CRICKET DATABASE

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Group K

Project Link

Contributions :

1. **Amit Vikram Singh :**
    a. Created all the views and written the "view and role" part in the DBMS Project report.
    b. Done half of the tables functional dependency checking.
    c. Queries written :
        i. Given a match id, output match detail.
        ii. Query to find details of bowlingScorecard given match_id and team_id.
    d. Function in Functions and Stored Procedures section
    e. Written the whole back end of the website in Node Js and also the graphical user interface for the user page.
2. **Kuldeep Singh Bhandari :**
    a. Created triggers for different attributes in the tables and created roles for the views. Added new ERD diagram with attributes.
    b. Done half of the tables functional dependency checking
    c. Inserted data in the database.
    d. Procedures in Functions and Stored Procedures section.
    e. Queries written :
        i. Given two team names, start date and end date, display all the series played between the two teams in the interval given.
        ii. Given a match_id and player_id, write a function which returns the number of wickets taken by the player in the match.

iii. Given player_id, authority and format, return the totals runs scored and total wickets taken by the player in that format.
iv. Given match_id find the out who won the match or if it is a tie.
v. Given match id and team id, write a function to find number of runs scored by the team in that match.

3. **Rajendra Singh :**
    a. Created schema for all the tables in the database.
    b. Created layout of the admin page.
    c. Queries Written:
        i. Given two team names, start date and end date, display all the matches played between the two teams in the interval given.
        ii. function to find the number of matches played in a given stadium given stadium_id and format.
        iii. Query to find stadium detail.
        iv. Query to find details of battingScorecard given match_id and team_id.

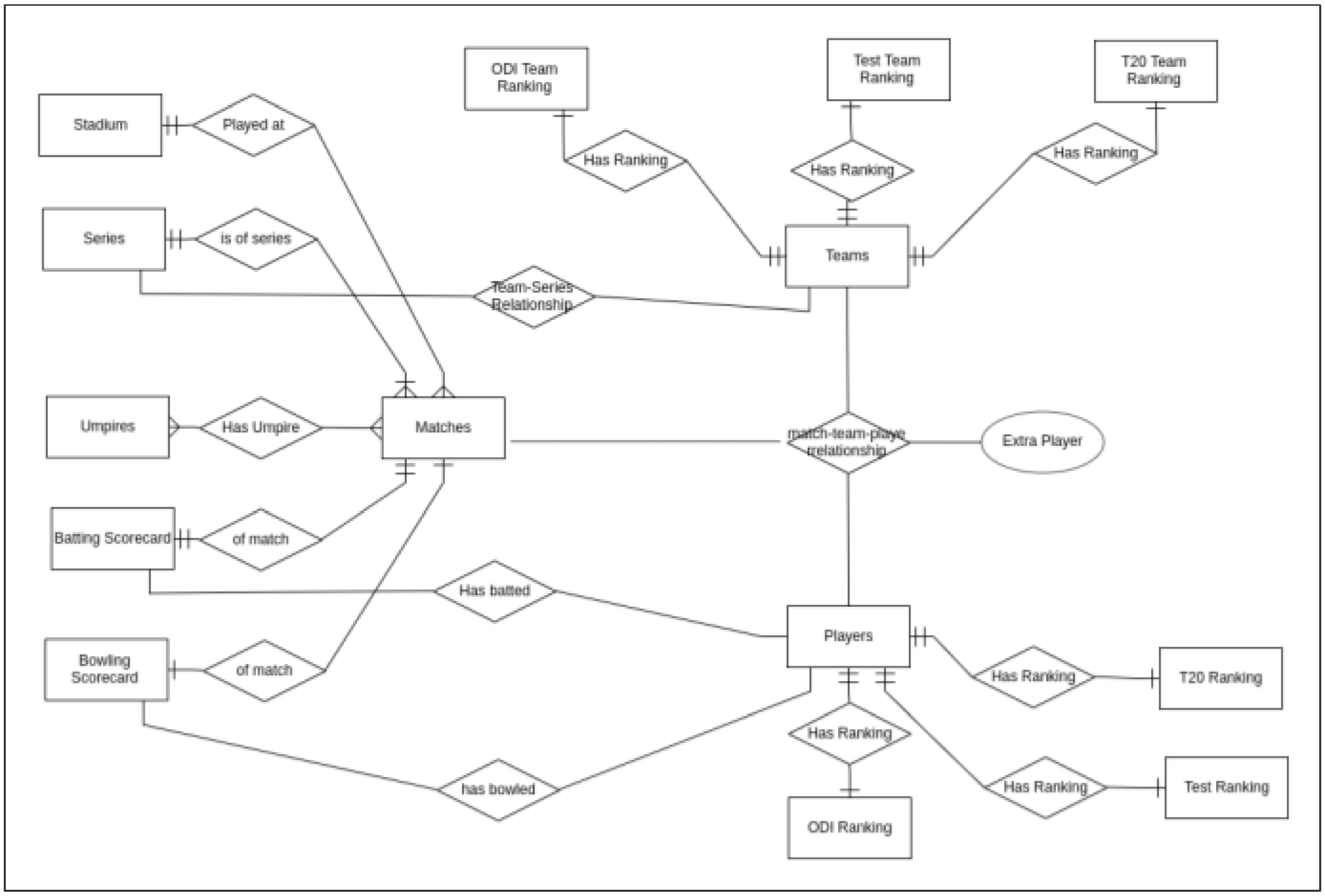
Requirements from User Point of View

1. User can be a cricket fan, cricket match analyst and also a cricket match organizer.
2. A Cricket fan can make query regarding player's score, his previous match performance, strike rate, average run scored. Such Information about a player can be derived from the other attributes.
3. While a match is going on, user can make query regarding team performance in particular country, particular stadium and also performance of team or player against particular team.
4. A Organizer like ICC or BCCI will make query regarding how much test match, odi match and T20 match a particular team has played. Which are the team which have not played enough matches against each other(This can be a relation).
5. National cricket team selectors can make a complex query like how is the performance of a player in previous k matches and What bowlers has performed well in previous k matches.
6. User can make query regarding a particular series, man of the match in that series, highest scorer, best bowler, winner of the series.
7. User will also like to know the current ICC ranking(This will be a table in the database).
8. User can also query for the previous records like Most Runs, Highest Scores, Best Batting Average, Best Batting Strike Rate, Most Hundreds, Most fifties, Longest Six,

Most fours, Most Sixes, Most Nineties. These information either can be stored or can be treated as **derived attributes**.

9. Suppose a researcher want to improve the current D/L method or wants to compare kleiber rain rule with D/L method then he/she can query for all the matches which were affected due to rain.
10. A user expects that his queries are answered as fast as possible hence its a challenge for developer is to optimize database to fulfil the requirement.
11. We can do any kind of data analysis(as any kind of data is available through queries in DBMS) over say run scored then want to draw some important insights e.g. against which team or which player it's hard to score the run and later can use to improve performance.
12. Similar version cricket database can also be used for the college cricket match in IIT Palakkad to keep a record and track the performance of players so that it becomes easier for the authorities to choose the best player based on their previous performance.

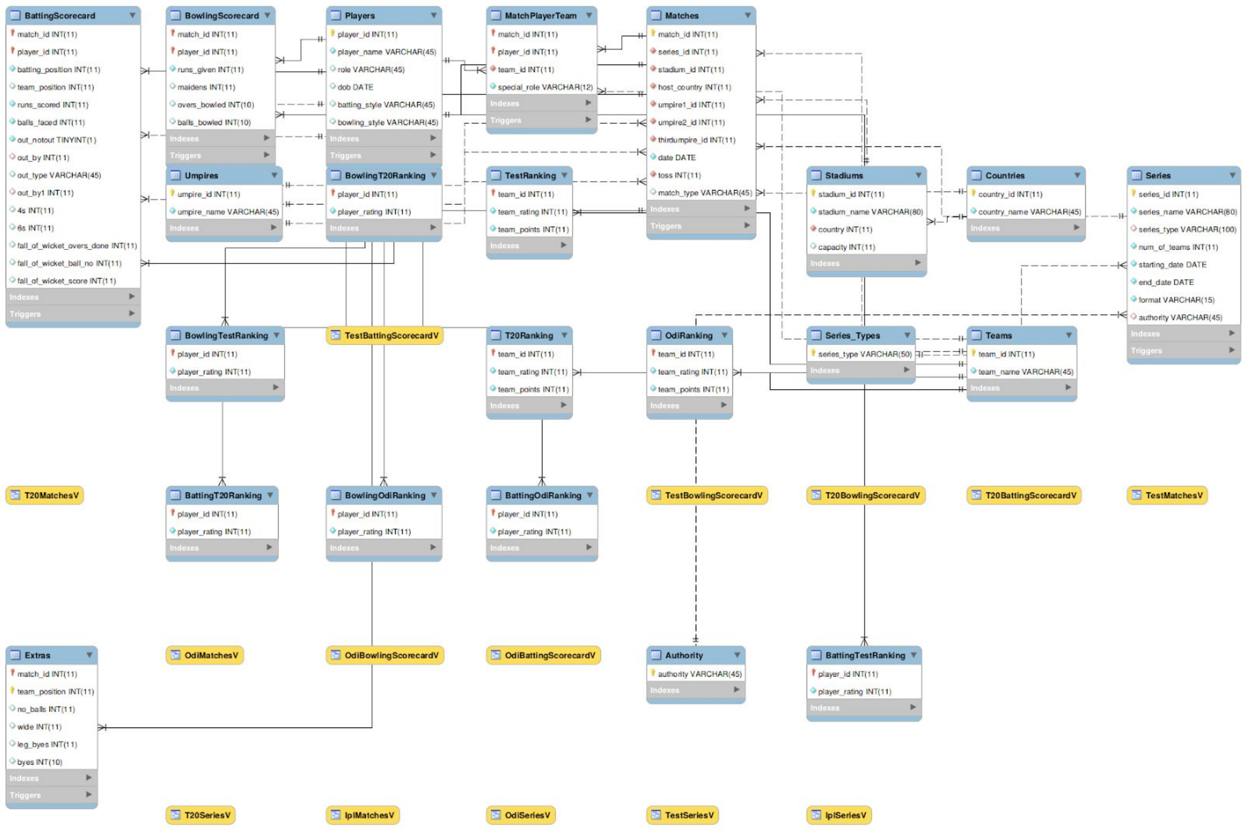
ERD Diagram



ERD Diagram for Cricket Database

Tables:

If unable to view image, try zooming in.



VIEWS :

1. **OdiMatchesView:** Select all the ODI matches organised by ICC from Matches Table.
2. **OdiSeriesView:** Select all the ODI series organised by ICC from Series Table.
3. **T20MatchesView:** Select all the T20 matches organised by ICC from Matches Table.
4. **T20SeriesView:** Select all the T20 series organised by ICC from Series Table.
5. **TestMatchesView:** Select all the Test matches organised by ICC from Matches Table.
6. **TestSeriesView:** Select all the Test series organised by ICC from Series Table.
7. **OdiBattingScorecardView:** Select the batting scorecard for all ODI Matches organised by ICC.
8. **OdiBowlingScorecardView:** Select the bowling scorecard for all ODI Matches organised by ICC.
9. **T20BattingScorecardView:** Select the Batting scorecard for all T20 Matches organised by ICC.
10. **T20BowlingScorecardView:** Select the bowling scorecard for all T20 Matches organised by ICC.

11. **TestBattingScorecardView:** Select the batting scorecard for all Test Matches organised by ICC.
12. **TestBowlingScorecardView:** Select the bowling scorecard for all Test Matches organised by ICC.
13. **IplMatchesView:** Select all the IPL Matches from Matches Table.
14. **IplSeriesView:** Select all the IPL Series from Series Table.
15. **IplBattingScorecardView:** Select the batting scorecard for all IPL Matches.
16. **IplBowlingScorecardView:** Select the bowling scorecard for all IPL Matches.
17. **CAOdiMatchesView:** Select all the ODI matches organised by Cricket Australia from Matches Table.
18. **CAOdiSeriesView:** Select all the ODI series organised by Cricket Australia from Series Table.
19. **CATestMatchesView:** Select all the Test matches organised by Cricket Australia from Matches Table.
20. **CATestSeriesView:** Select all the Test series organised by Cricket Australia from Series Table.
21. **CAT20MatchesView:** Select all the T20 Matches organised by Cricket Australia from Matches Table.
22. **CAT20SeriesView:** Select all the T20 series organised by Cricket Australia from Series Table.
23. **CAOdiBattingScorecardView:** Select the batting scorecard for all Odi Matches organised by CA.
24. **CAOdiBowlingScorecardView:** Select the bowling scorecard for all Odi Matches organised by CA.
25. **ECBOdiMatchesView:** Select all the ODI matches organised by **ECB** from Matches Table.
26. **ECBOdiSeriesView:** Select all the ODI series organised by **ECB** from Series Table.
27. **ECBTestMatchesView:** Select all the Test matches organised by **ECB** from Matches Table.
28. **ECBTestSeriesView:** Select all the Test series organised by **ECB** from Series Table.
29. **ECBT20MatchesView:** Select all the T20 Matches organised by **ECB** from Matches Table.
30. **ECBT20SeriesView:** Select all the T20 series organised by **ECB** from Series Table.
31. **IplBattingScorecardView:** Select the batting scorecard for all IPL Matches.
32. **IplBowlingScorecardView:** Select the bowling scorecard for all IPL Matches.

ROLES :

1. **ICC_ODI:** Role for writing to all the ODI matches, series, scorecard and ranking for the series organised by ICC.
2. **ICC_Test**: Role for writing to all the Test matches, series, scorecard and ranking for the series organised by ICC.
3. **ICC_T20**: Role for writing to all the T20 matches, series, scorecard and ranking for the series organised by ICC.
4. **BCCI_ODI:** Role for writing to all the ODI matches, series, scorecard and ranking for the series organised by BCCI.
5. **BCCI_Test**: Role for writing to all the Test matches, series, scorecard and ranking for the series organised by BCCI.
6. **BCCI_T20**: Role for writing to all the T20 matches, series, scorecard and ranking for the series organised by BCCI.
7. **CA_ODI:** Role for writing to all the ODI matches, series and scorecard for the series organised by Cricket Australia.
8. **CA_T20:** Role for writing to all the T20 matches, series and scorecard for the series organised by Cricket Australia.
9. **CA_Test:** Role for writing to all the Test matches, series and scorecard for the series organised by Cricket Australia.
10. **ECB_ODI:** Role for writing to all ODI matches, series and scorecard for the series organised by ECB.
11. **ECB_T20:** Role for writing to all T20 matches, series and scorecard for the series organised by ECB.
12. **ECB_Test:** Role for writing to all Test matches, series and scorecard for the series organised by ECB.

TRIGGERS :

Triggers are used in the tables just to check the constraints of the attributes in the tables as “CHECK” does not work in MySQL MariaDB.

1. Check team_position: If match format is Test then team_position should be between 1 and 4 else team position should be between 1 and 2.

```
DELIMITER ;;
```

```
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
`cricket`.`Extras_BEFORE_INSERT` BEFORE INSERT ON `Extras` FOR EACH
ROW
BEGIN
        IF 'Test' in (SELECT S.format from Series as S natural join Matches as T
        WHERE T.match_id = New.match_id) THEN
        IF New.team_position not between 1 and 4 THEN
                SIGNAL SQLSTATE '45000'
                SET MESSAGE_TEXT = 'team_position field is not valid';
        END IF;
        ELSEIF New.team_position not between 1 and 2 THEN
                SIGNAL SQLSTATE '45000'
     SET MESSAGE_TEXT = 'team_position field is not valid';
        END IF;
END */;;
DELIMITER ;
```

2. Check special Role of Player: Special role should be one of ('wicket-keeper', 'captain', 'extra', '')

```
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
`cricket`.`MatchPlayerTeam_BEFORE_INSERT` BEFORE INSERT ON
`MatchPlayerTeam` FOR EACH ROW
BEGIN
        IF New.special_role not in ('wicket-keeper', 'captain', 'extra', '') THEN
                SIGNAL SQLSTATE '45000'
     SET MESSAGE_TEXT = New.special_role;
        END IF;
END */;;
DELIMITER ;
```

3. Check Match Type:

```
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
`cricket`.`Matches_BEFORE_INSERT`
 BEFORE INSERT ON `Matches`
 FOR EACH ROW

BEGIN
```

```
        IF New.match_type not in ("normal", "semi-final", "final") THEN
                SIGNAL SQLSTATE '45000'
                SET MESSAGE_TEXT = 'match_type field is not valid';
        END IF;
END */;;
DELIMITER ;
```

4. Check Batting and Bowling Style of Players:

```
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
`cricket`.`Players_BEFORE_INSERT`
BEFORE INSERT ON `Players`
FOR EACH ROW
BEGIN
        IF New.role not in ('Batsman', 'Bowler', 'Batting-Allrounder',
                                'Bowling-Allrounder', 'WK-Batsman') THEN
                SIGNAL SQLSTATE '45000'
     SET MESSAGE_TEXT = New.role;
        END IF;

   IF New.batting_style not in ('Left Handed Bat', 'Right Handed Bat')
   THEN
                SIGNAL SQLSTATE '45000'
     SET MESSAGE_TEXT = 'batting_style field is not valid';
   END IF;

   IF New.bowling_style not in ('Right-arm fast', 'Right-arm medium',
                'Right-arm fast-medium', 'Right-arm legbreak', 'Right-arm offbreak',
     'Left-arm fast', 'Left-arm medium', 'Left-arm fast-medium',
     'Left-arm chinaman', 'Left-arm orthodox', '') THEN
                SIGNAL SQLSTATE '45000'
     SET MESSAGE_TEXT = 'bowling_style field is not valid';
        END IF;
END */;;
DELIMITER ;
```

5. Check Match Format: Match format should be one of Test, T20 and ODI

```
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
```

```
`cricket`.`Series_BEFORE_INSERT`
BEFORE INSERT ON `Series`
FOR EACH ROW
BEGIN
            IF New.format not in ("ODI", "T20", "Test") THEN
                        SIGNAL SQLSTATE '45000'
        SET MESSAGE_TEXT = "Series: format field is not valid";
            END IF;
END */;;
DELIMITER ;
```

6. Number of Balls Bowled by player in a over he did not complete:

```
DELIMITER ;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
`cricket`.`BowlingScorecard_BEFORE_INSERT` BEFORE INSERT ON
`BowlingScorecard` FOR EACH ROW
BEGIN
            IF New.balls_bowled not between 0 and 5 THEN
                        SIGNAL SQLSTATE '45000'
        SET MESSAGE_TEXT = 'balls_bowled field is not valid';
            END IF;
END */;;
DELIMITER ;
```

BCNF Analysis

Note : Superkey of initial database (whole database) : { team_id, player_id, series_id, match_id, umpire_id, stadium_id }

1. In table Matches, functional dependency stadium_id -> host_country should be satisfied but since stadium_id is not the primary key and also host_country is not subset of stadium_id, hence table Matches is not in BCNF form and it should be decomposed in relation.

    R1(stadium_id, host_country)

R2(match_id, series_id, stadium_id, umpire1_id, umpire2_id, thirdumpire_id, Date, toss, match_type).

Since we already have a schema R(stadium_id, country) we drop the attribute host_country from Matches Table.

2. For Tables BattingT20Ranking, BowlingT20Ranking, BattingOdiRanking, BowlingOdiRanking, BattingTestRanking, BowlingTestRanking and Players, we have functional dependencies player_id -> player_rating(for each format bowling and batting ranking) And player_id -> (player_name, dob, role, batting_style, bowling_style). If we would have had a table which is natural join of all the above tables then also it's in BCNF form. Hence instead of having seven tables we could have combined them in one table. But we chose not to combine them, because combing name is causing NULL values. For example, a player who has just played ipl and not international cricket will have NULL value in rating columns.
3. For Tables BattingScorecard, Bowling Scorecard and MatchPlayerTeam, we have functional dependencies of the form :

   (match_id, player_id) -> other_attributes

   We could have merged them in one table which will be in BCNF as (match_id, player_id) is the superkey. But we chose not to merge them, because merging these three tables were causing unnecessary redundancy and number of attributes of a single table would have become too much.

   The decomposed table is also in the BCNF form because F = closure (F) where F is the functional dependency as left-side is the super key in all the functional dependencies.
4. Functional dependency team_id -> team_name is responsible for creating the Team table as team_id is not superkey of the initial database.
5. Similarly, functional dependency series_id -> series_name, series_type, num_of_teams, start_date, end_date, format, authority is responsible for creating the Series table as series_id is not superkey of the initial database.
6. Similarily, for tables Matches also, we have the same case as match_id is not the superkey of initial database.

Conclusion : The whole database is in the BCNF form.

Functions and Stored Procedures

1. Function to find the number of runs scored, given player_id, authority and format.

```
CREATE DEFINER=`root`@`localhost` FUNCTION `getRuns`(my_player_id
INT, my_authority VARCHAR(45), my_format VARCHAR(15)) RETURNS
int(11)
BEGIN

    DECLARE runs INT;
SELECT
   SUM(runs_scored)
INTO runs FROM
   Series
       NATURAL JOIN
   Matches
       NATURAL JOIN
   BattingScorecard
WHERE
   player_id = my_player_id
       AND authority = my_authority
       AND format = my_format;

    IF runs IS NULL
   THEN SET runs = 0;
   END IF;

    RETURN runs;

END
```

2. Function to find the number of wickets taken, given player_id, authority and format.

```
CREATE DEFINER=`root`@`localhost` FUNCTION
`getWickets`(my_player_id INT, my_authority VARCHAR(45), my_format
VARCHAR(15)) RETURNS int(11)
BEGIN

    DECLARE wickets INT;

SELECT
   COUNT(*)
INTO wickets FROM
   Series
       NATURAL JOIN
   Matches
       NATURAL JOIN
   BattingScorecard
WHERE
   out_by = my_player_id
       AND authority = 'ICC'
       AND format = 'ODI';

   RETURN wickets;

END
```

3. Procedure to find the number of matches played by a given team in a given format organized by given authority.

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `no_of_matches_played`(IN
my_team_id INT, IN my_authority VARCHAR(45), IN my_format VARCHAR(15),
OUT matches_played INT)
BEGIN
    SELECT COUNT(*) INTO matches_played
    FROM Series natural join Matches
    WHERE team_id    = my_team_id
    AND   authority = my_authority
    AND   format     = my_format;

 END
```

4. function to find the number of matches played in a given stadium given stadium_id and format.

```
CREATE DEFINER=`root`@`localhost` FUNCTION
`getTotalMatchOnStadium`(stadiumId INT, format1 varchar(10)) RETURNS
int(11)
BEGIN
      DECLARE matchesPlayed INT;

      SELECT
            COUNT(*) INTO matchesPlayed
      FROM
            Stadiums natural join (Matches as M natural join Series)
      WHERE
            stadium_id = stadiumId and format LIKE format1;

      RETURN matchesPlayed;
```

5. Procedure to find how many times a given batsman is out by a given bowler.

```
CREATE PROCEDURE `findWicketCount` (IN batsman_id INT, IN bowler_id INT,
OUT wicket_count INT))
BEGIN

    (SELECT count(*) INTO wicket_count
      FROM BattingScorecard
    WHERE player_id = batsman_id
    AND   out_by    = bowler_id);

END
```

QUERY SECTION

1. Given two team names, start date and end date, display all the series played between the two teams in the interval given.

```
$starting_date  = 2018-02-22
$end_date       = 2020-10-10
$team1          = 1
$authority1     = 'ICC'
$team2          = 2
$authority2     = 'ICC'

TODO :
   MatchPlayerTeam can be replaced with
   (SELECT distinct match_id, team_id from MatchPlayerTeam)

SELECT distinct series_id, series_name, starting_date
FROM Series natural join Matches natural join MatchPlayerTeam
natural join Teams
WHERE starting_date > "2018-02-22"
and end_date < "2020-10-10"
and team_name = team1 and authority = authority1
and EXISTS (SELECT * FROM MatchPlayerTeam natural join Teams as
           MPT
           WHERE MPT.team_name = team2
           and MPT.authority = authority2
           and MPT.match_id = match_id);
```

2. Given a series id return all the matches in that series.

```
SET @theseries_id = 4;

delimiter //

   select match_id

   from Matches

   where series_id=@theseries_id;

//

delimiter ;
```

3. Given a series_id, output team_id and team_name of all the teams who participated in the series.

```
"with T(team_id) \
    AS (SELECT DISTINCT team_id, team_name \
    from (MatchPlayerTeam natural join \
    Matches natural join Teams) \
    WHERE series_id = ?) \
SELECT T.team_id, T.team_name from T”
```

4. Given a series_id output team_id and team_name of all the teams who participated in the series.

```
SET @theseries_id = 4;

delimiter //

   select distinct(team_id),team_name

   from Matches NATURAL JOIN MatchPlayerTeam NATURAL JOIN Teams

   where series_id=@theseries_id;

//

delimiter ;
```

5. Given a match id, output match detail.

```
WITH T AS (SELECT * FROM Matches WHERE match_id = ?),
T1 as
    (SELECT MAX(MPT.team_id) as team1_id, MIN(MPT.team_id) as team2_id
    FROM T inner join MatchPlayerTeam as MPT ON (T.match_id
=MPT.match_id)),
TEAMS as
    (SELECT T1.team1_id as team1_id, TE1.team_name as team1_name,
        T1.team2_id as team2_id, TE2.team_name as team2_name
        FROM T1 inner join Teams as TE1 ON(TE1.team_id = T1.team1_id)
        inner join Teams as TE2 ON(TE2.team_id = T1.team2_id)),

M1 AS
    (SELECT T.match_id, T.match_type, T.date, T.toss, SE.series_id,
        SE.series_name, ST.stadium_id, ST.stadium_name
        FROM T inner join Stadiums as ST ON (T.stadium_id =
ST.stadium_id)
        inner join Series as SE ON (T.series_id = SE.series_id)),

U1 as
    (SELECT * FROM T inner join Umpires ON (T.umpire1_id =
Umpires.umpire_id)),
U2 as
```

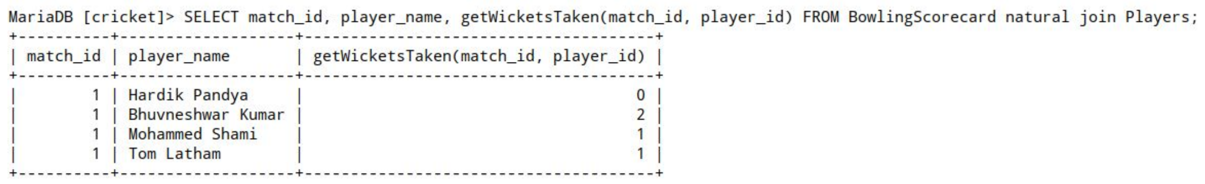
```
    (SELECT * FROM T inner join Umpires ON (T.umpire2_id =
Umpires.umpire_id)),
U3 as
    (SELECT * FROM T inner join Umpires ON (T.thirdumpire_id =
Umpires.umpire_id)),
UMPIRES AS
    (SELECT U1.umpire_id as umpire1_id, U1.umpire_name as umpire1_name,
        U2.umpire_id as umpire2_id, U2.umpire_name as umpire2_name,
        U3.umpire_id as thirdumpire_id, U3.umpire_name as
thirdumpire_name
        FROM U1, U2, U3)
SELECT M1.match_id, M1.match_type, M1.date, M1.toss, M1.series_id,
    M1.series_name, M1.stadium_id, M1.stadium_name,  TEAMS.team1_id,
    TEAMS.team1_name, TEAMS.team2_id, TEAMS.team2_name,
UMPIRES.umpire1_id,
    UMPIRES.umpire1_name, UMPIRES.umpire2_id,  UMPIRES.umpire2_name,
    UMPIRES.thirdumpire_id, UMPIRES.thirdumpire_name FROM TEAMS,
UMPIRES, M1;
```

6. Given a match_id and player_id write a function which returns the number of wickets taken by the player in the match.

```
CREATE DEFINER=`root`@`localhost` FUNCTION
`getWicketsTaken`(my_match_id INT, my_player_id INT) RETURNS
int(11)
BEGIN
     DECLARE wicketsTaken INT;

    SELECT COUNT(*) INTO wicketsTaken
    FROM BattingScorecard
    WHERE match_id = my_match_id
```

```
   AND   out_by = my_player_id;


   RETURN wicketsTaken;
END
```

SAMPLE QUERY :
SELECT match_id, player_name, getWicketsTaken(match_id, player_id) FROM BowlingScorecard natural join Players;



```
MariaDB [cricket]> SELECT match_id, player_name, getWicketsTaken(match_id, player_id) FROM BowlingScorecard natural join Players;
+----------+-------------------+--------------------------------------+
| match_id | player_name       | getWicketsTaken(match_id, player_id) |
+----------+-------------------+--------------------------------------+
|        1 | Hardik Pandya     |                                    0 |
|        1 | Bhuvneshwar Kumar |                                    2 |
|        1 | Mohammed Shami    |                                    1 |
|        1 | Tom Latham        |                                    1 |
+----------+-------------------+--------------------------------------+
```

7. Given a stadium id and format return the number of match played on the stadium.

```
DELIMITER $$

DROP FUNCTION IF EXISTS getTotalMatchOnStadium;

CREATE DEFINER=`root`@`localhost` FUNCTION
`getTotalMatchOnStadium` (stadiumId INT, format1 varchar(10))
RETURNS int(11)
BEGIN
        DECLARE matchesPlayed INT;

        SELECT
                COUNT(*) INTO matchesPlayed
        FROM
                Stadiums natural join (Matches as M natural join Series)
        WHERE
                stadium_id = stadiumId and format LIKE format1;

        RETURN matchesPlayed;
END
$$

DELIMITER ;
```

8. Given player_id, authority and format, return the totals runs scored and total wickets taken by the player in that format.

```
select player_id, player_name,
getRuns(player_id, "ICC", "ODI") as ODI_RUNS,
getRuns(player_id, "ICC", "Test") as TEST_RUNS,
getRuns (player_id, "ICC", "T20") as T20_RUNS,
getWickets(player_id, "ICC", "ODI") as ODI_wickets_taken,
getWickets(player_id, "ICC", "Test") as TEST_wickets_taken,
getWickets(player_id, "ICC", "T20") as T20_wickets_taken
from Players;
```

9. Given match id and team id, write a function to find number of runs scored by the team in that match.

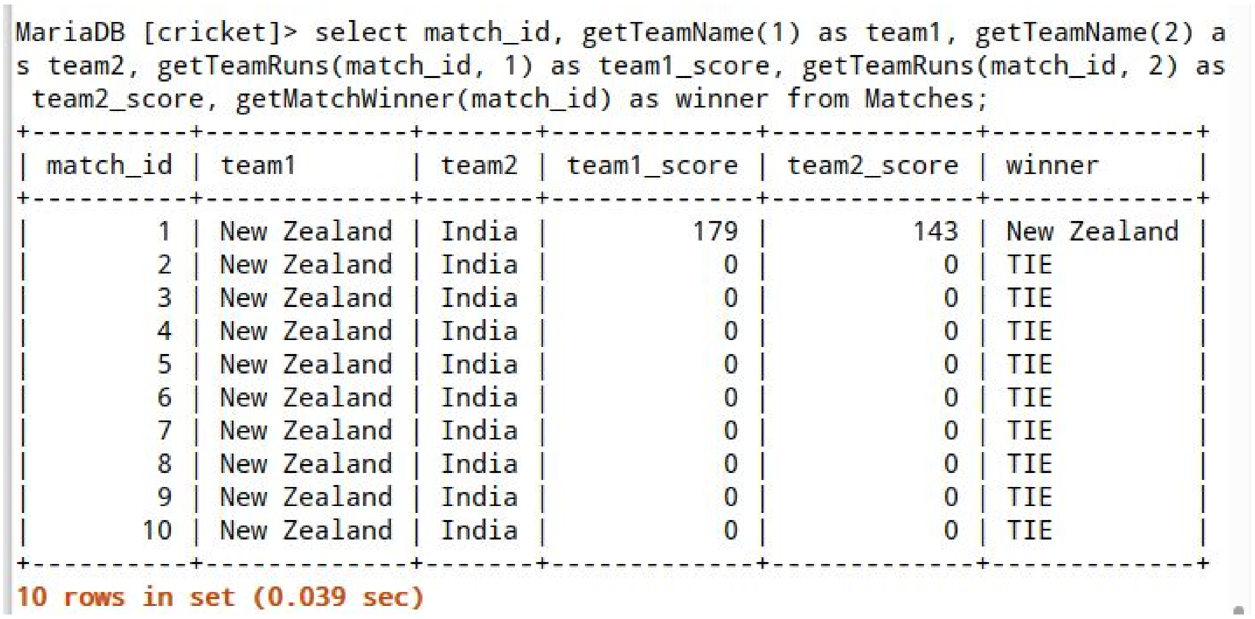
```
CREATE DEFINER=`root`@`localhost` FUNCTION
`getTeamRuns`(my_match_id INT, my_team_id INT) RETURNS int(11)
BEGIN
    DECLARE team_runs INT;
   DECLARE extra_runs INT;
   DECLARE my_team_position INT;

   SET extra_runs = getExtraRuns (my_match_id, my_team_id);

   SELECT SUM(runs_scored) INTO team_runs
   FROM Series NATURAL JOIN Matches NATURAL JOIN
   BattingScorecard NATURAL JOIN MatchPlayerTeam
   WHERE match_id= my_match_id
   AND team_id = my_team_id;

   IF team_runs IS NULL
   THEN SET team_runs = 0;
   END IF;
   RETURN team_runs + extra_runs;
END
```

10. Given match_id, find the out who won the match or if it is a tie.

```
CREATE DEFINER=`root`@`localhost` FUNCTION
`getMatchWinner`(my_match_id INT) RETURNS varchar(45) CHARSET
utf8mb4
BEGIN
   DECLARE my_team1 INT;
   DECLARE my_team2 INT;
   DECLARE team1_runs INT;
   DECLARE team2_runs INT;
   DECLARE team1_name VARCHAR(45);
   DECLARE team2_name VARCHAR(45);
   DECLARE winner VARCHAR(45);
   /* getting team ids of the teams playing the match
       with match_id <my_match_id>
    */
   SELECT distinct team_id INTO my_team1
   FROM MatchPlayerTeam
   WHERE match_id = my_match_id
   LIMIT 1;

   SELECT distinct team_id INTO my_team2
   FROM MatchPlayerTeam
   WHERE match_id = my_match_id
   AND team_id <> my_team1;

   SET team1_name = getTeamName (my_team1);
   SET team2_name = getTeamName (my_team2);
   SET team1_runs = getTeamRuns (my_match_id, my_team1);
   SET team2_runs = getTeamRuns (my_match_id, my_team2);

   IF team2_runs > team1_runs
   THEN SET winner = team2_name;
   ELSEIF team1_runs > team2_runs
   THEN SET winner = team1_name;
   ELSE SET winner = "TIE";
   END IF;

   RETURN winner;
END
```

QUERY :

```
select match_id, getTeamName(1) as team1, getTeamName(2) as team2,
getTeamRuns(match_id, 1) as team1_score, getTeamRuns(match_id, 2)
as team2_score,
getMatchWinner(match_id) as winner from Matches;
```



```
MariaDB [cricket]> select match_id, getTeamName(1) as team1, getTeamName(2) a
s team2, getTeamRuns(match_id, 1) as team1_score, getTeamRuns(match_id, 2) as
 team2_score, getMatchWinner(match_id) as winner from Matches;
+----------+-------------+-------+-------------+-------------+-------------+
| match_id | team1       | team2 | team1_score | team2_score | winner      |
+----------+-------------+-------+-------------+-------------+-------------+
|        1 | New Zealand | India |         179 |         143 | New Zealand |
|        2 | New Zealand | India |           0 |           0 | TIE         |
|        3 | New Zealand | India |           0 |           0 | TIE         |
|        4 | New Zealand | India |           0 |           0 | TIE         |
|        5 | New Zealand | India |           0 |           0 | TIE         |
|        6 | New Zealand | India |           0 |           0 | TIE         |
|        7 | New Zealand | India |           0 |           0 | TIE         |
|        8 | New Zealand | India |           0 |           0 | TIE         |
|        9 | New Zealand | India |           0 |           0 | TIE         |
|       10 | New Zealand | India |           0 |           0 | TIE         |
+----------+-------------+-------+-------------+-------------+-------------+
10 rows in set (0.039 sec)
```