

Sports Tournament Tracker - Project Report

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Sports Tournament Tracker

Developer: Jyotheesh Reddy

Database: SQL Server

1. Introduction

The Sports Tournament Tracker is a database-driven project designed to manage, track, and analyze sports tournaments effectively. The system keeps records of teams, players, matches, player statistics, and tournament results. It simplifies data management and provides features like tracking match results, analyzing player performance, generating leaderboards, and exporting reports.

2. Abstract

The Sports Tournament Tracker aims to provide an efficient platform for managing sports tournaments using SQL Server. The database allows administrators to add teams, players, schedule and manage matches, track player statistics, generate leaderboards, and export reports for analysis. The project demonstrates how relational databases can be used to manage real-time tournament data efficiently.

3. Tools Used

Tool / Technology	Purpose
SQL Server	Database management and query execution
SQL Server Management Studio (SSMS)	IDE for writing, testing, and managing SQL queries

4. Steps Involved in Building the Project

Step 1 — Requirements Analysis

Identified the entities: Teams, Players, Matches, PlayerStats. Determined relationships between them: One team → Many players, One match → Multiple player stats, One team → Multiple matches..

Step 2 — Creating Tables

Created tables Teams, Players, Matches, and PlayerStats using SQL Server DDL commands with proper constraints.

Step 3 — Inserting Sample Data

Inserted sample data into Teams, Players, Matches, and PlayerStats tables.

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Step 4 — Writing Queries

Wrote SELECT, JOIN, GROUP BY, and aggregate queries to analyze performance.

Step 5 — Creating Views for Leaderboards

Created Team Leaderboard and Player Performance views to simplify data access.

Step 6 — Using CTEs for Analytics

Used Common Table Expressions (CTEs) to calculate average player performance.

Step 7 — Exporting Reports

Exported team and player statistics into CSV and Excel formats using SSMS.

5. Database Schema

The database schema for the Sports Tournament Tracker project:

```
-----  
-- STEP 1: CREATE DATABASE  
-----
```

```
CREATE DATABASE SportsTournament;  
USE SportsTournament;
```

```
-----  
-- STEP 2: CREATE TABLES  
-----
```

```
-- 1. Teams Table
```

```
CREATE TABLE Teams (  
    team_id INT PRIMARY KEY IDENTITY(1,1),  
    team_name VARCHAR(20) NOT NULL,  
    city VARCHAR(20)  
);  
GO
```

```
SELECT * FROM Teams
```

```
-- 2. Players Table
```

```
CREATE TABLE Players (  
    player_id INT PRIMARY KEY IDENTITY(1,1),  
    player_name VARCHAR(20) NOT NULL,  
    team_id INT,  
    role VARCHAR(20),  
    CONSTRAINT FK_Players_Teams FOREIGN KEY (team_id)  
    REFERENCES Teams(team_id)  
);  
GO
```

```
SELECT * FROM Players
```

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-- 3. Matches Table

```
CREATE TABLE Matches (  
    match_id INT PRIMARY KEY IDENTITY(1,1),  
    match_date DATE,  
    team1_id INT FOREIGN KEY (team1_id) REFERENCES Teams(team_id),  
    team2_id INT FOREIGN KEY (team2_id) REFERENCES Teams(team_id),  
    team1_score INT,  
    team2_score INT,  
    winner_team_id INT FOREIGN KEY (winner_team_id) REFERENCES Teams(team_id)  
);  
GO  
SELECT * FROM Matches
```

-- 4. PlayerStats Table

```
CREATE TABLE PlayerStats (  
    stat_id INT PRIMARY KEY IDENTITY(1,1),  
    match_id INT FOREIGN KEY (match_id) REFERENCES Matches(match_id),  
    player_id INT FOREIGN KEY (player_id) REFERENCES Players(player_id),  
    runs INT DEFAULT 0,  
    wickets INT DEFAULT 0,  
);  
GO  
SELECT * FROM PlayerStats
```

----- -- STEP 3: INSERT SAMPLE DATA -----

-- Insert Teams

```
INSERT INTO Teams (team_name, city) VALUES  
( 'Warriors', 'Mumbai'),  
( 'Titans', 'Delhi'),  
( 'Riders', 'Bangalore'),  
( 'Kings', 'Hyderabad'),  
( 'Giants', 'Chennai');  
GO  
SELECT * FROM Teams
```

-- Insert Players

```
INSERT INTO Players (player_name, team_id, role) VALUES  
( 'Rohit Sharma', 1, 'Batsman'),  
( 'Jasprit Bumrah', 1, 'Bowler'),  
( 'Virat Kohli', 3, 'Batsman'),  
( 'AB de Villiers', 3, 'Batsman'),  
( 'David Warner', 4, 'Batsman'),  
( 'Rashid Khan', 4, 'Bowler'),  
( 'Shubman Gill', 2, 'Batsman'),  
( 'Mohammed Shami', 2, 'Bowler'),  
( 'M S Dhoni', 5, 'WK Batsman'),  
( 'Ravindra Jadeja', 5, 'ALL Rounder');  
GO  
SELECT * FROM Players
```

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-- Insert Matches

```
INSERT INTO Matches (match_date, team1_id, team2_id, team1_score, team2_score,
winner_team_id) VALUES
('2025-08-01', 1, 2, 90, 77, 1),
('2025-08-02', 3, 4, 127, 73, 3),
('2025-08-03', 5, 2, 97, 84, 5),
('2025-08-04', 1, 3, 64, 66, 3),
('2025-08-05', 2, 4, 135, 120, 2),
('2025-08-06', 1, 5, 120, 103, 1),
('2025-08-07', 1, 4, 107, 109, 4),
('2025-08-08', 2, 3, 117, 120, 3),
('2025-08-09', 4, 5, 105, 106, 5),
('2025-08-10', 5, 3, 84, 67, 5);
GO
SELECT * FROM Matches
```

-- Insert Player Stats

```
INSERT INTO PlayerStats (match_id, player_id, runs, wickets) VALUES
(1, 1, 70, 0),
(1, 2, 15, 3),
(1, 7, 65, 0),
(1, 8, 10, 2),

(2, 3, 80, 0),
(2, 4, 45, 0),
(2, 5, 60, 0),
(2, 6, 10, 4),

(3, 9, 73, 0),
(3, 10, 49, 2),
(3, 7, 68, 0),
(3, 8, 20, 0),

(4, 1, 48, 0),
(4, 2, 14, 3),
(4, 3, 40, 0),
(4, 4, 25, 2),

(5, 7, 110, 0),
(5, 8, 24, 3),
(5, 5, 98, 0),
(5, 6, 20, 2),

(6, 1, 88, 0),
(6, 2, 37, 3),
(6, 9, 64, 0),
(6, 10, 38, 2),

(7, 1, 100, 0),
(7, 2, 5, 3),
(7, 5, 90, 0),
(7, 6, 16, 2),
```

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```
(8, 7, 102, 0),  
(8, 8, 12, 3),  
(8, 3, 80, 0),  
(8, 4, 37, 2),
```

```
(9, 5, 70, 0),  
(9, 6, 32, 3),  
(9, 9, 85, 0),  
(9, 10, 20, 2),
```

```
(10, 9, 20, 0),  
(10, 10, 62, 3),  
(10, 3, 40, 0),  
(10, 4, 25, 2);
```

GO

SELECT * FROM PlayerStats

```
-----  
-- STEP 4: BASIC QUERIES  
-----
```

```
-- Show all match results
```

```
SELECT m.match_id, m.match_date,  
       t1.team_name AS Team1,  
       t2.team_name AS Team2,  
       m.team1_score, m.team2_score,  
       t3.team_name AS Winner  
FROM Matches m  
JOIN Teams t1 ON m.team1_id = t1.team_id  
JOIN Teams t2 ON m.team2_id = t2.team_id  
JOIN Teams t3 ON m.winner_team_id = t3.team_id  
ORDER BY m.match_date;  
GO
```

```
-- Top 5 Run Scorers
```

```
SELECT TOP 5 p.player_name, SUM(ps.runs) AS total_runs  
FROM PlayerStats ps  
JOIN Players p ON ps.player_id = p.player_id  
GROUP BY p.player_name  
ORDER BY total_runs DESC;  
GO
```

```
-- Top 5 Wicket Takers
```

```
SELECT TOP 5 p.player_name, SUM(ps.wickets) AS total_wickets  
FROM PlayerStats ps  
JOIN Players p ON ps.player_id = p.player_id  
GROUP BY p.player_name  
ORDER BY total_wickets DESC;  
GO
```

```
-----  
-- STEP 5: CREATE LEADERBOARD VIEW  
-----
```

```
CREATE VIEW TeamLeaderboard AS
```

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```
SELECT t.team_name,
       COUNT(CASE WHEN m.winner_team_id = t.team_id THEN 1 END) AS matches_won,
       COUNT(m.match_id) AS matches_played,
       COUNT(CASE WHEN m.winner_team_id = t.team_id THEN 1 END) * 2 AS points
FROM Teams t
LEFT JOIN Matches m
ON t.team_id IN (m.team1_id, m.team2_id)
GROUP BY t.team_name;
GO

-- View Leaderboard
SELECT * FROM TeamLeaderboard;
GO

-----
-- STEP 6: AVERAGE PLAYER PERFORMANCE USING CTE
-----

WITH PlayerPerformance AS (
    SELECT p.player_name,
           SUM(ps.runs) AS total_runs,
           SUM(ps.wickets) AS total_wickets,
           COUNT(DISTINCT ps.match_id) AS matches_played
    FROM PlayerStats ps
    JOIN Players p ON ps.player_id = p.player_id
    GROUP BY p.player_name
)
SELECT player_name,
       CAST(total_runs * 1.0 / matches_played AS DECIMAL(10,2)) AS avg_runs,
       CAST(total_wickets * 1.0 / matches_played AS DECIMAL(10,2)) AS avg_wickets
FROM PlayerPerformance
ORDER BY avg_runs DESC;
GO

-----
-- STEP 7: EXPORT TEAM PERFORMANCE REPORT
-----

SELECT * FROM TeamLeaderboard;
```

6. Outputs

1.All Match Results

	match_id	match_date	Team1	Team2	team1_score	team2_score	Winner
1	1	2025-08-01	Warriors	Titans	90	77	Warriors
2	2	2025-08-02	Riders	Kings	127	73	Riders
3	3	2025-08-03	Giants	Titans	97	84	Giants
4	4	2025-08-04	Warriors	Riders	64	66	Riders
5	5	2025-08-05	Titans	Kings	135	120	Titans
6	6	2025-08-06	Warriors	Giants	120	103	Warriors
7	7	2025-08-07	Warriors	Kings	107	109	Kings
8	8	2025-08-08	Titans	Riders	117	120	Riders
9	9	2025-08-09	Kings	Giants	105	106	Giants
10	10	2025-08-10	Giants	Riders	84	67	Giants

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2.Top 5 Run Scorers

	player_name	total_runs
1	Shubman Gill	345
2	David Warner	318
3	Rohit Sharma	306
4	M S Dhoni	242
5	Virat Kohli	240

3.Top 5 Wicket Takers

	player_name	total_wickets
1	Jasprit Bumrah	12
2	Rashid Khan	11
3	Ravindra Jadeja	9
4	Mohammed Shami	8
5	AB de Villiers	6

4.Team Leader Board

	team_name	matches_won	matches_played	points
1	Giants	3	4	6
2	Kings	1	4	2
3	Riders	3	4	6
4	Titans	1	4	2
5	Warriors	2	4	4

5.Average Player Performance

	player_name	avg_runs	avg_wickets
1	Shubman Gill	86.25	0.00
2	David Warner	79.50	0.00
3	Rohit Sharma	76.50	0.00
4	M S Dhoni	60.50	0.00
5	Virat Kohli	60.00	0.00
6	Ravindra Jadeja	42.25	2.25
7	AB de Villiers	33.00	1.50
8	Rashid Khan	19.50	2.75
9	Jasprit Bumrah	17.75	3.00
10	Mohammed Shami	16.50	2.00

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7.Conclusion

The Sports Tournament Tracker simplifies the management of tournaments by storing structured data for teams, players, and matches. Using SQL Server, we have implemented queries, views, and reports to analyze performance, track player statistics, and generate insights effectively.