Visualization Code

Qiaowei Jiang

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```
library(dplyr)
library(ggplot2)
library(ggcorrplot)
library(ggthemes)

team<-read.csv("C:/Users/admin/Desktop/Data Visulization/project/teams_stat.csv",header=TRUE)
```

1. cor for teams

```
###1.
metrixs=team %>%
  select(teamFG.,team2P.,team3P.,teamFT.,teamTREB.,teamASST.,teamTS.,teamEFG.,teamOREB.,teamDREB.,teamTO.,teamS
TL.,teamBLK.,teamPlay.)


corr.1 <- round(cor(metrixs), 1)

# Visualize the correlation matrix (Get the lower triangle)

ggcorrplot(corr.1, method = "circle",hc.order = TRUE, type = "lower",colors = c( "steelblue4", "white","oranger
ed3"),
           outline.col = "white",title='Correlation Matrix for key Metrics')
```

2. cor for opponents

```
###2.
metrixs_opp=team %>%
  select(opptFG.,oppt2P.,oppt3P.,opptFT.,opptTREB.,opptASST.,opptTS.,opptEFG.,opptOREB.,opptDREB.,opptTO.,opptS
TL.,opptBLK.,opptPlay.)

corr.2 <- round(cor(metrixs_opp), 1)

# Visualize the correlation matrix (Get the lower triangle)

ggcorrplot(corr.2, method = "circle",hc.order = TRUE, type = "lower",colors = c( "steelblue4", "white","oranger
ed3"),
           outline.col = "white",title='Correlation Matrix for key Metrics of Opponent')
```

3. cor for team and oppot

```
###3.

metrixs_with=team %>%
  select(teamFG.,team2P.,team3P.,teamFT.,opptFG.,oppt2P.,oppt3P.,opptFT.)

corr.3 <- round(cor(metrixs_with), 1)

# Visualize the correlation matrix (Get the lower triangle)

ggcorrplot(corr.3, hc.order = TRUE, type = "lower",
           ggtheme = ggplot2::theme_gray,
           colors = c( "steelblue4", "white","orangered3"),
           title='Correlation Matrix for key Metrics between Two Teams')
```

4. Population Pyramid for Win and Lose team

```
# X Axis Breaks and Labels
brks <- seq(69, 149, 20)

# Plot
ggplot(team, aes(x = teamPTS, y = teamAbbr, fill = teamRslt)) +    # Fill column
  geom_bar(stat = "identity", width = .6) +   # draw the bars
  scale_y_discrete(breaks = brks    # Breaks
                   ) +
  coord_flip() +  # Flip axes
  labs(title="Points scored by team vs Team results") +
  theme_tufte() +  # Tufte theme from ggfortify
  theme(plot.title = element_text(hjust = .5),
        axis.ticks = element_blank()) +   # Centre plot title
  scale_fill_manual(values = c("red",
    "steelblue"))  # Color palette
```

5. cor for players

```
play<-read.csv("C:/Users/admin/Desktop/Data Visulization/project/players_stat.csv",header=TRUE)


metrixs_play=play %>%
  select(playMin,playHeight,playWeight,playPTS,playAST,playSTL,playBLK,playFGA,playFGM)

corr.4 <- round(cor(metrixs_play), 1)

# Visualize the correlation matrix (Get the lower triangle)

ggcorrplot(corr.4, hc.order = TRUE, type = "lower",
           ggtheme = ggplot2::theme_gray,
           colors = c( "royalblue4", "white","orangered3"),
           title='Correlation Matrix for key Metrics for Players')
```

6. violin plot for positions

```
#######
library(ggplot2)
library(RColorBrewer)
theme_set(theme_bw())

colourCount = length(unique(play$teamAbbr))
getPalette = colorRampPalette(brewer.pal(9, "RdBu"))

# plot
g <- ggplot(play, aes(teamAbbr,playPTS))
g + geom_violin(aes(fill = teamAbbr))+
  scale_fill_manual(values = getPalette(colourCount))
  labs(title="Violin plot",
       subtitle="Teams vs Points scored by player",
       x="Teams",
       y="playPTS")
```

7.Pie chart

```
pie <- ggplot(play, aes(x = "", fill = factor(playPos))) +
  scale_fill_brewer(palette = "RdBu")+
  geom_bar(width = 1) +
  theme(axis.line = element_blank(),
        plot.title = element_text(hjust=0.5)) +
  labs(fill="class",
       x=NULL,
       y=NULL,
       title="Pie Chart of Player Positions")

pie + coord_polar(theta = "y", start=0)
```

8. Boxplot

```
g <- ggplot(play, aes(playPos, playPTS))
g + geom_boxplot(aes(fill=factor(playPos))) +
  theme(axis.text.x = element_text(angle=65, vjust=0.6)) +
  scale_fill_brewer(palette = "RdBu")+
  labs(title="Box plot",
       subtitle="Player Position vs Points scored by player",
       x="Player Position",
       y="playPTS")
```