# Cricket Database Analysis

## 01. Top 10 Batsmen by Total Runs

**Purpose:** Retrieves the top 10 batsmen based on the total runs scored in all matches.

### SQL Query

SELECT  
 batter,  
 SUM(runs\_batter) AS total\_runs  
FROM  
 deliveries  
GROUP BY  
 batter  
ORDER BY  
 total\_runs DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **batter** | **total\_runs** |
| V Kohli | 35929 |
| RG Sharma | 26339 |
| DA Warner | 25230 |
| AB de Villiers | 24389 |
| KC Sangakkara | 23176 |
| MS Dhoni | 22018 |
| JE Root | 21326 |
| KS Williamson | 21069 |
| SPD Smith | 19730 |
| HM Amla | 18829 |

## 02. Highest Team Scores per Match

**Purpose:** Lists the top 10 highest total scores achieved by a team in any single match.

### SQL Query

SELECT  
 match\_id,  
 team,  
 SUM(runs\_total) AS total\_runs  
FROM  
 deliveries  
GROUP BY  
 match\_id,  
 team  
ORDER BY  
 total\_runs DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |  |
| --- | --- | --- |
| **match\_id** | **team** | **total\_runs** |
| 233797 | Pakistan | 1078 |
| 1448350 | India | 1014 |
| 892511 | Australia | 944 |
| 1330871 | England | 921 |
| 64062 | India | 916 |
| 297808 | India | 910 |
| 602472 | Sri Lanka | 905 |
| 690349 | Sri Lanka | 892 |
| 858493 | Bangladesh | 887 |
| 352663 | England | 879 |

## 03. Matches Won by Each Team

**Purpose:** Calculates and displays the total number of matches won by each team, excluding matches that ended with no result.

### SQL Query

SELECT  
 winner,  
 COUNT(\*) AS wins  
FROM  
 matches  
WHERE  
 winner IS NOT NULL  
GROUP BY  
 winner  
ORDER BY  
 wins DESC;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **winner** | **wins** |
| Australia | 740 |
| India | 719 |
| England | 649 |
| South Africa | 563 |
| New Zealand | 490 |
| ... (122 Total Teams) ... |  |
| Slovenia | 1 |
| ICC World XI | 1 |
| Gambia | 1 |
| Barbados | 1 |
| Africa XI | 1 |

## 04. Matches Per Year

**Purpose:** Counts the total number of matches played, grouped by the year they took place.

### SQL Query

SELECT  
 strftime('%Y', date) AS year,  
 COUNT(\*) AS matches\_count  
FROM  
 matches  
GROUP BY  
 year  
ORDER BY  
 year;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **year** | **matches\_count** |
| 2001 | 1 |
| 2002 | 3 |
| 2003 | 140 |
| 2004 | 96 |
| 2005 | 91 |
| 2006 | 167 |
| 2007 | 220 |
| 2008 | 221 |
| 2009 | 270 |
| 2010 | 268 |
| 2011 | 276 |
| 2012 | 311 |
| 2013 | 329 |
| 2014 | 319 |
| 2015 | 304 |
| 2016 | 337 |
| 2017 | 339 |
| 2018 | 430 |
| 2019 | 611 |
| 2020 | 253 |
| 2021 | 604 |
| 2022 | 999 |
| 2023 | 958 |
| 2024 | 1242 |
| 2025 | 829 |

## 05. Toss Wins vs Match Wins

**Purpose:** Analyzes the relationship between winning the toss and winning the match by grouping counts for every toss\_winner/match\_winner combination.

### SQL Query

SELECT  
 toss\_winner,  
 winner,  
 COUNT(\*) AS count  
FROM  
 matches  
GROUP BY  
 toss\_winner,  
 winner  
ORDER BY  
 count DESC;

### Query Output (Results Table)

|  |  |  |
| --- | --- | --- |
| **toss\_winner** | **winner** | **count** |
| Australia | Australia | 383 |
| India | India | 352 |
| England | England | 334 |
| South Africa | South Africa | 287 |
| Pakistan | Pakistan | 251 |
| ... (1258 combinations total) ... |  |  |
| Vanuatu | Japan | 1 |
| Vanuatu | United Arab Emirates | 1 |
| Zimbabwe | Kenya | 1 |
| Zimbabwe | Scotland | 1 |
| Zimbabwe | Vanuatu | 1 |

## 06. Most Common Toss Decision

**Purpose:** Determines the frequency of each toss decision (e.g., bat or field) across all matches.

### SQL Query

SELECT  
 toss\_decision,  
 COUNT(\*) AS frequency  
FROM  
 matches  
GROUP BY  
 toss\_decision  
ORDER BY  
 frequency DESC;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **toss\_decision** | **frequency** |
| field | 4977 |
| bat | 4641 |

## 07. Average Runs Per Over by Team

**Purpose:** Calculates the average runs scored per over for each team across all their innings.

### SQL Query

SELECT  
 team,  
 ROUND(SUM(runs\_total) \* 1.0 / COUNT(DISTINCT match\_id || '-' || over), 3) AS avg\_runs\_per\_over  
FROM  
 deliveries  
GROUP BY  
 team  
ORDER BY  
 avg\_runs\_per\_over DESC;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **team** | **avg\_runs\_per\_over** |
| Royal Challengers Bengaluru | 9.864 |
| Gujarat Titans | 9.032 |
| Punjab Kings | 8.994 |
| Lucknow Super Giants | 8.984 |
| Delhi Capitals | 8.529 |
| ... (127 Teams Total) ... |  |
| China | 3.842 |
| Mali | 2.978 |
| Chile | 2.705 |
| Mongolia | 2.465 |
| Ivory Coast | 1.853 |

## 08. Top Batsmen by Average Runs

**Purpose:** Identifies the top 10 batsmen based on the average runs scored per match played.

### SQL Query

SELECT  
 batter,  
 ROUND(SUM(runs\_batter) \* 1.0 / COUNT(DISTINCT match\_id), 2) AS batting\_avg  
FROM  
 deliveries  
GROUP BY  
 batter  
ORDER BY  
 batting\_avg DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **batter** | **batting\_avg** |
| MM English | 107.00 |
| G Van Heerden | 107.00 |
| SR Waugh | 87.50 |
| JL Langer | 84.96 |
| H Kala | 84.00 |
| CJL Rogers | 80.60 |
| OJ Phillips | 80.00 |
| A Rawat | 76.50 |
| Asim Kamal | 73.00 |
| WJ Pucovski | 72.00 |

## 09. Top Teams by Total Runs

**Purpose:** Calculates the total runs scored by each team across all matches they have played.

### SQL Query

SELECT  
 team,  
 SUM(runs\_total) AS total\_runs  
FROM  
 deliveries  
GROUP BY  
 team  
ORDER BY  
 total\_runs DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **team** | **total\_runs** |
| England | 335311 |
| India | 327317 |
| Australia | 321059 |
| South Africa | 264194 |
| Sri Lanka | 255977 |
| Pakistan | 247775 |
| New Zealand | 242243 |
| West Indies | 223423 |
| Bangladesh | 166483 |
| Zimbabwe | 110781 |

## 10. Top Batsmen by Boundaries

**Purpose:** Lists the top 10 batsmen based on the combined count of fours and sixes scored.

### SQL Query

SELECT  
 batter,  
 SUM(CASE WHEN runs\_batter = 4 THEN 1 ELSE 0 END) AS fours,  
 SUM(CASE WHEN runs\_batter = 6 THEN 1 ELSE 0 END) AS sixes  
FROM  
 deliveries  
GROUP BY  
 batter  
ORDER BY  
 (fours + sixes) DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |  |
| --- | --- | --- |
| **batter** | **fours** | **sixes** |
| V Kohli | 3466 | 591 |
| RG Sharma | 2501 | 925 |
| DA Warner | 2752 | 553 |
| AB de Villiers | 2318 | 570 |
| KC Sangakkara | 2415 | 163 |
| CH Gayle | 1757 | 821 |
| MS Dhoni | 1799 | 599 |
| S Dhawan | 2096 | 290 |
| KS Williamson | 2119 | 210 |
| V Sehwag | 1981 | 291 |

## 11. Matches per City

**Purpose:** Counts the number of matches played in each city, showing the top 10 cities.

### SQL Query

SELECT  
 city,  
 COUNT(\*) AS matches\_count  
FROM  
 matches  
GROUP BY  
 city  
ORDER BY  
 matches\_count DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **city** | **matches\_count** |
| Unknown | 634 |
| Mumbai | 249 |
| Kigali City | 237 |
| Colombo | 234 |
| Dubai | 194 |
| Abu Dhabi | 192 |
| Kuala Lumpur | 190 |
| London | 184 |
| Al Amarat | 169 |
| Kolkata | 137 |

## 12. Average Runs per Over by Venue

**Purpose:** Calculates the average runs scored per over at the top 10 highest-scoring venues.

### SQL Query

SELECT  
 m.venue,  
 ROUND(SUM(d.runs\_total) \* 1.0 / COUNT(DISTINCT d.match\_id || '-' || d.over), 2) AS avg\_runs\_per\_over  
FROM  
 deliveries d  
JOIN  
 matches m ON d.match\_id = m.match\_id  
WHERE  
 m.venue IS NOT NULL  
GROUP BY  
 m.venue  
ORDER BY  
 avg\_runs\_per\_over DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **venue** | **avg\_runs\_per\_over** |
| Maharaja Yadavindra Singh International Cricket Stadium, Mullanpur, Chandigarh | 21.80 |
| Marrara Stadium, Darwin | 18.05 |
| Sawai Mansingh Stadium, Jaipur | 17.95 |
| Punjab Cricket Association IS Bindra Stadium | 17.38 |
| Sky Stadium, Wellington | 17.37 |
| Brabourne Stadium, Mumbai | 17.26 |
| Dr DY Patil Sports Academy, Navi Mumbai | 17.23 |
| Barsapara Cricket Stadium, Guwahati | 17.18 |
| Bready | 17.15 |
| Gucherre Cricket Ground | 16.88 |

## 13. Top Bowlers by Economy Rate

**Purpose:** Identifies the top 10 most economical bowlers (lowest economy rate).

### SQL Query

SELECT  
 bowler,  
 ROUND(SUM(runs\_total) \* 6.0 / COUNT(\*), 2) AS economy\_rate  
FROM  
 deliveries  
WHERE  
 bowler IS NOT NULL  
GROUP BY  
 bowler  
ORDER BY  
 economy\_rate ASC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **bowler** | **economy\_rate** |
| A Hewage | 0.00 |
| A Lyth | 0.00 |
| AC Gilchrist | 0.00 |
| C Kauripeke | 0.00 |
| KOA Powell | 0.00 |
| M Terblanche | 0.00 |
| Mohammad Yousuf | 0.00 |
| RV Uthappa | 0.00 |
| TJ Ramphoma | 0.00 |
| MS Sinclair | 0.33 |

## 14. Total Sixes by Batter

**Purpose:** Counts the total number of sixes hit by each batsman, showing the top 10.

### SQL Query

SELECT  
 batter,  
 COUNT(\*) AS sixes  
FROM  
 deliveries  
WHERE  
 runs\_batter = 6  
GROUP BY  
 batter  
ORDER BY  
 sixes DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **batter** | **sixes** |
| RG Sharma | 925 |
| CH Gayle | 821 |
| MS Dhoni | 599 |
| V Kohli | 591 |
| AB de Villiers | 570 |
| JC Buttler | 553 |
| DA Warner | 553 |
| BB McCullum | 494 |
| KA Pollard | 451 |
| GJ Maxwell | 449 |

## 15. Total Fours by Batter

**Purpose:** Counts the total number of fours hit by each batsman, showing the top 10.

### SQL Query

SELECT  
 batter,  
 COUNT(\*) AS fours  
FROM  
 deliveries  
WHERE  
 runs\_batter = 4  
GROUP BY  
 batter  
ORDER BY  
 fours DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **batter** | **fours** |
| V Kohli | 3466 |
| DA Warner | 2752 |
| RG Sharma | 2501 |
| KC Sangakkara | 2415 |
| AB de Villiers | 2318 |
| HM Amla | 2151 |
| KS Williamson | 2119 |
| JE Root | 2108 |
| S Dhawan | 2096 |
| SPD Smith | 1988 |

## 16. Most Successful Teams by Match Type

**Purpose:** Groups match winners by match\_type (e.g., T20, Test) to see which teams are most successful in specific formats.

### SQL Query

SELECT  
 match\_type,  
 winner,  
 COUNT(\*) AS wins  
FROM  
 matches  
WHERE  
 winner IS NOT NULL  
GROUP BY  
 match\_type,  
 winner  
ORDER BY  
 match\_type,  
 wins DESC;

### Query Output (Results Table)

|  |  |  |
| --- | --- | --- |
| **match\_type** | **winner** | **wins** |
| IPL | Mumbai Indians | 151 |
| IPL | Chennai Super Kings | 142 |
| IPL | Kolkata Knight Riders | 135 |
| IPL | Royal Challengers Bangalore | 114 |
| IPL | Rajasthan Royals | 114 |
| ... (161 combinations total) ... |  |  |
| TEST | Pakistan | 55 |
| TEST | West Indies | 37 |
| TEST | Bangladesh | 21 |
| TEST | Zimbabwe | 5 |
| TEST | Ireland | 2 |

## 17. Matches with No Result

**Purpose:** Counts the total number of matches that ended with no recorded winner.

### SQL Query

SELECT  
 COUNT(\*) AS no\_result\_matches  
FROM  
 matches  
WHERE  
 winner IS NULL;

### Query Output (Results Table)

|  |
| --- |
| **no\_result\_matches** |
| 0 |

## 18. Team Win % when Batting First

**Purpose:** Calculates the percentage of matches won by each team when they won the toss and the match.

### SQL Query

SELECT  
 winner,  
 ROUND(100.0 \* SUM(CASE WHEN toss\_winner = winner THEN 1 ELSE 0 END) / COUNT(\*), 2) AS win\_percent  
FROM  
 matches  
GROUP BY  
 winner  
ORDER BY  
 win\_percent DESC;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **winner** | **win\_percent** |
| Gambia | 100.00 |
| Asia XI | 100.00 |
| Gujarat Lions | 76.92 |
| Bahamas | 75.00 |
| Sweden | 70.00 |
| ... (122 Teams Total) ... |  |
| Lesotho | 0.00 |
| Israel | 0.00 |
| ICC World XI | 0.00 |
| Barbados | 0.00 |
| Africa XI | 0.00 |

## 19. Top 10 Teams by Average Runs per Match

**Purpose:** Calculates the average total runs scored by a team in each match they play, showing the top 10.

### SQL Query

SELECT  
 team,  
 ROUND(SUM(runs\_total) \* 1.0 / COUNT(DISTINCT match\_id), 2) AS avg\_runs\_per\_match  
FROM  
 deliveries  
GROUP BY  
 team  
ORDER BY  
 avg\_runs\_per\_match DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **team** | **avg\_runs\_per\_match** |
| England | 278.73 |
| Australia | 278.21 |
| India | 267.63 |
| South Africa | 255.51 |
| Sri Lanka | 247.08 |
| New Zealand | 245.43 |
| Africa XI | 242.20 |
| Asia XI | 237.80 |
| Pakistan | 236.65 |
| West Indies | 228.92 |

## 20. Batsmen with Most Dot Balls

**Purpose:** Identifies the top 10 batsmen who have faced the highest number of dot balls (balls from which 0 runs were scored by the batter).

### SQL Query

SELECT  
 batter,  
 COUNT(\*) AS dot\_balls  
FROM  
 deliveries  
WHERE  
 runs\_batter = 0  
GROUP BY  
 batter  
ORDER BY  
 dot\_balls DESC  
LIMIT 10;

### Query Output (Results Table)

|  |  |
| --- | --- |
| **batter** | **dot\_balls** |
| AN Cook | 22617 |
| V Kohli | 21996 |
| JE Root | 20061 |
| KC Sangakkara | 19957 |
| KS Williamson | 19105 |
| HM Amla | 18579 |
| SPD Smith | 18319 |
| AB de Villiers | 16550 |
| AD Mathews | 16435 |
| DPMD Jayawardene | 15810 |