MINI PROJECT

IPL DATA ANALYSIS

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IPL DATA ANALYSIS

The codes for the analysis are written in R studio. The codes are as follows:

<u>CODES</u>

```
data=read.csv("C:\\Users\\megha\\Documents\\matches.csv")

data

str(data)

names(data)

head(data)

summary(data)

mv<-sum(is.na(data))

mv

n=length(data $ id)  ###Number of matches

n

s=unique(data $ season) ##Seasons

s

ns=length(s)  ##Total number of seasons

ns

table(data $ season)  ##Number of matches in each season

max(table(data $ season))# Most match in season

barplot(table(data $ season), xlab='season',ylab='Matches', col="Red", main="Bar Graph of
Season v/s Matches")  ##Season with number of matches

mr=max(data $ win_by_runs)  ###win by runs

mr

tapply(data $ win_by_runs, data $ season, max) ##win by runs in each season


max_runs =data[which.max(data $ win_by_runs),]

max_runs
```

max_runs $ winner ## Team won by maximum runs

max_runs $ season

max_runs $ player_of_match

The team which won by maximum runs is Mumbai Indians in the year 2017 against Delhi Daredevils and the man of the match is LMP Simmons

mw=max(data $ win_by_wickets) ###win by wickets

mw

tapply(data $ win_by_wickets, data $ season,max) ## win by wickets in each season

max_wickets =data[which .max(data $ win_by_wickets),]

str(max_wickets)

max_wickets $ winner ## Team won by maximum wickets

max_wickets $ season

max_wickets $ player_of_match

The team which won by maximumwickets is Kolkata Knight Riders in the year 2017 against Gujarat Lions and the man of the match is CA Lynn

table(data $ winner) ### Number of matches win by each team

```
> data=read.csv("C:\\Users\\megha\\Documents\\matches.csv")
> names(data)
 [1] "id"           "season"       "city"         "date"         "team1"        "team2"
 [7] "toss_winner"  "toss_decision" "result"      "dl_applied"   "winner"       "win_by_runs"
[13] "win_by_wickets" "player_of_match" "venue"      "umpire1"      "umpire2"      "umpire3"

> head(data)
  id season    city     date              team1                    team2               toss_winner
1  1   2017 Hyderabad 2017-04-05        Sunrisers Hyderabad Royal Challengers Bangalore Royal Challengers Bangalore
2  2   2017     Pune 2017-04-06          Mumbai Indians     Rising Pune Supergiant      Rising Pune Supergiant
3  3   2017   Rajkot 2017-04-07          Gujarat Lions      Kolkata Knight Riders       Kolkata Knight Riders
4  4   2017   Indore 2017-04-08    Rising Pune Supergiant        Kings XI Punjab        Kings XI Punjab
5  5   2017 Bangalore 2017-04-08 Royal Challengers Bangalore        Delhi Daredevils Royal Challengers Bangalore
6  6   2017 Hyderabad 2017-04-09          Gujarat Lions      Sunrisers Hyderabad        Sunrisers Hyderabad
  toss_decision result dl_applied              winner win_by_runs win_by_wickets player_of_match
1         field normal     0        Sunrisers Hyderabad        35          0   Yuvraj Singh
2         field normal     0      Rising Pune Supergiant         0          7     SPD Smith
3         field normal     0       Kolkata Knight Riders         0         10       CA Lynn
4         field normal     0           Kings XI Punjab          0          6     GJ Maxwell
5           bat normal     0 Royal Challengers Bangalore        15          0      KM Jadhav
6         field normal     0        Sunrisers Hyderabad         0          9    Rashid Khan
                            venue        umpire1      umpire2 umpire3
1 Rajiv Gandhi International Stadium, Uppal    AY Dandekar       NJ Llong
2   Maharashtra Cricket Association Stadium A Nand Kishore        S Ravi
3    Saurashtra Cricket Association Stadium   Nitin Menon     CK Nandan
4            Holkar Cricket Stadium   AK Chaudhary C Shamshuddin
5           M Chinnaswamy Stadium
6 Rajiv Gandhi International Stadium, Uppal    A Deshmukh       NJ Llong

> summary(data)
      id           season         city               date              team1              team2
 Min.   :   1.0   Min.   :2008   Length:756         Length:756         Length:756         Length:756
 1st Qu.: 189.8   1st Qu.:2011   Class :character   Class :character   Class :character   Class :character
 Median : 378.5   Median :2013   Mode  :character   Mode  :character   Mode  :character   Mode  :character
 Mean   : 1792.2  Mean   :2013
 3rd Qu.: 567.2   3rd Qu.:2016
 Max.   :11415.0  Max.   :2019

 toss_winner        toss_decision         result            dl_applied          winner            win_by_runs
 Length:756         Length:756         Length:756         Min.   :0.00000   Length:756         Min.   :  0.00
 Class :character   Class :character   Class :character   1st Qu.:0.00000   Class :character   1st Qu.:  0.00
 Mode  :character   Mode  :character   Mode  :character   Median :0.00000   Mode  :character   Median :  0.00
                                                          Mean   :0.02513                      Mean   : 13.28
                                                          3rd Qu.:0.00000                      3rd Qu.: 19.00
                                                          Max.   :1.00000                      Max.   :146.00

 win_by_wickets   player_of_match        venue             umpire1            umpire2            umpire3
 Min.   : 0.000   Length:756         Length:756         Length:756         Length:756         Length:756
 1st Qu.: 0.000   Class :character   Class :character   Class :character   Class :character   Class :character
 Median : 4.000   Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character
 Mean   : 3.351
 3rd Qu.: 6.000
 Max.   :10.000

> mv<-sum(is.na(data))  ### Number of missing values
> mv
[1] 0
```
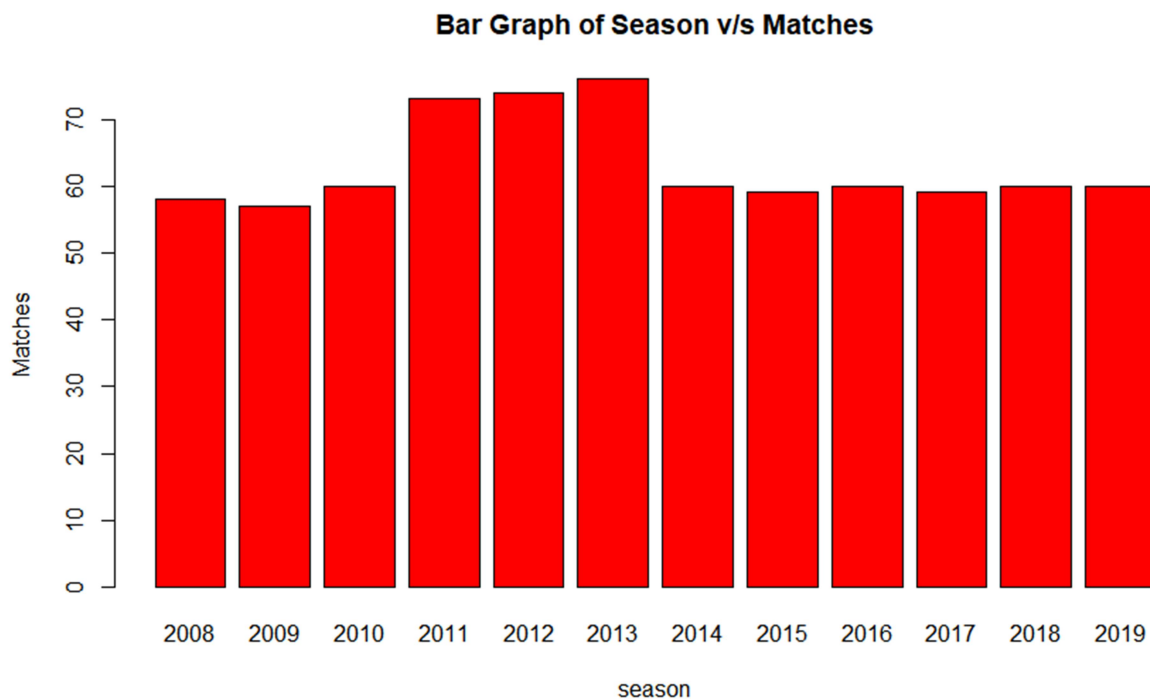
```
> n=length(data $ id)  ### Number of matches
> n
[1] 756
> s=unique(data $ season)  ##Seasons
> s
 [1] 2017 2008 2009 2010 2011 2012 2013 2014 2015 2016 2018 2019
> ns=length(s)  ## Total number of seasons
> ns
[1] 12
>
> table(data $ season)  ## Number of matches in each season

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
  58   57   60   73   74   76   60   59   60   59   60   60
> max(table(data $ season)) ## Most match in season
[1] 76
> barplot(table(data $ season), xlab='season', ylab='Matches', col="Red", main="Bar Graph of Season v/s Matches")
##Season with number of matches
```


Bar Graph of Season v/s Matches

```
> mr=max(data $ win_by_runs)  ### win by runs
> mr
[1] 146
> tapply(data $ win_by_runs, data $ season, max)  ## win by runs in each season
2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
 140   92   98  111   86  130   93  138  144  146  102  118

> max_runs =data[which.max(data $ win_by_runs),]
> max_runs
```

```
'data.frame':  1 obs. of  18 variables:
 $ id             : int 44
 $ season         : int 2017
 $ city           : chr "Delhi"
 $ date           : chr "2017-05-06"
 $ team1          : chr "Mumbai Indians"
 $ team2          : chr "Delhi Daredevils"
 $ toss_winner    : chr "Delhi Daredevils"
 $ toss_decision  : chr "field"
 $ result         : chr "normal"
 $ dl_applied     : int 0
 $ winner         : chr "Mumbai Indians"
 $ win_by_runs    : int 146
 $ win_by_wickets : int 0
 $ player_of_match: chr "LMP Simmons"
 $ venue          : chr "Feroz Shah Kotla"
 $ umpire1        : chr "Nitin Menon"
 $ umpire2        : chr "CK Nandan"
```

> max_runs $ winner ## Team won by maximum runs
[1] "Mumbai Indians"
> max_runs $ season
[1] 2017
> max_runs $ player_of_match
[1] "LMP Simmons"

The team which won by maximum runs is Mumbai Indians in the year 2017 against Delhi Daredevils and the man of the match is LMP Simmons.

> mw=max(data $ win_by_wickets) ### win by wickets
> mw
[1] 10
> tapply(data $ win_by_wickets, data $ season, max) ## win by wickets in each season
2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
  10   10   10   10   10   10   9   10   10   10   10   9

> max_wickets =data[which.max(data $ win_by_wickets),]
> str(max_wickets)
'data.frame':   1 obs. of 18 variables:
 $ id   : int 3
 $ season   : int 2017
 $ city   : chr "Rajkot"
 $ date   : chr "2017-04-07"
 $ team1   : chr "Gujarat Lions"
 $ team2   : chr "Kolkata Knight Riders"
 $ toss_winner : chr "Kolkata Knight Riders"
 $ toss_decision : chr "field"
 $ result   : chr "normal"
 $ dl_applied   : int 0
 $ winner   : chr "Kolkata Knight Riders"
 $ win_by_runs : int 0
 $ win_by_wickets : int 10
 $ player_of_match: chr "CA Lynn"
 $ venue   : chr "Saurashtra Cricket Association Stadium"
 $ umpire1   : chr "Nitin Menon"
 $ umpire2   : chr "CK Nandan"

> max_wickets $ winner ## Team won by maximum wickets
[1] "Kolkata Knight Riders"

> max_wickets $ season

[1] 2017
> max_wickets $ player_of_match
[1] "CA Lynn"

The team which won by maximum wickets is Kolkata Knight Riders in the year 2017 against Gujarat Lions and the man of the match is CA Lynn.

> table(data $ winner) ### Number of matches win by each team

Chennai Super Kings	Deccan Chargers	Delhi Capitals	
100	29	10	

Delhi Daredevils	Gujarat Lions	Kings XI Punjab	Kochi Tuskers Kerala
67	13	82	6

Kolkata Knight Riders	Mumbai Indians	Pune Warriors	Rajasthan Royals
92	109	12	75

Rising Pune Supergiant	Rising Pune Supergiants	Royal Challengers Bangalore	Sunrisers Hyderabad
10	5	84	58