------+---------+
9 rows in set (0.00 sec)
```

The following view lists all the members of the team CSK.

```
mysql> create view Team_CSK as select Player_Name, Age, Role from Player where Team="CSK";
Query OK, 0 rows affected (0.10 sec)

mysql> Select * from Team_CSK;
+----------------+------+-------------+
| Player_Name    | Age  | Role        |
+----------------+------+-------------+
| Aaron Finch    |   34 | Batsman     |
| Alex Carey     |   29 | Batsman     |
| David Warner   |   34 | Batsman     |
| Glenn Maxwell  |   32 | All-Rounder |
| Joe Burns      |   31 | Batsman     |
| Marcus Stoinis |   31 | All-Rounder |
| Mark Wood      |   31 | Bowler      |
| Matt Henry     |   29 | Bowler      |
| Mohammed Shami |   38 | Bowler      |
| Shaheen Afridi |   20 | Bowler      |
| Steven Smith   |   31 | Batsman     |
+----------------+------+-------------+
11 rows in set (0.00 sec)
```

The following view displays the all-rounders with more than a 100 wickets and more than 1000 runs.

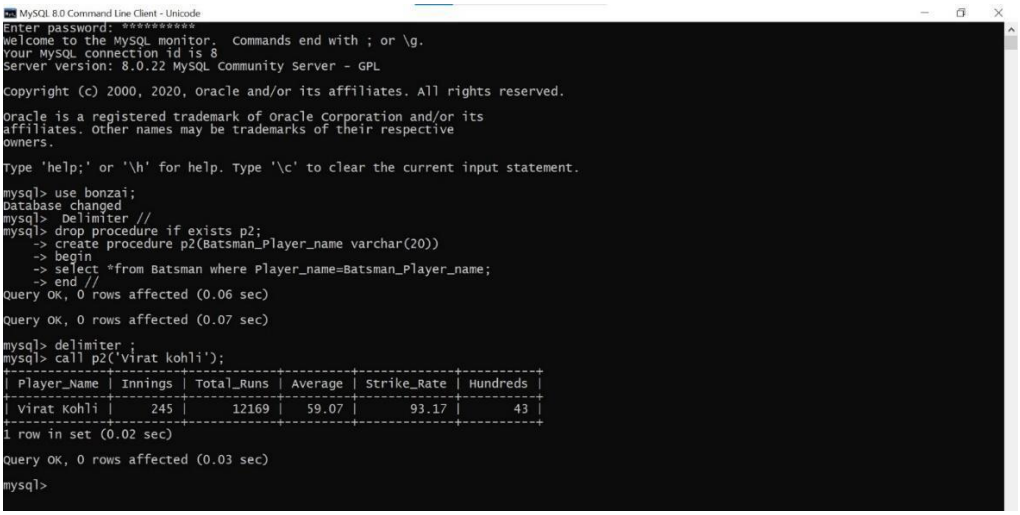
```
mysql> CREATE VIEW Good_All_Rounders AS
    -> SELECT Player_Name, Total_Runs, Total_Wickets
    -> FROM All_Rounder
    -> WHERE Total_Runs>=100 and Total_Wickets>=100;
Query OK, 0 rows affected (0.04 sec)

mysql> select *from Good_All_Rounders;
+-----------------+------------+---------------+
| Player_Name     | Total_Runs | Total_Wickets |
+-----------------+------------+---------------+
| Mohammad Hafeez |       6614 |           139 |
| Ravindra Jadeja |       2411 |           188 |
+-----------------+------------+---------------+
2 rows in set (0.00 sec)
```

The following view shows all the stadiums big enough to accommodate more than an audience of 50000 people.

```
mysql> create view Large_Stadium as select Venue_Name, City, Capacity from venue where Capacity>50000;
Query OK, 0 rows affected (0.02 sec)

mysql> Select * from Large_Stadium;
+--------------+---------+----------+
| Venue_Name   | City    | Capacity |
+--------------+---------+----------+
| Eden Gardens | Kolkata |    70000 |
+--------------+---------+----------+
1 row in set (0.00 sec)
```

Stored procedures

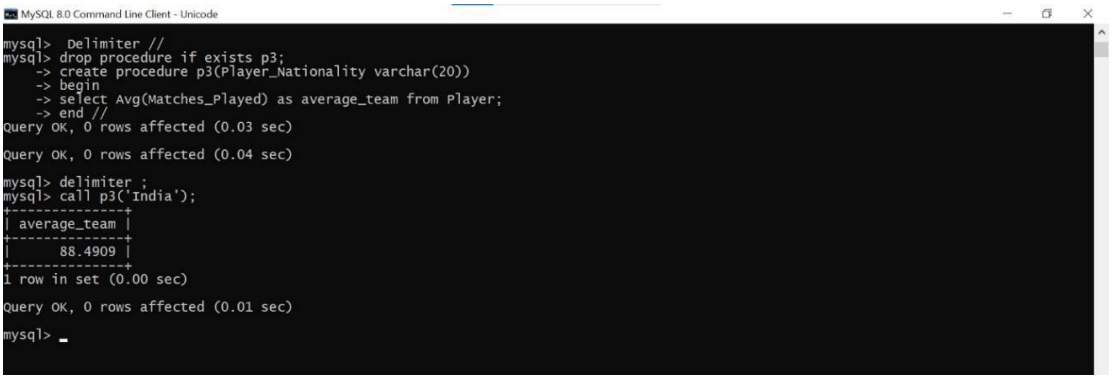
The following code creates a procedure with player name as input and displays all the attributes of the relation Batsman.



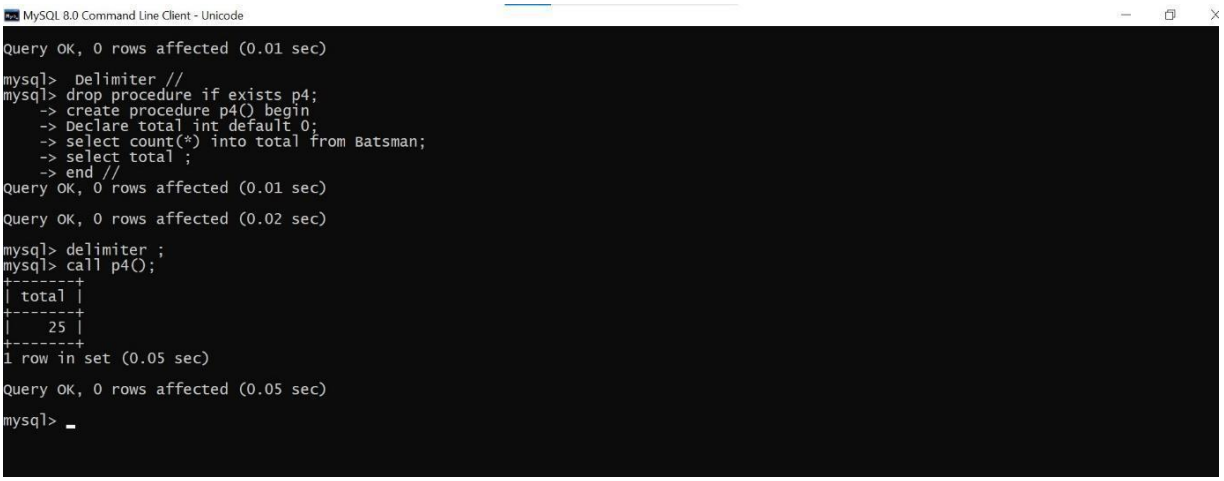
The following creates a procedure without input and finds players whose age is 30.

```
mysql> Delimiter //
mysql> drop procedure if exists p1;
    -> create procedure p1() begin
    -> set @age=30;
    -> select * from player where age = @age;
    -> end //
Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.08 sec)

mysql> delimiter ;
mysql> call p1();
+------------------+------+------+-------------+-----------------+
| Player_Name      | Age  | Team | Role        | Matches_Played |
+------------------+------+------+-------------+-----------------+
| Fakhar Zaman     |   30 | PK   | Batsman     |              48 |
| James Neesham    |   30 | KKR  | All-Rounder |              66 |
| Joe Root         |   30 | RCB  | Batsman     |             149 |
| Kane Williamson  |   30 | KKR  | Batsman     |             151 |
| Yuzvendra Chahal |   30 | PK   | Bowler      |              54 |
+------------------+------+------+-------------+-----------------+
5 rows in set (0.09 sec)
```

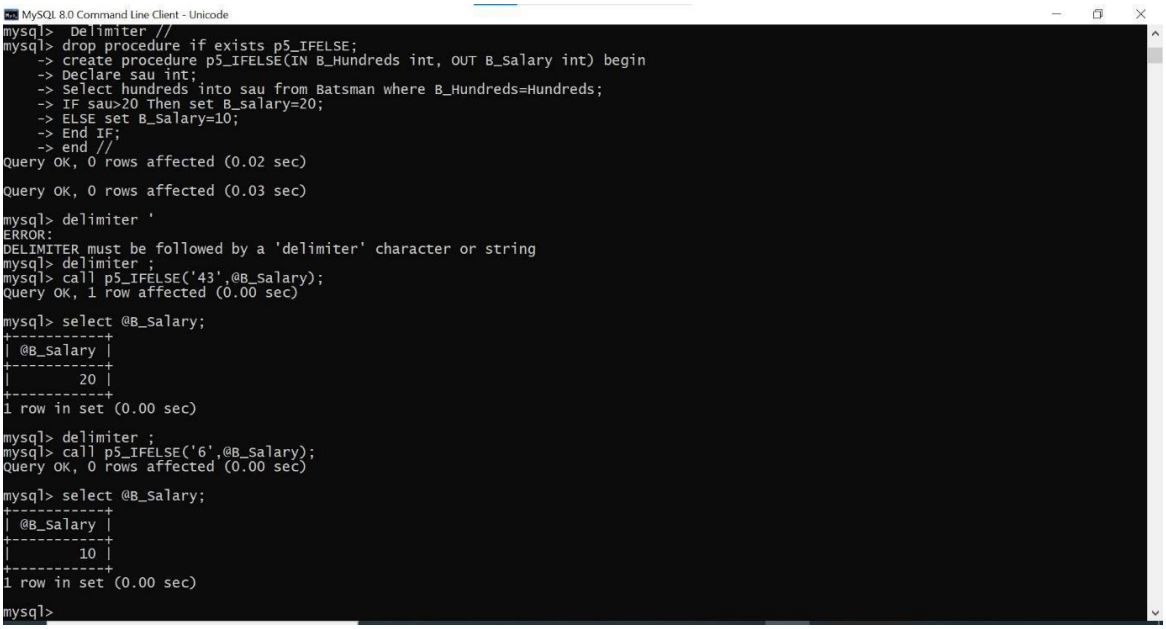
The following creates a procedure with player nationality as input and displays the average matches played by them



The following creates a procedure in which a variable has been declared which stores the count of the number of batsmen.

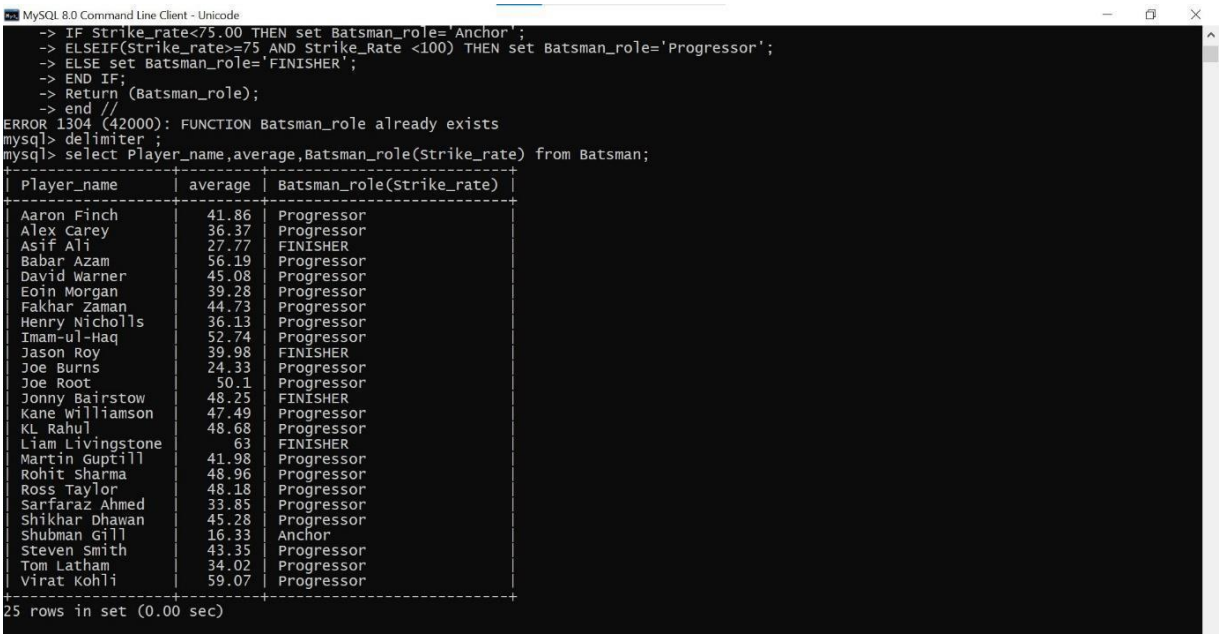


The followings code creates a procedure which uses an if-else statement.



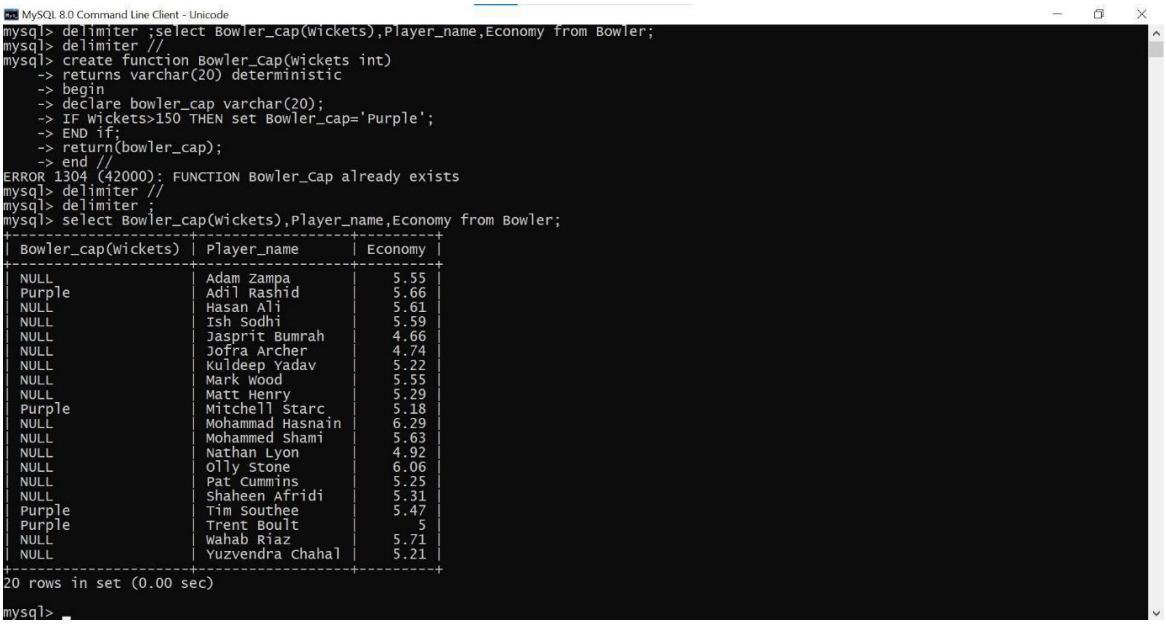
Stored functions

The following function assigns roles to various batsmen.



```
MySQL 8.0 Command Line Client - Unicode
    -> IF Strike_rate<75.00 THEN set Batsman_role='Anchor';
    -> ELSEIF(Strike_rate>=75 AND Strike_Rate <100) THEN set Batsman_role='Progressor';
    -> ELSE set Batsman_role='FINISHER';
    -> END IF;
    -> Return (Batsman_role);
    -> end //
ERROR 1304 (42000): FUNCTION Batsman_role already exists
mysql> delimiter ;
mysql> select Player_name,average,Batsman_role(Strike_rate) from Batsman;
+------------------+---------+---------------------------+
| Player_name      | average | Batsman_role(Strike_rate) |
+------------------+---------+---------------------------+
| Aaron Finch      |   41.86 | Progressor                |
| Alex Carey       |   36.37 | Progressor                |
| Asif Ali         |   27.77 | FINISHER                  |
| Babar Azam       |   56.19 | Progressor                |
| David Warner     |   45.08 | Progressor                |
| Eoin Morgan      |   39.28 | Progressor                |
| Fakhar Zaman     |   44.73 | Progressor                |
| Henry Nicholls   |   36.13 | Progressor                |
| Imam-ul-Haq      |   52.74 | Progressor                |
| Jason Roy        |   39.98 | FINISHER                  |
| Joe Burns        |   24.33 | Progressor                |
| Joe Root         |    50.1 | Progressor                |
| Jonny Bairstow   |   48.25 | FINISHER                  |
| Kane Williamson  |   47.49 | Progressor                |
| KL Rahul         |   48.68 | Progressor                |
| Liam Livingstone |      63 | FINISHER                  |
| Martin Guptill   |   41.98 | Progressor                |
| Rohit Sharma     |   48.96 | Progressor                |
| Ross Taylor      |   48.18 | Progressor                |
| Sarfaraz Ahmed   |   33.85 | Progressor                |
| Shikhar Dhawan   |   45.28 | Progressor                |
| Shubman Gill     |   16.33 | Anchor                    |
| Steven Smith     |   43.35 | Progressor                |
| Tom Latham       |   34.02 | Progressor                |
| Virat Kohli      |   59.07 | Progressor                |
+------------------+---------+---------------------------+
25 rows in set (0.00 sec)
```

The following function assigns the Purple Cap to accomplished bowlers using the wickets attribute.



```
MySQL 8.0 Command Line Client - Unicode
mysql> delimiter ;select Bowler_cap(Wickets),Player_name,Economy from Bowler;
mysql> delimiter //
mysql> create function Bowler_Cap(Wickets int)
    -> returns varchar(20) deterministic
    -> begin
    -> declare bowler_cap varchar(20);
    -> IF Wickets>150 THEN set Bowler_cap='Purple';
    -> END if;
    -> return(bowler_cap);
    -> end //
ERROR 1304 (42000): FUNCTION Bowler_Cap already exists
mysql> delimiter //
mysql> delimiter ;
mysql> select Bowler_cap(Wickets),Player_name,Economy from Bowler;
+--------------------+-----------------+---------+
| Bowler_cap(Wickets) | Player_name     | Economy |
+--------------------+-----------------+---------+
| NULL               | Adam Zampa      |    5.55 |
| Purple             | Adil Rashid     |    5.66 |
| NULL               | Hasan Ali       |    5.61 |
| NULL               | Ish Sodhi       |    5.59 |
| NULL               | Jasprit Bumrah  |    4.66 |
| NULL               | Jofra Archer    |    4.74 |
| NULL               | Kuldeep Yadav   |    5.22 |
| NULL               | Mark Wood       |    5.55 |
| NULL               | Matt Henry      |    5.29 |
| Purple             | Mitchell Starc  |    5.18 |
| NULL               | Mohammad Hasnain |    6.29 |
| NULL               | Mohammed Shami  |    5.63 |
| NULL               | Nathan Lyon     |    4.92 |
| NULL               | Olly Stone      |    6.06 |
| NULL               | Pat Cummins     |    5.25 |
| NULL               | Shaheen Afridi  |    5.31 |
| Purple             | Tim Southee     |    5.47 |
| Purple             | Trent Boult     |       5 |
| NULL               | Wahab Riaz      |    5.71 |
| NULL               | Yuzvendra Chahal |    5.21 |
+--------------------+-----------------+---------+
20 rows in set (0.00 sec)

mysql>
```

The following function classifies the venue sizes.

```
mysql> delimiter //
mysql> create function venue_size(capacity int)
    -> returns varchar(20) deterministic
    -> begin
    -> declare venue_size varchar(20);
    -> IF capacity < 50000 THEN Set Venue_size='L';
    -> ELSE Set venue_size = 'XL';
    -> END IF;
    -> Return(Venue_Size);
    -> end //
Query OK, 0 rows affected (0.08 sec)

mysql> delimiter ;
mysql> select venue_name, venue_size(capacity) from Venue;
+--------------------------+----------------------+
| venue_name               | venue_size(capacity) |
+--------------------------+----------------------+
| Eden Gardens             | XL                   |
| HPCA Stadium             | L                    |
| M. Chinnaswamy Stadium   | L                    |
| M.A. Chidambaram Stadium | L                    |
| Wankhede Stadium         | L                    |
+--------------------------+----------------------+
5 rows in set (0.08 sec)
```

The following function gives brand endorsements to players on the basis of the number of matches played.

s

```
mysql> delimiter //
mysql> create function Player_Brand(Matches_Played int)
    -> returns varchar(20) deterministic
    -> begin
    -> declare Player_Brand varchar(20);
    -> IF Matches_Played < 50 THEN Set Player_Brand = 'NB';
    -> ELSEIF(Matches_Played < 100 and Matches_Played >= 50) THEN Set Player_Brand = 'Gray Nicholls';
    -> ELSEIF(Matches_Played < 200 and Matches_Played >= 100) THEN Set Player_Brand = 'Puma';
    -> ELSE Set Player_Brand = 'Adidas';
    -> END IF;
    -> return(Player_Brand);
    -> end //
Query OK, 0 rows affected (0.00 sec)

mysql> delimiter ;
```

```
mysql> select player_name, matches_played, Player_Brand(matches_played), team from player;
+---------------------+----------------+-------------------------------+------+
| player_name         | matches_played | Player_Brand(matches_played)  | team |
+---------------------+----------------+-------------------------------+------+
| Aaron Finch         |            132 | Puma                          | CSK  |
| Adam Zampa          |             61 | Gray Nicholls                 | PK   |
| Adil Rashid         |            109 | Puma                          | MI   |
| Alex Carey          |             42 | NB                            | CSK  |
| Asif Ali            |             19 | NB                            | PK   |
| Babar Azam          |             78 | Gray Nicholls                 | PK   |
| Ben Stokes          |             98 | Gray Nicholls                 | RCB  |
| Colin de Grandhomme |             42 | NB                            | KKR  |
| David Warner        |            128 | Puma                          | CSK  |
| Eoin Morgan         |            243 | Adidas                        | RCB  |
| Fakhar Zaman        |             48 | NB                            | PK   |
| Glenn Maxwell       |            116 | Puma                          | CSK  |
| Hardik Pandya       |             60 | Gray Nicholls                 | MI   |
| Haris Sohail        |             42 | NB                            | PK   |
| Hasan Ali           |             53 | Gray Nicholls                 | KKR  |
| Henry Nicholls      |             52 | Gray Nicholls                 | KKR  |
| Imam-ul-Haq         |             41 | NB                            | PK   |
| Ish Sodhi           |             33 | NB                            | PK   |
| James Neesham       |             66 | Gray Nicholls                 | KKR  |
| Jason Roy           |             96 | Gray Nicholls                 | RCB  |
| Jasprit Bumrah      |             67 | Gray Nicholls                 | KKR  |
| Joe Burns           |              6 | NB                            | CSK  |
| Joe Root            |            149 | Puma                          | RCB  |
| Jofra Archer        |             17 | NB                            | KKR  |
| Jonny Bairstow      |             86 | Gray Nicholls                 | RCB  |
| Kane Williamson     |            151 | Puma                          | KKR  |
| KL Rahul            |             38 | NB                            | MI   |
| Kuldeep Yadav       |             63 | Gray Nicholls                 | RCB  |
| Liam Livingstone    |              2 | NB                            | RCB  |
| Marcus Stoinis      |             45 | NB                            | CSK  |
| Mark Wood           |             55 | Gray Nicholls                 | CSK  |
| Martin Guptill      |            186 | Puma                          | KKR  |
| Matt Henry          |             55 | Gray Nicholls                 | CSK  |
| Mitchell Starc      |             96 | Gray Nicholls                 | RCB  |
| Moeen Ali           |            109 | Puma                          | RCB  |
| Mohammad Hafeez     |            218 | Adidas                        | PK   |
| Mohammad Hasnain    |              7 | NB                            | RCB  |
| Mohammed Shami      |             79 | Gray Nicholls                 | CSK  |
| Nathan Lyon         |             29 | NB                            | KKR  |
| Olly Stone          |              4 | NB                            | PK   |
| Pat Cummins         |             69 | Gray Nicholls                 | MI   |
| Ravindra Jadeja     |            168 | Puma                          | MI   |
| Rohit Sharma        |            227 | Adidas                        | MI   |
| Ross Taylor         |            233 | Adidas                        | KKR  |
| Sarfaraz Ahmed      |            116 | Puma                          | PK   |
| Shaheen Afridi      |             23 | NB                            | CSK  |
| Shikhar Dhawan      |            142 | Puma                          | MI   |
| Shubman Gill        |              3 | NB                            | MI   |
| Steven Smith        |            128 | Puma                          | CSK  |
| Tim Southee         |            143 | Puma                          | RCB  |
| Tom Latham          |            102 | Puma                          | KKR  |
| Trent Boult         |             93 | Gray Nicholls                 | MI   |
| Virat Kohli         |            254 | Adidas                        | MI   |
| Wahab Riaz          |             91 | Gray Nicholls                 | MI   |
| Yuzvendra Chahal    |             54 | Gray Nicholls                 | PK   |
+---------------------+----------------+-------------------------------+------+
55 rows in set (0.01 sec)
```

The following function tells the broadcasting details of a tournament.

```
mysql> delimiter //
mysql> create function tournament_bc(No_of_Matches int)
    -> returns varchar(20) deterministic
    -> begin
    -> declare tournament_bc varchar(20);
    -> if No_of_Matches < 50 then Set tournament_bc = 'Star + no hl';
    -> else set tournament_bc = 'cricket09 + hl';
    -> end IF;
    -> return(tournament_bc);
    -> end //
Query OK, 0 rows affected (0.00 sec)

mysql> delimiter ;
mysql> select tournament_bc(No_of_Matches), Organizer, Tournament_name from tournament;
+------------------------------+---------------------+--------------------------+
| tournament_bc(No_of_Matches) | Organizer           | Tournament_name          |
+------------------------------+---------------------+--------------------------+
| cricket09 + hl               | CA                  | Big Bash League          |
| Star + no hl                 |  Cricket West Indies | Caribbean Premier League |
| cricket09 + hl               | BCCI                | Indian Premier League    |
| Star + no hl                 | PCB                 | Pakistan Super League    |
+------------------------------+---------------------+--------------------------+
4 rows in set (0.00 sec)
```

Conclusion

The above designed database management system is capable of achieving all the required tasks as mentioned in the abstract of the project. The system hence proves to be very useful to collect and view the data in orderly manner as per the requirements of the user. This system caters to requirements of both media and fans as well as the cricket administration. It also helps to keep the track of all the data of the players as it updates the database after every match using triggers, view, stored procedures and stored functions. In this day and age when sports are so competitive, having this kind of a system can assist teams to properly formulate their strategies. It can help them in choosing the players required to play in particular game according to their statistics. This type of system can be used in various sports and leagues whenever necessary with some changes in it according to the requirements of the game.

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