IPL Data Visualization using Tableau

Problem Statement

The Indian Premier League, or IPL, is a T20 cricket league, which was founded in 2008 and is held every year. It sees participation from both national and international players, and eight teams representing eight Indian cities compete in a double round-robin format in the league stages, which are followed by playoffs. Over the years, IPL has become one of the most watched and most attended live sporting events all over the world.

You work as a data analyst at IFP, a nationally recognized news agency, which is based out of New Delhi, and provides news reports and feeds to magazines, newspapers, and TV broadcasters all over the country. The Sports Editor of the agency has approached you to build a Tableau dashboard of IPL statistics over the years since its inception to create an infographic for a newsletter that their team is working on. For this newsletter, in some cases, they will use the visual representations for their infographic, and in a few other cases, they will use important statistics after trying out the different filters and customizations that you have provided for interactivity. Therefore, you are expected to build an interactive dashboard in Tableau for this purpose.

Datasets provided

- **matches.csv** - It contains match-level information for each, and every match held in IPL from 2008 to 2017.
- **deliveries.csv** - It contains ball-by-ball information for each of the matches.

Each row in deliveries.csv data set contains

- Match related information (batting team vs bowling team)
- Player information (Bowler, Batsman, Non-striker)
- Delivery information (Runs scored, Wickets, Extras, etc.)

Each row in matches.csv data set contains:

- Match specifics (umpires, ground, etc.)
- Results (which team won, win type, player of the match, etc.)

Match Statistics

## Toss outcome vs Match outcome (for each Ground/Venue)
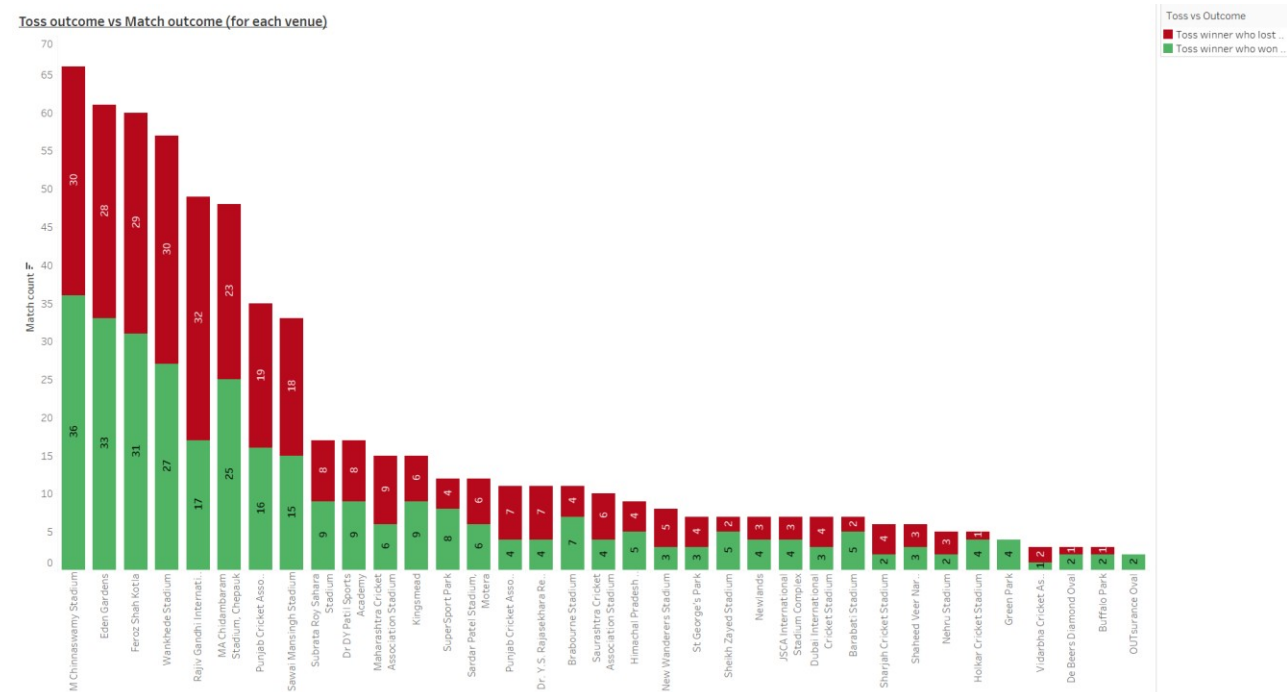
The above graph indicates the number of matches the toss winner won and lost the matches for each venue. Toss winner is derived from the data. The green color indicates the number of matches the toss winner won and red color indicates the number of matches the toss winner lost against each venue. Maximum number of matches were played at M Chinnaswamy, Eden gardens and at Feroz Shah Kotla stadiums. Maximum number of matches were won at M Chinnaswamy stadium and maximum matches were lost at Rajiv Gandhi International stadium.

## Toss outcome vs Match outcome (for each Ground/Venue)
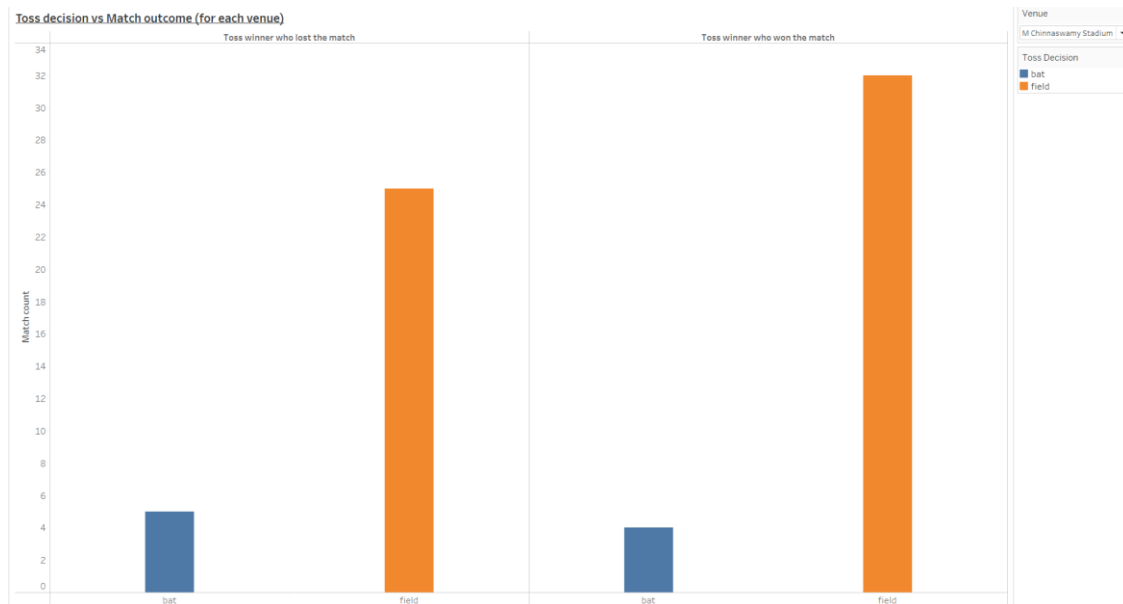
The graph displays the toss winners who chose to bat and field respectively and the corresponding number of matches they lost or won. Toss winner is derived from the data. The color shows the details of the toss decision, and the data is filtered on Venue. Toss winners at M Chinnaswamy stadium choose to field first according to the above graph.

Highest totals (across all the seasons)
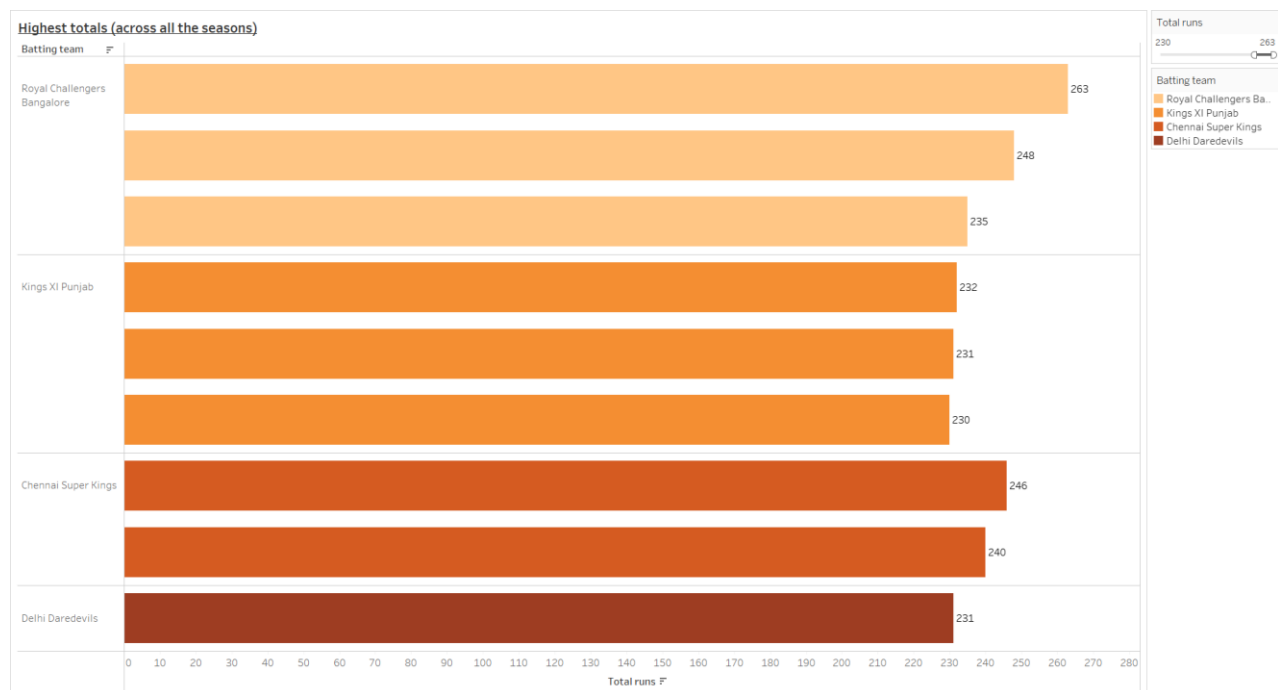
The total runs score in each match is calculated and the highest runs are filtered based on ranges of total. Color indicates the different batting teams. RCB has the highest scores of 263 and 248 across all seasons.
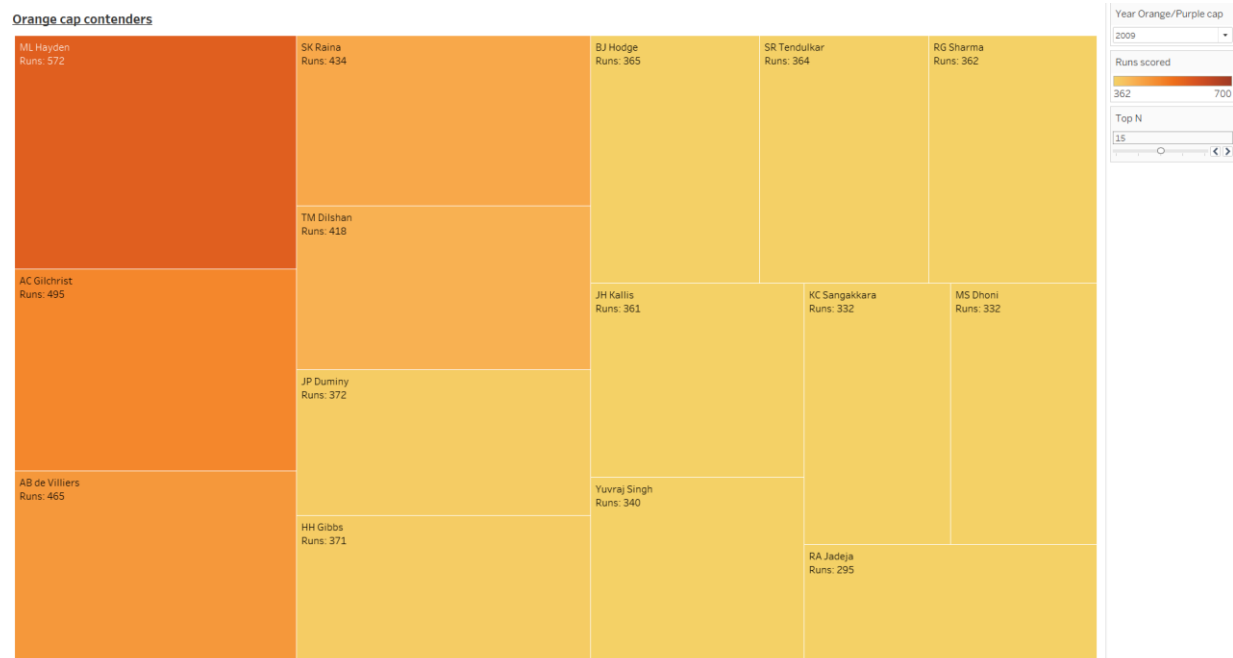
Biggest wins (by runs and by wicket)
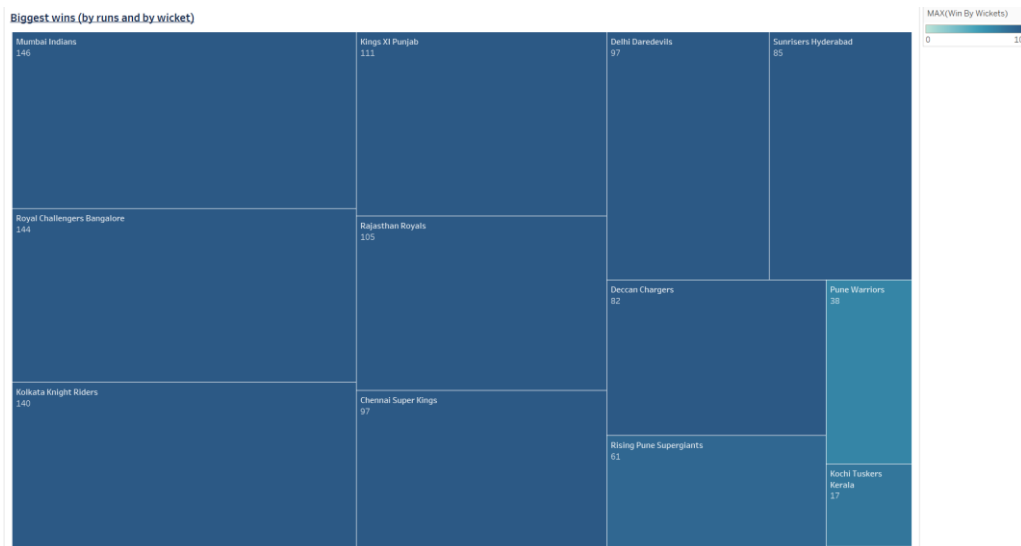
In the above graph, maximum Win by Wickets is indicated by color intensity. The size of each tile indicates the maximum Win by Runs. The maximum win by wickets is 10 and the maximum win by runs is by Mumbai Indians.

Player Statistics

<u>Orange Cap contenders (The batsmen who have scored the maximum number of runs in a particular season)</u>

Color and intensity of the graph indicates the total runs scored by a batsman for a corresponding year. The context is filtered using Year and "top N" orange cap contenders are displayed. In 2009, the orange cap contender was ML Hayden who had amassed 572 runs in that season followed by AC Gilchrist who has scored 495 runs in the entire season. Although treemaps is not the best fit for the above visualization, it is visually appealing for purple cap and orange cap contenders.

Purple Cap contenders (The bowlers who have taken the maximum number of wickets in a particular season)
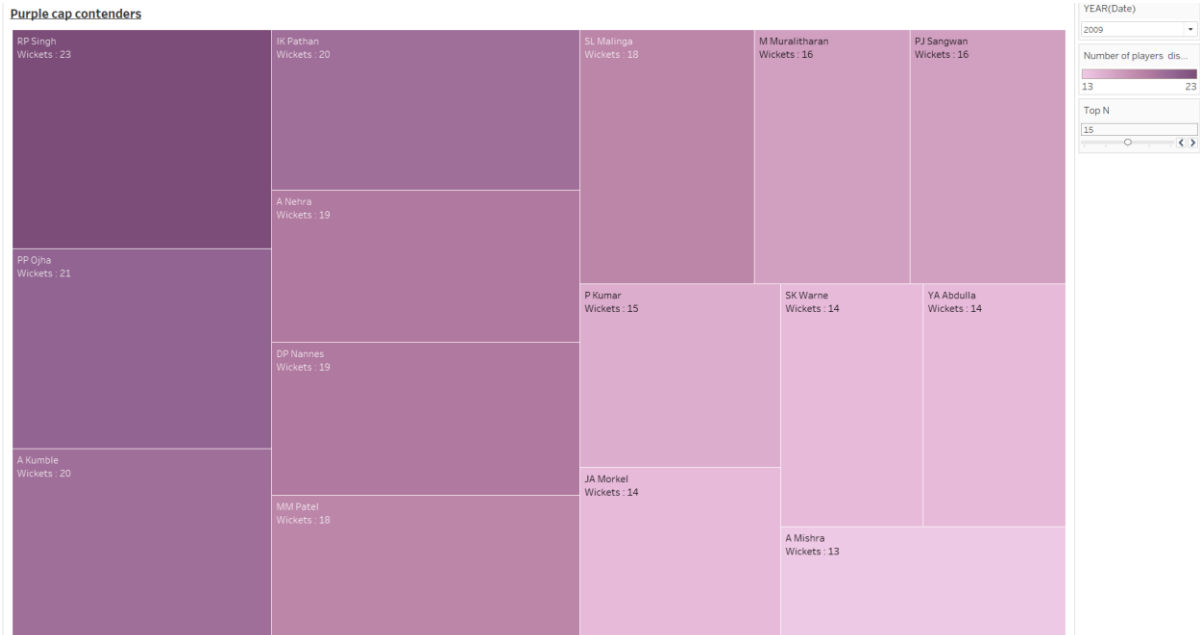

Color and intensity of the graph indicates the total numbers of players dismissed (wickets taken) for a corresponding year. The context is filtered using Year and "top N" purple cap contenders are displayed. In 2009, RP Singh has taken 23 wickets followed by PP Ojha who has taken 21 wickets in that season.

Batsmen who have hit the most number of sixes (per season and overall)
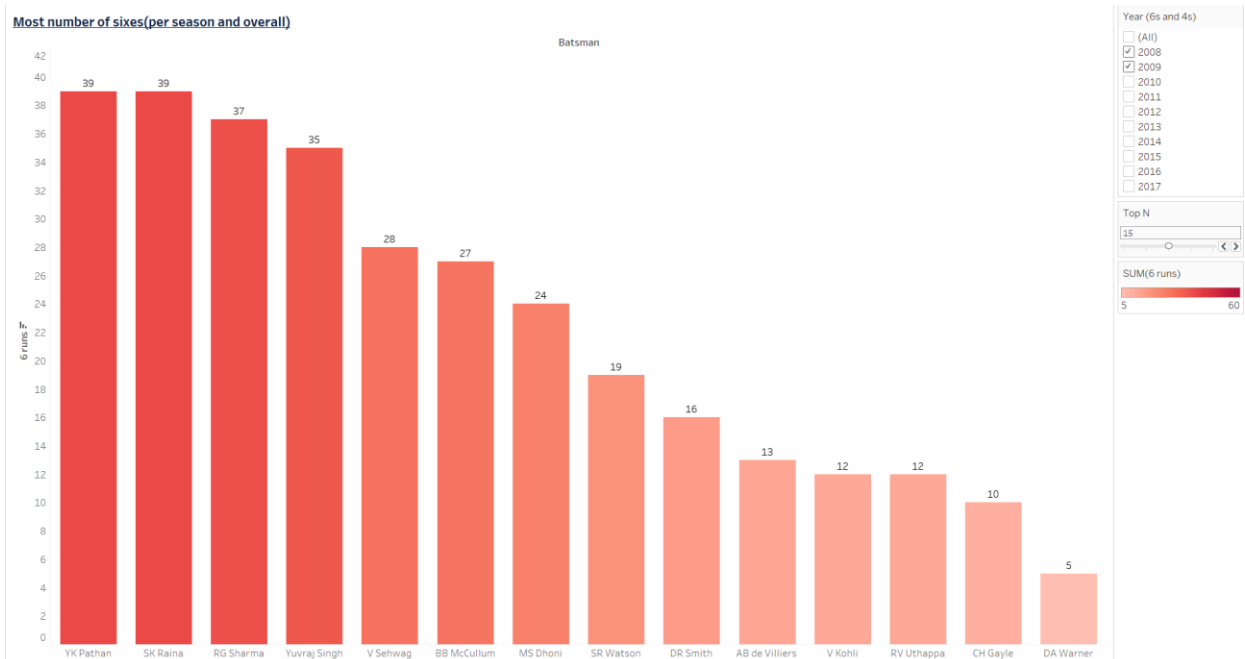
The graph displays the number of sixes that each batsman has hit. The data is filtered on Year and "top N" number of batsmen are displayed. In the graph, a cumulative sum of number of sixes in 2008 and 2009 is displayed. G Gambhir has hit a total of 484 fours across all IPL seasons.

Batsmen who have hit the most number of fours (per season and overall)

Most number of fours(per season and overall)
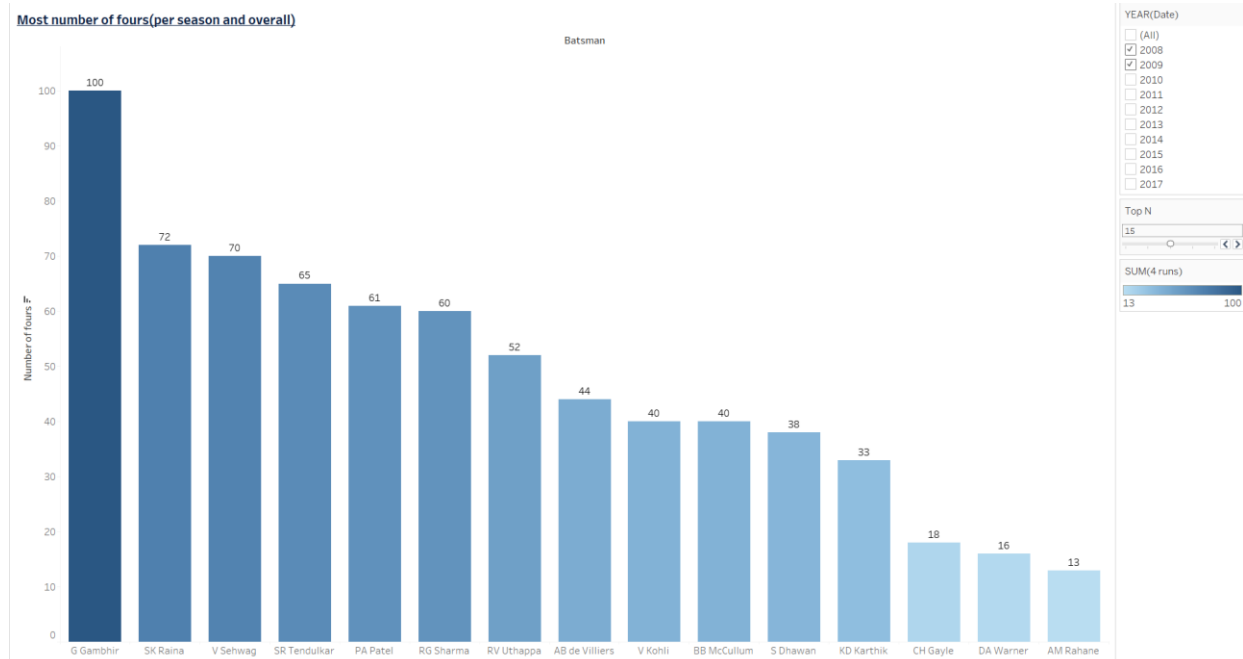
The graph displays the number of fours that each batsman has hit. The data is filtered on Year and "top N" number of batsmen are displayed. In the graph, a cumulative sum of number of fours in 2008 and 2009 is displayed. CH Gayle has hit a total of 266 fours across all IPL seasons.
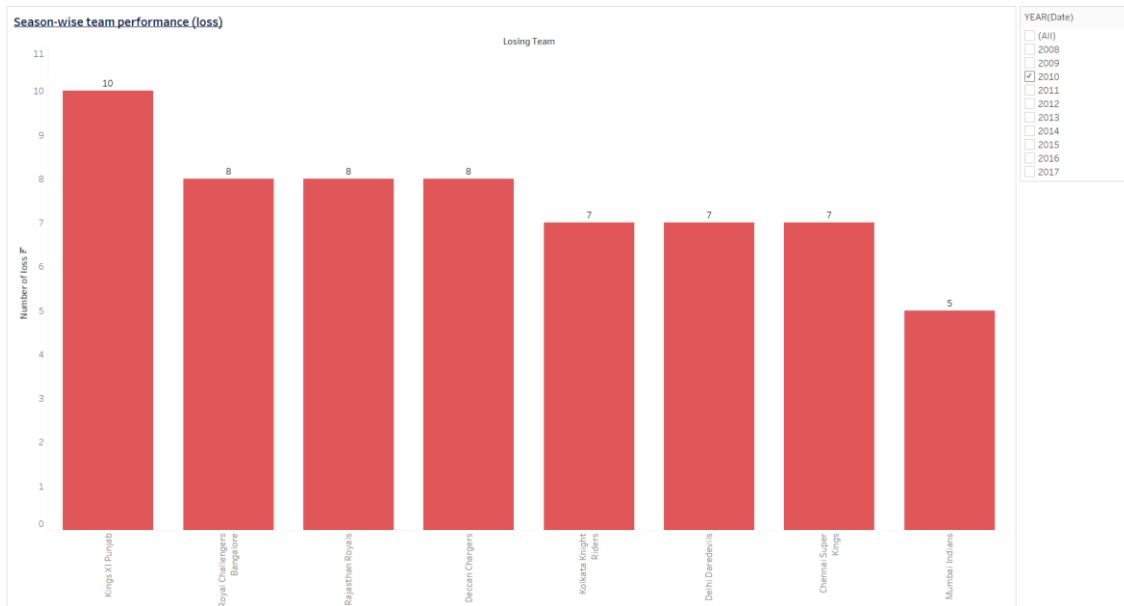
Team Statistics

Season-wise team performance (losses)

The above graph displays the total number of matches lost by each team participating in a particular season. The data is filtered on date. In 2011, Pune Warriors and Delhi Daredevils had lost 9 matches. Delhi Daredevils had lost 83 matches in total across all seasons and were the team with who lost the highest number of matches.
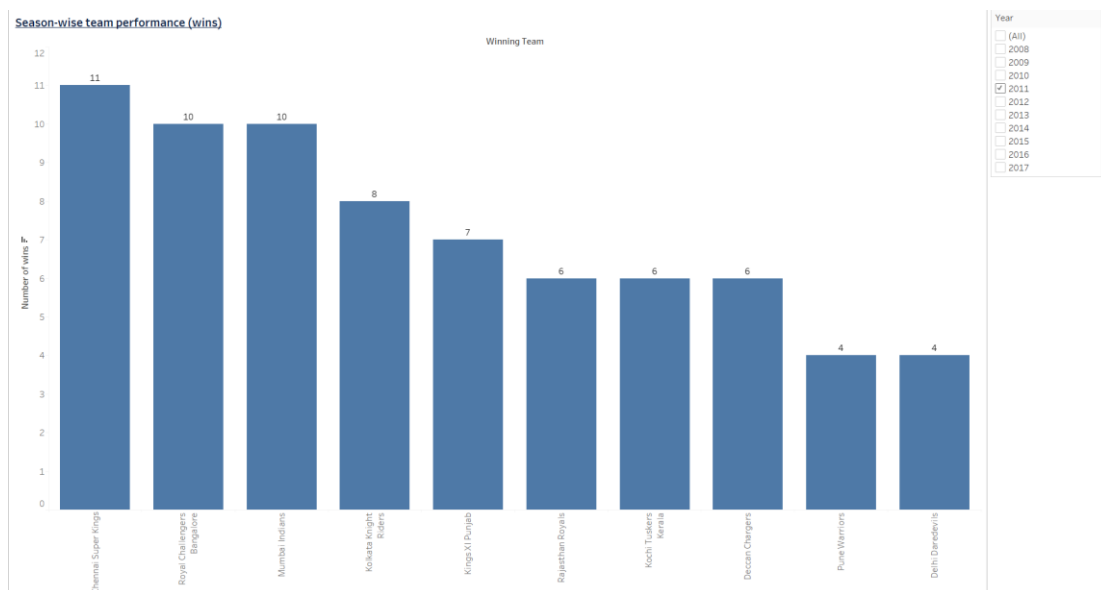
Season-wise team performance (wins)

The above graph displays the total number of matches won by each team participating in a particular season. The data is filtered on date. In 2011, CSK had won 11 matches. Mumbai Indians had won 92 matches in total across all seasons and were the team with who won the highest number of matches.

Season-wise team performance (wins vs losses)
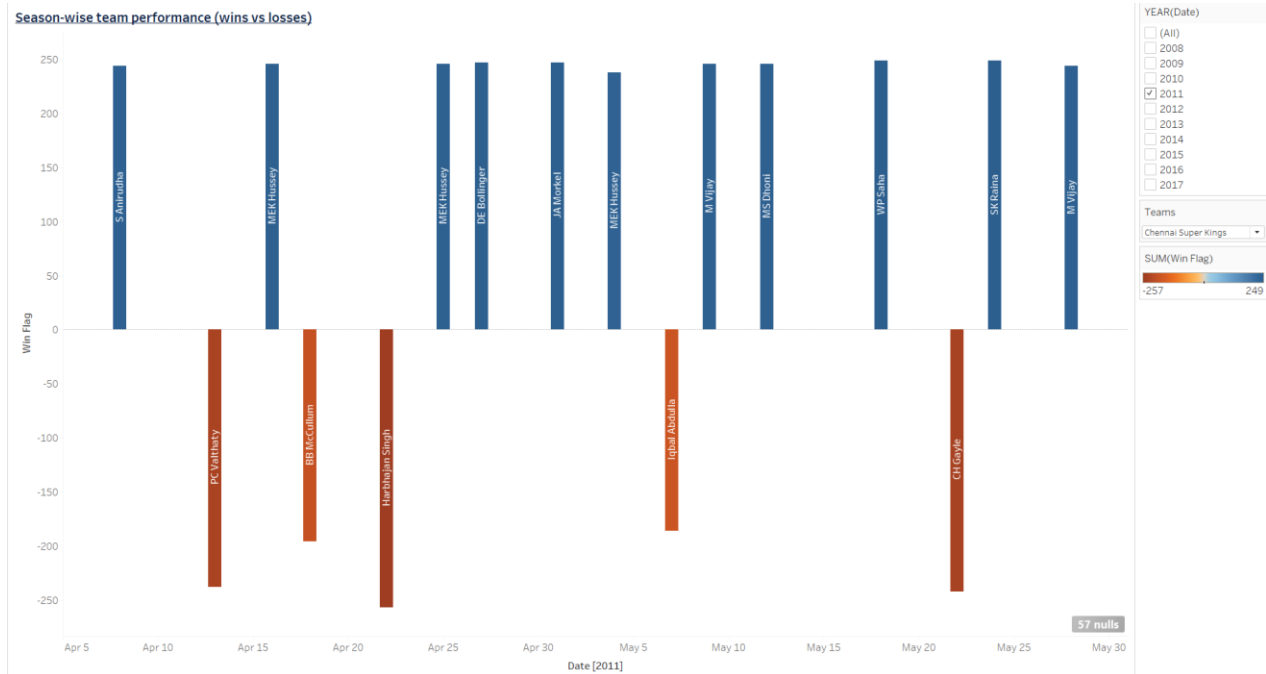
The above graph shows the Performance of Team CSK for the Year 2011. The blue bar indicates the matches where CSK won, and red bar indicates the matches where CSK lost. Player of the match is indicated by the label on each bar. In 2011, CSK played 16 matches and it won 11 matches that year. No data is available for CSK and RR in 2016 and 2017 as they had been suspended for two years.

Win %age (home vs away)
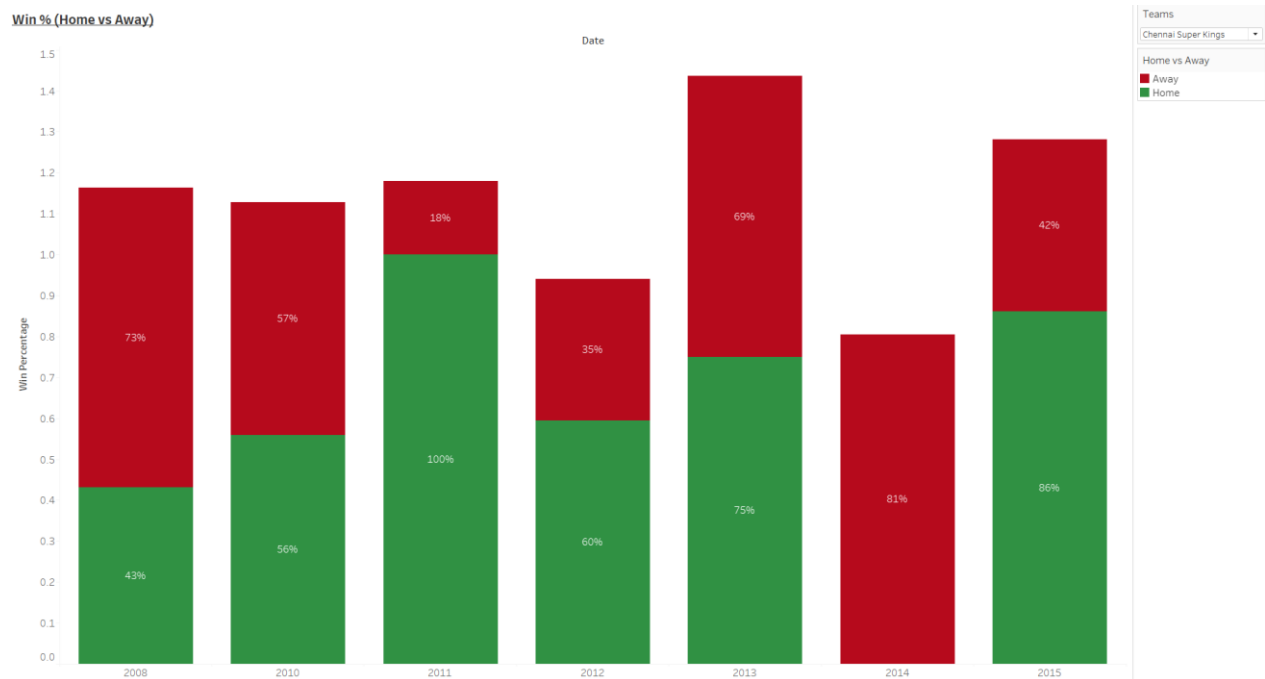
The above graph displays the percentage of matches that CSK has won and lost in Home and Away games. In 2011, CSK won all the games played at Chennai.

Dashboards
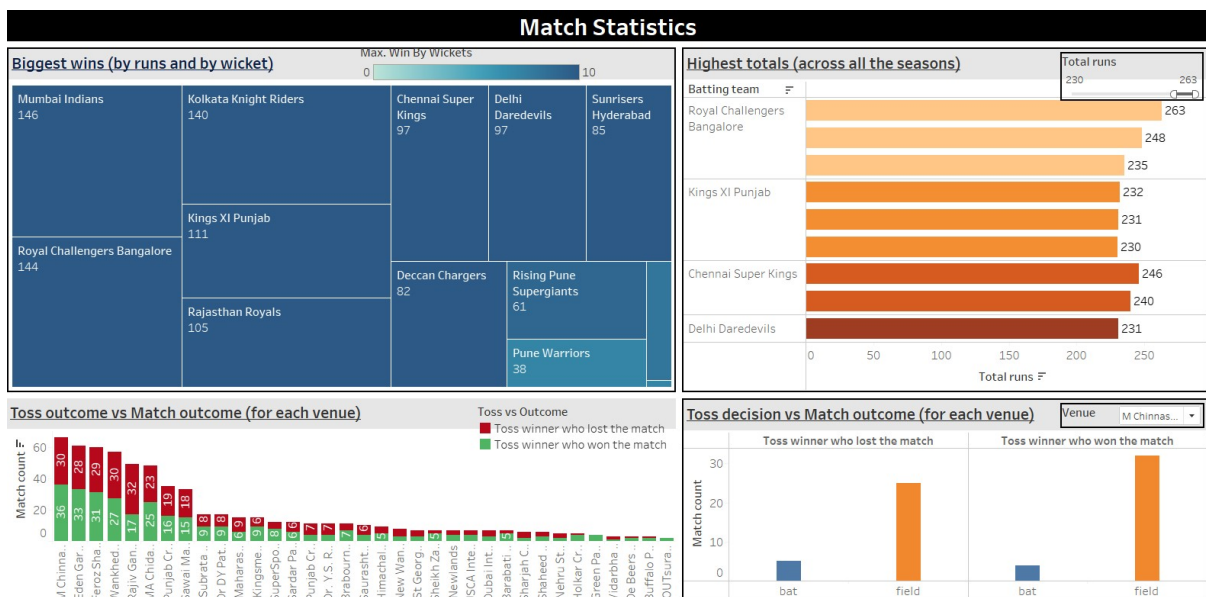
Player Statistics

Orange cap contenders

ML Hayden Runs: 572	SK Raina Runs: 434	HH Gibbs Runs: 371	RG Sharma Runs: 362	JH Kallis Runs: 361	Yuvraj Singh Runs: 340
AC Gilchrist Runs: 495	TM Dilshan Runs: 418	BJ Hodge Runs: 365			
			KC Sangakkara Runs: 332		RA Jadeja Runs: 295
AB de Villiers Runs: 465	JP Duminy Runs: 372	SR Tendulkar Runs: 364	MS Dhoni Runs: 332		

Purple cap contenders

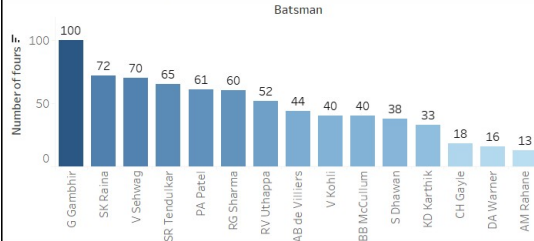|					
RP Singh Wickets : 23	IK Pathan Wickets : 20	MM Patel Wickets : 18	PJ Sangwan Wickets : 16	P Kumar Wickets : 15	JA Morkel
PP Ojha Wickets : 21	A Nehra Wickets : 19	SL Malinga Wickets : 18			
			SK Warne Wickets : 14		A Mishra Wickets : 13
A Kumble Wickets : 20	DP Nannes Wickets : 19	M Muralitharan Wickets : 16	YA Abdulla Wickets : 14		

Runs scored
362 — 700

Number of playe..
13 — 23

Year Orange/Purple cap
2009

Top N
15
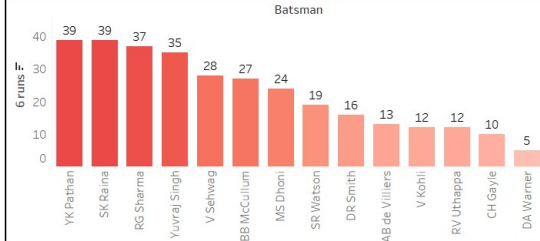
Year (6s and 4s)
- (All)
- [x] 2008
- [x] 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

Most number of fours(per season and overall)

Batsman

Number of fours: G Gambhir 100, SK Raina 72, V Sehwag 70, SR Tendulkar 65, PA Patel 61, RG Sharma 60, RV Uthappa 52, AB de Villiers 44, V Kohli 40, BB McCullum 40, S Dhawan 38, KD Karthik 33, CH Gayle 18, DA Warner 16, AM Rahane 13

Most number of sixes(per season and overall)

Batsman

6 runs: YK Pathan 39, SK Raina 39, RG Sharma 37, Yuvraj Singh 35, V Sehwag 28, BB McCullum 27, MS Dhoni 24, SR Watson 19, DR Smith 16, AB de Villiers 13, V Kohli 12, RV Uthappa 12, CH Gayle 10, DA Warner 5

Team Statistics

Season-wise team performance (wins)

Winning Team

Number of wins: Chen.. 11, Royal Ch.. 10, Mumbai Indians 10, Kolka.. 8, Kings XI Punjab 7, Rajasthan Royals 6, Kochi T.. 6, Deccan Chargers 6, Pune Warriors 4, Delhi Daredevils 4

Season-wise team performance (loss)

Losing Team

Number of loss: Pune Warriors 9, Delhi Daredevils 9, Kochi T.. 8, Deccan Chargers 8, Rajasthan Royals 7, Kolka.. 7, Kings XI Punjab 7, Royal Ch.. 6, Mumbai Indians 6, Chen.. 5

Win % (Home vs Away)

Home vs Away
- Away (red)
- Home (green)

Date / Win Percentage:
- 2008: Home 43%, Away 73%
- 2010: Home 56%, Away 57%
- 2011: Home 100%
- 2012: Home 60%, Away 35%
- 2013: Home 75%, Away 69%
- 2014: Away 81%
- 2015: Home 86%, Away 42%

Year
- (All)
- 2008
- 2009
- 2010
- [x] 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

Season-wise team performance (wins vs losses)

Win Flag -257 — 249

Teams Chennai Super Kings

Win Flag by Date [2011]:
- S Anirudha
- PC Valthaty
- MEK Hussey
- BB McCullum
- Harbhajan Singh
- MEK Hussey
- DE Bollinger
- JA Morkel
- MEK Hussey
- Iqbal Abdulla
- M Vijay
- MS Dhoni
- WP Saha
- CH Gayle
- SK Raina
- M Vijay

57 nulls

(Apr 5, Apr 10, Apr 15, Apr 20, Apr 25, Apr 30, May 5, May 10, May 15, May 20, May 25, May 30)

Summary

- The highest number of matches were played in Mumbai, Kolkata, Bangalore, and Delhi.
- Maximum number of matches were played at M Chinnaswamy stadium. Toss winners who chose to field have won the matches the most.
- Maximum number of matches were won at M Chinnaswamy stadium and maximum matches were lost at Rajiv Gandhi International stadium.
- RCB holds the highest score in the IPL history of 263 & 248 in the year 2013 and 2016.
- The maximum win by wickets is 10 and the maximum win by runs is by Mumbai Indians. Overall, 10 teams have won the matches by 10 wickets.
- V Kohli holds the record for highest runs in a single season of IPL.
- SL Malinga holds the record for taking highest number of wickets in a single season of IPL.
- Gautam Gambhir has hit maximum number of fours across all IPL seasons.
- Chris Gayle has hit most no of sixes across all IPL seasons.
- The highest number of matches won in a season is 13 and this was achieved by RR in 2008 and MI in 2013.
- The highest number of matches lost in a season is 13 and DD performed the worst in 2013.
- Mumbai Indians and Chennai Super Kings are the most successful teams in the IPL history followed by Kolkata Night Riders.
- CSK is the most successful team in IPL history. Despite a two-year suspension, they are among the top 2 teams who have won the maximum number of matches.