Homework 10

Group 8

November 19, 2019

R Markdown

```
#Ignore this all for now, it's just a bunch of operations


# data=read.csv('PlayersGroupedByMonth.csv')
# par(mfrow=c(2,2))
# plot(data$CollegeGames,data$Minutes)
# plot(data$CollegeGames,data$Pts36,ylim=c(0,30))
# plot(data$CollegeGames,data$Ast36)
# plot(data$CollegeGames,data$TO36)
#
# bin=rep(0,length(data$br_url))
# #for (i in 1:length(bin)){
#   if (data$College_Games[i] <= 35 && data$College_Games[i] >= 1) {
#   bin[i]=1
#   } else if (data$College_Games[i] >= 36 && data$College_Games[i] <= 70) {
#   bin[i]=2
#   } else if (data$College_Games[i] >= 71 && data$College_Games[i] <= 105) {
#   bin[i]=3
#   } else if (data$College_Games[i] >= 106 && data$College_Games[i] <= 152) {
#   bin[i]=4
#   } else if (data$Intl_Minutes[i] <= 669 && data$Intl_Minutes[i] >= 2) {
#   bin[i]=5
#   } else if (data$Intl_Minutes[i] >= 670 && data$Intl_Minutes[i] <= 1221) {
#   bin[i]=6
#   } else if (data$Intl_Minutes[i] >= 1222 && data$Intl_Minutes[i] <= 3328) {
#   bin[i]=7
#   } else if (data$Intl_Minutes[i] >= 3329 && data$Intl_Minutes[i] <= 13659) {
#   bin[i]=8
# }
# }
# data$bin=bin
# data$minsgroup<-NULL
# #write.csv(data,'PlayersGroupedByMonth2.csv')
#
#
#
# par(mfrow=c(2,2))
# plot(data$Month,data$Minutes,col=data$MinBin)
# plot(data$Month,data$Pts36,col=data$MinBin)
# plot(data$Month,data$Ast36,col=data$MinBin)
# plot(data$Month,data$TO36,col=data$MinBin)
#
# data$month<-factor(data$Month,levels=c(10,11,12,1,2,3,4,5,6))
```

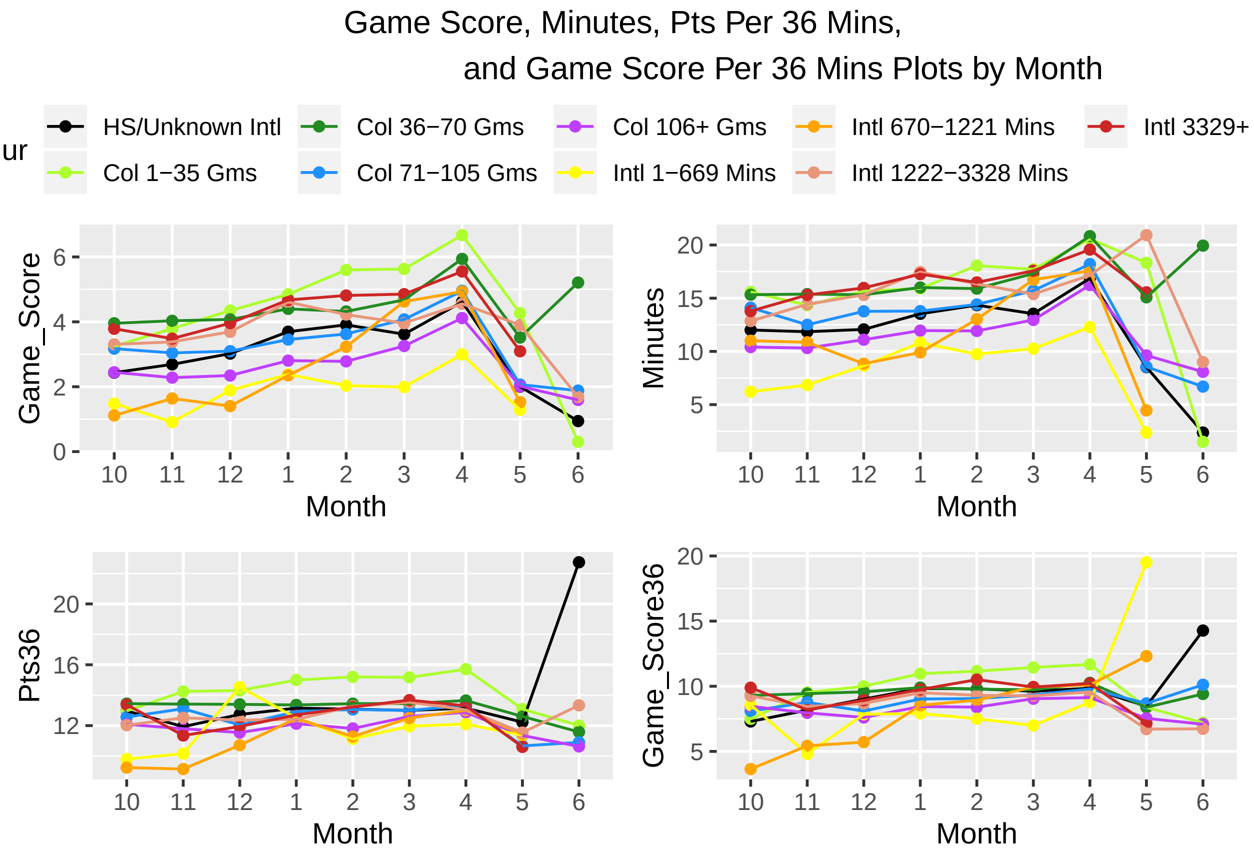
Here is the good stuff!

```r
library(ggplot2)
library(ggpubr)
```

```
## Loading required package: magrittr
```

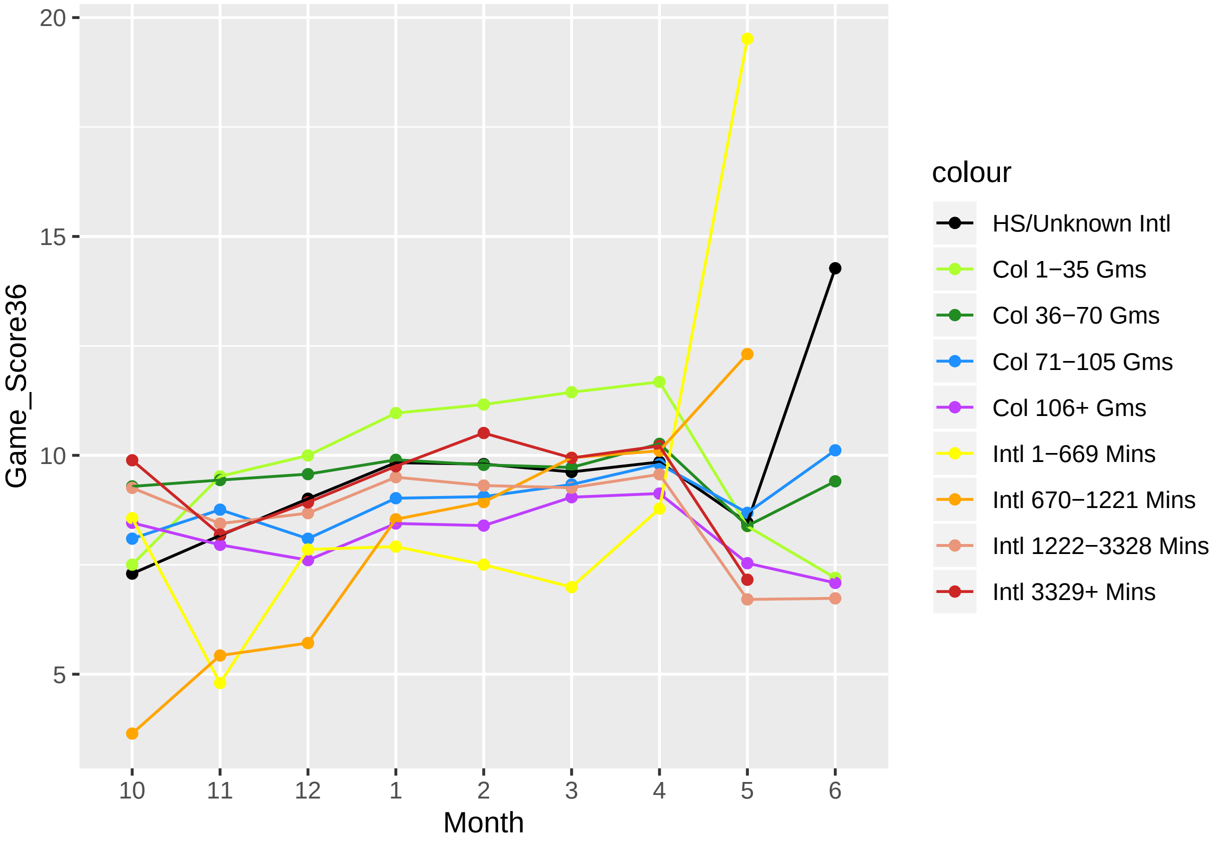
```r
library(grid)
library(gridBase)
data=read.csv('PlayersGroupedByMonthAndBin.csv')
cols <- c("0"="black",'1'='greenyellow','2'='forestgreen','3'='dodgerblue',
          '4'='darkorchid1','5'='yellow','6'='orange','7'='darksalmon','8'='firebrick3')
data$Month<-factor(data$Month,levels=c(10,11,12,1,2,3,4,5,6))
Game_Score36=data$Game_Score/data$Minutes*36
data$Game_Score36=Game_Score36

Game_Score_Plot=ggplot(data, aes(x = Month, y = Game_Score, group = Bin, color = 'Bin')) +
  geom_point(aes(color = factor(Bin))) +
  scale_color_manual(values = cols, labels=c('HS/Unknown Intl','Col 1-35 Gms','Col 36-70 Gms',
                                             'Col 71-105 Gms','Col 106+ Gms','Intl 1-669 Mins',
                                             'Intl 670-1221 Mins','Intl 1222-3328 Mins',
                                             'Intl 3329+ Mins')) +
  geom_line(aes(color = factor(Bin)))
Minutes_Plot=ggplot(data, aes(x = Month, y = Minutes, group = Bin, color = 'Bin')) +
  geom_point(aes(color = factor(Bin))) +
  scale_color_manual(values = cols, labels=c('HS/Unknown Intl','Col 1-35 Gms','Col 36-70 Gms',
                                             'Col 71-105 Gms','Col 106+ Gms','Intl 1-669 Mins',
                                             'Intl 670-1221 Mins','Intl 1222-3328 Mins',
                                             'Intl 3329+ Mins')) +
  geom_line(aes(color = factor(Bin)))
Pts36_Plot=ggplot(data, aes(x = Month, y = Pts36, group = Bin, color = 'Bin')) +
  geom_point(aes(color = factor(Bin))) +
  scale_color_manual(values = cols, labels=c('HS/Unknown Intl','Col 1-35 Gms','Col 36-70 Gms',
                                             'Col 71-105 Gms','Col 106+ Gms','Intl 1-669 Mins','
                                             Intl 670-1221 Mins','Intl 1222-3328 Mins',
                                             'Intl 3329+ Mins')) +
  geom_line(aes(color = factor(Bin)))
Game_Score_36_Plot=ggplot(data, aes(x = Month, y = Game_Score36, group = Bin, color = 'Bin')) +
  geom_point(aes(color = factor(Bin))) +
  scale_color_manual(values = cols, labels=c('HS/Unknown Intl','Col 1-35 Gms','Col 36-70 Gms',
                                             'Col 71-105 Gms','Col 106+ Gms','Intl 1-669 Mins',
                                             'Intl 670-1221 Mins','Intl 1222-3328 Mins',
                                             'Intl 3329+ Mins')) +
  geom_line(aes(color = factor(Bin)))
plot=ggarrange(Game_Score_Plot,Minutes_Plot,Pts36_Plot,Game_Score_36_Plot,
               ncol=2,nrow=2,common.legend=TRUE)
annotate_figure(plot,top=text_grob('Game Score, Minutes, Pts Per 36 Mins,
                                    and Game Score Per 36 Mins Plots by Month'))
```



```
#vp1=viewport(x=0,y=0,width=0.5,height=0.5,just=c('left','bottom'))
#vp2=viewport(x=0,y=0.5,width=0.5,height=0.5,just=c('left','bottom'))
#vp3=viewport(x=0.5,y=0,width=0.5,height=0.5,just=c('left','bottom'))
#vp4=viewport(x=0,y=0.5,width=0.5,height=0.5,just=c('left','bottom'))
#print(Game_Score_Plot,vp=vp1)
#print(Minutes_Plot,vp=vp2)
#print(Pts36_Plot,vp=vp3)
#print(Game_Score_36_Plot,vp=vp4)
```

```
# Function
plot_func <- function(plot_name) {
  if (plot_name == "Game_Score") {
    y = data$Game_Score
  } else if (plot_name == "Minutes") {
    y = data$Minutes
  } else if (plot_name == "Pts36") {
    y = data$Pts36
  } else if (plot_name == "Game_Score36") {
    y = data$Game_Score36
  } else {
    print("Plot name not found")
    return()
  }
  ggplot(data, aes(x = Month, y = y, group = Bin, color = 'Bin')) +
  geom_point(aes(color = factor(Bin))) +
    scale_color_manual(values = cols, labels=c('HS/Unknown Intl','Col 1-35 Gms','Col 36-70 Gms',
                                               'Col 71-105 Gms','Col 106+ Gms','Intl 1-669 Mins',
                                                        'Intl 670-1221 Mins','Intl 1222-3328 Mins',
                                                        'Intl 3329+ Mins')) +
  geom_line(aes(color = factor(Bin))) +
  labs(y = plot_name)
}
plot_func("Game_Score36")
```



```
# Multiple plot function
#
# ggplot objects can be passed in ..., or to plotlist (as a list of ggplot objects)
# - cols:   Number of columns in layout
# - layout: A matrix specifying the layout. If present, 'cols' is ignored.
#
# If the layout is something like matrix(c(1,2,3,3), nrow=2, byrow=TRUE),
# then plot 1 will go in the upper left, 2 will go in the upper right, and
# 3 will go all the way across the bottom.
#
multiplot <- function(..., plotlist=NULL, file, cols=1, layout=NULL) {
  library(grid)

  # Make a list from the ... arguments and plotlist
  plots <- c(list(...), plotlist)

  numPlots = length(plots)

  # If layout is NULL, then use 'cols' to determine layout
  if (is.null(layout)) {
    # Make the panel
    # ncol: Number of columns of plots
    # nrow: Number of rows needed, calculated from # of cols
    layout <- matrix(seq(1, cols * ceiling(numPlots/cols)),
                    ncol = cols, nrow = ceiling(numPlots/cols))
  }

 if (numPlots==1) {
    print(plots[[1]])

  } else {
    # Set up the page
    grid.newpage()
    pushViewport(viewport(layout = grid.layout(nrow(layout), ncol(layout))))

    # Make each plot, in the correct location
    for (i in 1:numPlots) {
      # Get the i,j matrix positions of the regions that contain this subplot
      matchidx <- as.data.frame(which(layout == i, arr.ind = TRUE))

      print(plots[[i]], vp = viewport(layout.pos.row = matchidx$row,
                                      layout.pos.col = matchidx$col))
    }
  }
}
```