thunder_haoyangyan

R Markdown

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.5     v dplyr   1.0.7
## v tidyr   1.1.4     v stringr 1.4.0
## v readr   2.1.2     v forcats 0.5.1
```

```
## Warning: package 'readr' was built under R version 4.1.3
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
setwd("C:/Users/yanhy/Desktop/3rd/interview")
data <- read_csv("shots_data.csv")
```

```
## Rows: 504 Columns: 4
```

```
## -- Column specification --------------------------------------------------------
## Delimiter: ","
## chr (1): team
## dbl (3): x, y, fgmade
```

```
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
type <- c()
for (i in c(1:nrow(data))){
  if (abs(data[i,'x'])>22 & data[i,'y']<=7.8){
    type[i] <- 'C3'
  } else if(((data[i,'x']^2+data[i,'y']^2)>23.75^2) | (abs(data[i,'x'])>22 & data[i,'y']>7.8))
{
    type[i] <- 'NC3'
  } else{
    type[i] <- '2PT'
  }
}
data <- cbind(data,type)

Adata <- data %>%
  filter(
    team %in% 'Team A'
  )
Bdata <- data %>%
  filter(
    team %in% 'Team B'
  )

Aprop <- prop.table(table(Adata$type))
Bprop <- prop.table(table(Bdata$type))

##
AFGM <- nrow(Adata %>% filter(fgmade %in% 1))
AthreePM <- nrow(Adata %>% filter(fgmade %in% 1, type %in% c('C3','NC3')))
AFGA <- nrow(Adata)
AeFG <- (AFGM+0.5*AthreePM)/AFGA

BFGM <- nrow(Bdata %>% filter(fgmade %in% 1))
BthreePM <- nrow(Bdata %>% filter(fgmade %in% 1, type %in% c('C3','NC3')))
BFGA <- nrow(Bdata)
BeFG <- (BFGM+0.5*BthreePM)/BFGA

##
AeFG2pt <- nrow(Adata %>% filter(fgmade %in% 1, type %in% '2PT'))/nrow(Adata %>% filter(type %
in% '2PT'))
AeFGC3 <- 1.5*nrow(Adata %>% filter(fgmade %in% 1, type %in% 'C3'))/nrow(Adata %>% filter(type
%in% 'C3'))
AeFGNC3 <- 1.5*nrow(Adata %>% filter(fgmade %in% 1, type %in% 'NC3'))/nrow(Adata %>% filter(ty
pe %in% 'NC3'))
BeFG2pt <- nrow(Bdata %>% filter(fgmade %in% 1, type %in% '2PT'))/nrow(Bdata %>% filter(type %
in% '2PT'))
BeFGC3 <- 1.5*nrow(Bdata %>% filter(fgmade %in% 1, type %in% 'C3'))/nrow(Bdata %>% filter(type
%in% 'C3'))
BeFGNC3 <- 1.5*nrow(Bdata %>% filter(fgmade %in% 1, type %in% 'NC3'))/nrow(Bdata %>% filter(ty
pe %in% 'NC3'))

##
Aprop
```

```
##
##        2PT         C3        NC3
## 0.69285714 0.06428571 0.24285714
```

```
Bprop
```

```
##
##         2PT          C3         NC3
## 0.67410714 0.04910714 0.27678571
```

```
AeFG2pt
```

```
## [1] 0.4896907
```

```
AeFGC3
```

```
## [1] 0.75
```

```
AeFGNC3
```

```
## [1] 0.4632353
```

```
BeFG2pt
```

```
## [1] 0.4437086
```

```
BeFGC3
```

```
## [1] 0.5454545
```

```
BeFGNC3
```

```
## [1] 0.5080645
```