R Notebook

This is an R Markdown (http://rmarkdown.rstudio.com) Notebook. When you execute code within the notebook, the results appear beneath the code.

Try executing this chunk by clicking the *Run* button within the chunk or by placing your cursor inside it and pressing *Ctrl+Shift+Enter*.

```
#install.packages("tidyverse")
library(tidyverse)
```

```
## ── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──
## ✓ ggplot2 3.3.6      ✓ purrr   0.3.4
## ✓ tibble  3.1.8      ✓ dplyr   1.0.10
## ✓ tidyr   1.2.0      ✓ stringr 1.4.1
## ✓ readr   2.1.2      ✓ forcats 0.5.2
## ── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
```

```
df<- read.csv("C:/Users/srush/Downloads/shots_data.csv")
```

```
shotsA <- df %>% filter(team == "Team A") #teamA is a dataframe of team A's shots
shotsB <- df %>% filter(team == "Team B") #teamB is a dataframe of team B's shots
```

```
#TEAM A
#Two Points Zone
#filter two point shots from team A's total shots
shots_2PTA <- shotsA %>%
  filter((x <= 22 & y<= 7.8)  & (x >= -22 & y <= 7.8) | ((x <= 23.75 & y > 7.8) & (x>= -23.75 &
 y > 7.8)))
```

```
#Percentage of total 2pt shots divided by the total shots played
TwoPTA <- nrow(shots_2PTA)/nrow(shotsA)*100

# Percentage of the effective field goal percentage of team A shots within a  2PT zone
TwoPTAeFG <-sum(shots_2PTA$fgmade) /nrow(shots_2PTA) * 100
```

```
#Non Corner 3
#filter Non Corner 3 shots from team A's total shots
shots_NC3A <- shotsA %>%
  filter((x >= 23.75 & y > 7.8) | (x<= -23.75 & y > 7.8))
nrow(shots_NC3A)
```

```
## [1] 0
```

```
#Percentage of total  Non Corner 3 shots divided by the total shots played by Teaam A
NC3A <-nrow(shots_NC3A)/nrow(shotsA)*100


# Percentage of the effective field goal percentage of team A shots within a Non Corner 3 zone
NC3AeFG <- sum(shots_NC3A$fgmade)
```

```
#Corner 3
##filter Corner 3 shots from team A's total shots

shots_C3A <- shotsA %>%
  filter((x >= 22 & y <= 7.8) | (x <= -22 & y <= 7.8))
nrow(shots_C3A)
```

```
## [1] 18
```

```
#Percentage of total Corner 3 shots divided by the total shots played by Teaam A
C3A <- nrow(shots_C3A)/nrow(shotsA)*100


# Percentage of the effective field goal percentage of team A shots within a Corner 3 zone
#must adjust the equation for 3Cs by multiplying the threes made by 0.5
C3AeFG <- (sum(shots_C3A$fgmade)+sum(shots_C3A$fgmade)*0.5)/nrow(shots_C3A) * 100
```

```
#install.packages("formattable")
library(formattable)
```

```
SummaryA <- data.frame(
                       Shot_Zones = c("2PT", "NC3", "C3"),
                       Shot_Distribution = c(round(TwoPTA,3), round(NC3A,3), round(C3A,3)),
                      eFG_percent= c(round(TwoPTAeFG,3), round(NC3AeFG,3), round(C3AeFG,3)))

formattable(SummaryA)
```

Shot_Zones	Shot_Distribution	eFG_percent
2PT	93.571	44.275
NC3	0.000	0.000
C3	6.429	75.000

```
#TEAM B
#Two Points Zone
#filter two point shots from team A's total shots
shots_2PTB <- shotsB %>%
  filter((x <= 22 & y<= 7.8)  & (x >= -22 & y <= 7.8) | ((x <= 23.75 & y > 7.8) & (x>= -23.75 &
 y > 7.8)))
```

```
#Percentage of total 2pt shots divided by the total shots played
TwoPTB <- nrow(shots_2PTB)/nrow(shotsB)*100

# Percentage of the effective field goal percentage of team B shots within a  2PT zone
TwoPTBeFG <-sum(shots_2PTB$fgmade) /nrow(shots_2PTB) * 100
```

```
#Non Corner 3
#filter Non Corner 3 shots from team B's total shots
shots_NC3B <- shotsB %>%
  filter((x >= 23.75 & y > 7.8) | (x<= -23.75 & y > 7.8))
nrow(shots_NC3B)
```

```
## [1] 0
```

```
#Percentage of total  Non Corner 3 shots divided by the total shots played by Teaam B
NC3B <-nrow(shots_NC3B)/nrow(shotsB)*100


# Percentage of the effective field goal percentage of team B shots within a Non Corner 3 zone
NC3BeFG <- sum(shots_NC3B$fgmade)
```

```
#Corner 3
##filter Corner 3 shots from team B's total shots

shots_C3B <- shotsB %>%
  filter((x >= 22 & y <= 7.8) | (x <= -22 & y <= 7.8))
nrow(shots_C3B)
```

```
## [1] 12
```

```
#Percentage of total Corner 3 shots divided by the total shots played by Teaam B
C3B <- nrow(shots_C3B)/nrow(shotsB)*100


# Percentage of the effective field goal percentage of team B shots within a Corner 3 zone
#must adjust the equation for 3Cs by multiplying the threes made by 0.5
C3BeFG <- (sum(shots_C3B$fgmade)+sum(shots_C3B$fgmade)*0.5)/nrow(shots_C3B) * 100
```

```
SummaryB <- data.frame(
                       Shot_Zones = c("2PT", "NC3", "C3"),
                       Shot_Distribution = c(round(TwoPTB,3), round(NC3B,3), round(C3B,3)),
                      eFG_percent= c(round(TwoPTBeFG,3), round(NC3BeFG,3), round(C3BeFG,3)))

formattable(SummaryB)
```

Shot_Zones	Shot_Distribution	eFG_percent
2PT	95.089	41.315
NC3	0.000	0.000
C3	5.357	50.000