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Details

Aim

Implementation of database creation using PostgreSQL.

Prerequisites

- Object oriented concepts.
- Enhanced Entity Relationship diagram.
- PostgreSQL Queries.

Outcome

- Features of database management system.
- Analyze project requirements.
- Understand Structure of Project (Object Hierarchy).
- Database structure, gathering required data.

Procedure

- Data Collection
- Enhanced Entity Relationship Diagram
- Develop a database
- Create all the required tables
- Insert real data into the created tables
- Generation of queries to analyze data and get an interpretation

Problem Statement

The best team and player in the IPL are decided by the number of times a particular team has won the tournament and the most number of times a player has won Man of the Match

Solution

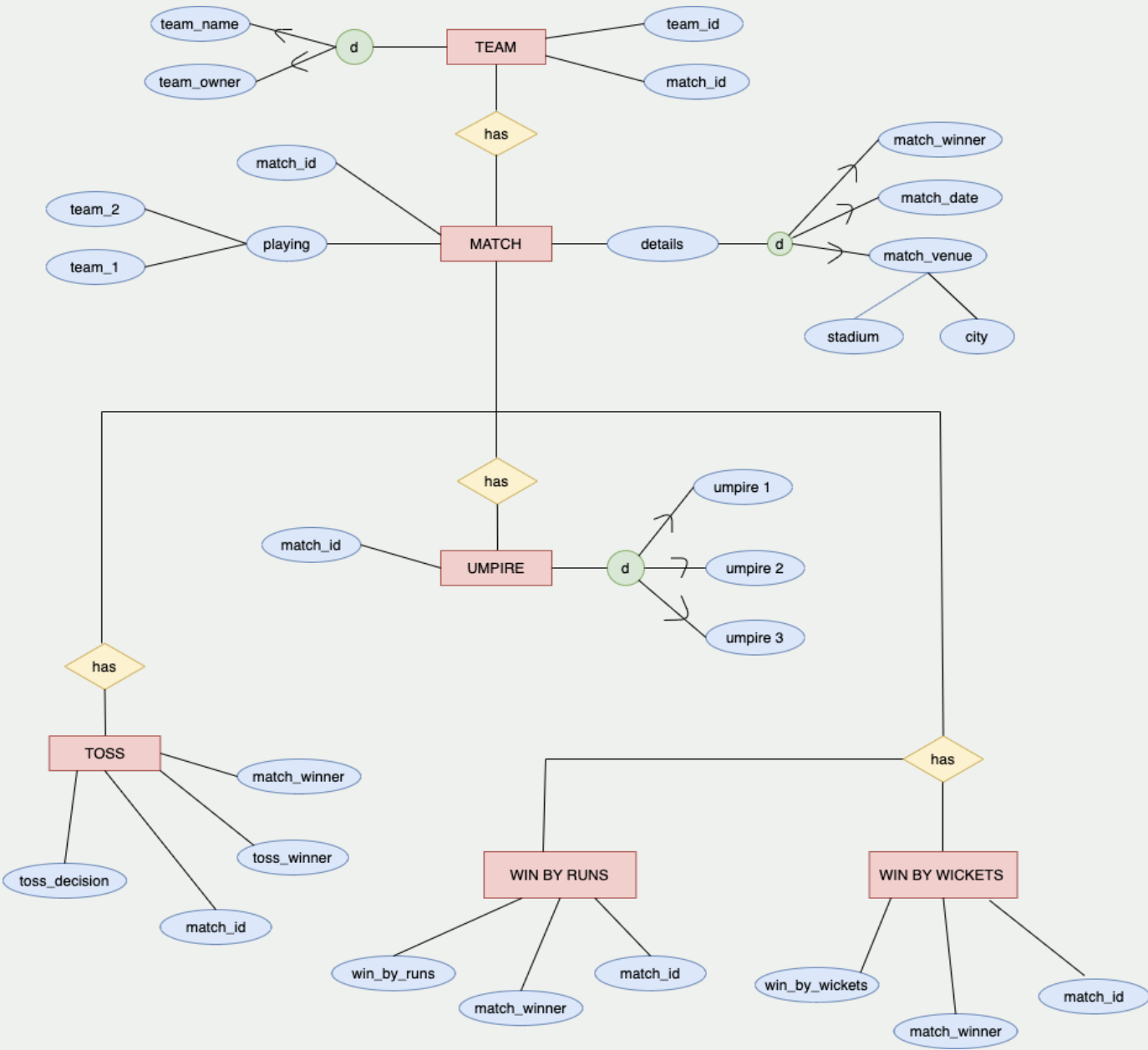
We have created a database on Postgres using tables containing various data about the team as well as the players. Using implementation of queries we are trying to find which has been the best team in the IPL so far on the basis of stats and not just tournament wins. We also want to interpret the best player on the basis of the number of times he has won the Player of the Match regardless of which team he is a part of or which team won the tournament.

Data

We have used the data of IPL from **2008-2017**, consisting of all the 13 teams which are functional as well as non-functional today.

Teams like **Gujarat Lions, Pune Warriors, Rising Pune Supergiant, Deccan Chargers**, these teams are not functional today but they have been a part of the IPL.

Enhanced Entity Relationship Diagram



Creating Tables

1. Match

```
CREATE TABLE "public"."Match" (  
  "match_id" serial,  
  "date" date,  
  "city" text,  
  "team_1" text,  
  "team_2" text,  
  "winner" text,  
  "player_of_match" text,  
  PRIMARY KEY ("match_id")  
);
```

2. Win by Runs

```
CREATE TABLE "public"."Win by Runs" (  
  "match_id" serial,  
  "winner" text,  
  "win_by_runs" text,  
  PRIMARY KEY ("match_id"),  
  CONSTRAINT "match_id" FOREIGN KEY ("match_id") REFERENCES  
  "public"."Match"("match_id")  
);
```

3. Win by Wickets

```
CREATE TABLE "public"."Win by Wickets" (  
  "match_id" serial,  
  "winner" text,  
  "win_by_wickets" text,  
  PRIMARY KEY ("match_id"),  
  CONSTRAINT "match_id" FOREIGN KEY ("match_id") REFERENCES  
  "public"."Match"("match_id")  
);
```

4. Toss

```
CREATE TABLE "public"."toss" (  
  "match_id" serial,  
  "toss_winner" text,  
  "toss_decision" text,  
  "match_winner" text,  
  PRIMARY KEY ("match_id"),  
  CONSTRAINT "match_id" FOREIGN KEY ("match_id") REFERENCES  
  "public"."Match"("match_id")  
);
```

5. Umpire

```
CREATE TABLE "public"."umpire" (  
  "match_id" serial,  
  "date" date,  
  "umpire1" text,  
  "umpire2" text,  
  PRIMARY KEY ("match_id"),  
  CONSTRAINT "match_id" FOREIGN KEY ("match_id") REFERENCES  
  "public"."Match"("match_id")  
);
```

6. Teams

```
INSERT INTO "public"."teams"("team_id", "team") VALUES(1, 'Mumbai  
Indians') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(2, 'Chennai  
Super Kings') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(3, 'Royal  
Challengers Bangalore') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(4,  
'Sunrisers Hyderabad') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(5, 'Kolkata  
Knight Riders') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(6, 'Kings  
XI Punjab') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(7, 'Delhi  
Daredevils') RETURNING "team_id", "team";  
INSERT INTO "public"."teams"("team_id", "team") VALUES(8, 'Deccan  
Chargers') RETURNING "team_id", "team";
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```

Implementation of Queries

1. Number of times a team has won matches in the league and arranging them in descending order.

```
1 SELECT winner,count(winner)
2 FROM match
3 GROUP BY winner
4 ORDER BY COUNT(winner) DESC
5 LIMIT 13;
```

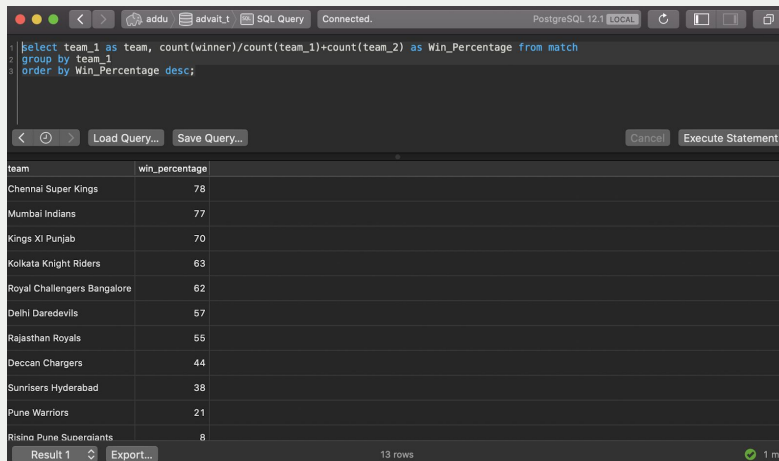
winner	count	
Mumbai Indians	80	
Chennai Super Kings	79	
Royal Challengers Bangalore	70	
Kolkata Knight Riders	68	
Kings XI Punjab	63	
Rajasthan Royals	63	
Delhi Daredevils	56	

2. Number of times a player has won Man of the Match award

```
1 SELECT player_of_match, COUNT(player_of_match)
2 FROM match
3 GROUP BY player_of_match
4 ORDER BY COUNT(player_of_match) DESC
5 LIMIT 5;
6
```

player_of_match	count	
CH Gayle	17	
YK Pathan	16	
AB de Villiers	15	
DA Warner	14	
SK Raina	13	


3. Calculating the win percentage of each team



```
select team_1 as team, count(winner)/count(team_1)+count(team_2) as Win_Percentage from match
group by team_1
order by Win_Percentage desc;
```

team	win_percentage
Chennai Super Kings	78
Mumbai Indians	77
Kings XI Punjab	70
Kolkata Knight Riders	63
Royal Challengers Bangalore	62
Delhi Daredevils	57
Rajasthan Royals	55
Deccan Chargers	44
Sunrisers Hyderabad	38
Pune Warriors	21
Rising Pune Supergiants	8

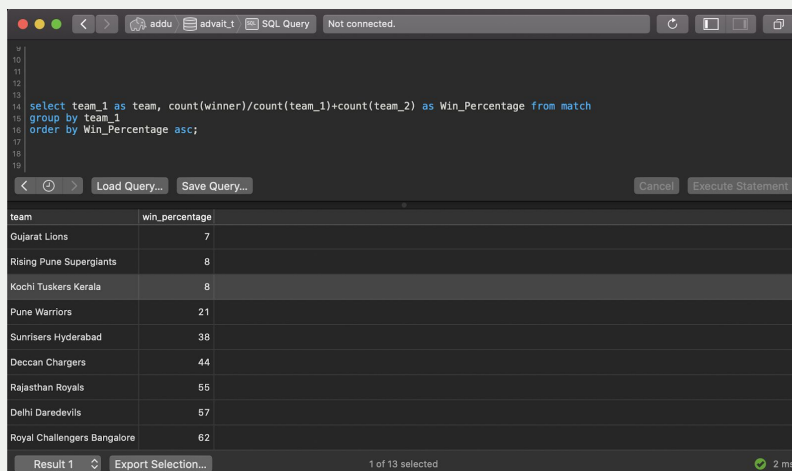
4. Number of times Chennai Super Kings has won in each city



```
select city, count(winner) from match
where match.winner = 'Chennai Super Kings'
group by city
order by count(city) desc;
```

city	count
Chennai	33
Mumbai	8
Delhi	5
Kolkata	4
Bangalore	4

5. Least Successful team



```
select team_1 as team, count(winner)/count(team_1)+count(team_2) as Win_Percentage from match
group by team_1
order by Win_Percentage asc;
```

team	win_percentage
Gujarat Lions	7
Rising Pune Supergiants	8
Kochi Tuskers Kerala	8
Pune Warriors	21
Sunrisers Hyderabad	38
Deccan Chargers	44
Rajasthan Royals	55
Delhi Daredevils	57
Royal Challengers Bangalore	62

Conclusion

By executing these queries and understanding them, we can say that the team that has won the most number of matches is Mumbai Indians, but it does not mean that Mumbai Indians is the most successful team in IPL.

The most successful team in the IPL is Chennai Super Kings, we can say that as they have the highest win percentage and they have won a lot of games on their home ground as well as in away games.

We also understand that the most successful player is Chris Gayle, as he has won the most Man of the Match awards in the history of the tournament