TOY_1

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```
library(tidyr)
library(dplyr)
library(chron)                  # Para CHR_to_Time
library(stringr)                # Para str_pad
library(lubridate)              # Para Restar_time
```

PARTE 1: Crear Stints

DATA

```
homeplayer <- paste0("homeplayer",1:10)
awayplayer <- paste0("awayplayer",1:10)


toy <- data.frame(
  "id_play" = 1:15,
  "season" = c(rep("S2017",15)),
  "game_code_code" = c(rep("G1",10), rep("G2",5)),
  "quarter" = c(rep(1,3), rep(2,2),rep(3,2),rep(4,3),rep(1,4),rep(2,1)),
  "time" = c('00:00:00','00:03:20','00:05:12','00:11:20','00:15:36','00:21:45','00:27:20','00:31:45','0
  "points_home" =    c(0,0,0,2,2,2,5,5,7,7,0,3,3,5,6),
  "points_away" = c(0,2,2,2,4,4,7,7,9,9,0,0,2,2,2),
  "homeplayer1" = c(rep(homeplayer[1],4),rep(homeplayer[6],5),rep(homeplayer[1],6)),
  "homeplayer2" = homeplayer[2],
  "homeplayer3" = c(rep(homeplayer[3],7), rep(homeplayer[7],2),rep(homeplayer[3],6)),
  "awayplayer1" = awayplayer[1],
  "awayplayer2" = c(rep(awayplayer[2],8),awayplayer[7], rep(awayplayer[2],6)),
  "awayplayer3" = awayplayer[3]
  )

toy2 <- data.frame(                          #DF2 para comprovar que funciona
  "id_play" = 1:20,
  "season" = c(rep("S2017",20)),
  "game_code" = c(rep(1,10), rep(2,10)),
  "quarter" = c(rep(1,3), rep(2,2),rep(3,2),rep(4,3),rep(1,4),rep(2,6)),
  "time" = c('00:00:00','00:03:20','00:05:12','00:11:20','00:15:36','00:21:45','00:27:20','00:31:45','0
  "points_home" = c(0,0,0,2,2,2,5,5,7,7,0,2,2,5,5,7,7,7,9,10),
  "points_away" = c(0,2,2,2,4,4,7,7,9,9,0,0,2,2,4,4,6,6,6,6),
  "homeplayer1" = c(rep(homeplayer[1],4),rep(homeplayer[6],5),rep(homeplayer[1],8), rep(homeplayer[1],3
  "homeplayer2" = homeplayer[2],
  "homeplayer3" = c(rep(homeplayer[3],7), rep(homeplayer[7],2),rep(homeplayer[3],9), rep(homeplayer[9],1
```

```
  "awayplayer1" = awayplayer[1],
  "awayplayer2" = c(rep(awayplayer[2],8),awayplayer[7], rep(awayplayer[2],9), rep(awayplayer[5],2)),
  "awayplayer3" = awayplayer[3]
  )

CHR_to_Time <- function(x){
  a <- as.POSIXct(x, tz = '', format = "%H:%M:%S", usetz = FALSE)
  tms <- times(format(a, "%H:%M:%S"))
  return(tms)
}

toy2$time <- CHR_to_Time(toy2$time)

toy_backup <- toy2
```

```
df <- toy2

df <- df %>%
        unite("lineups", homeplayer1:awayplayer3, remove = TRUE) %>%
        mutate(game_code = paste0("G", str_pad(game_code, 6, pad = "0")), quarter = paste0("Q", quarter)

names(df)
```

```
## [1] "id_play"     "season"      "game_code"   "quarter"     "time"
## [6] "points_home" "points_away" "lineups"
```

```
df
```

```
##    id_play season game_code quarter     time points_home points_away
## 1        1  S2017   G000001      Q1 00:00:00           0           0
## 2        2  S2017   G000001      Q1 00:03:20           0           2
## 3        3  S2017   G000001      Q1 00:05:12           0           2
## 4        4  S2017   G000001      Q2 00:11:20           2           2
## 5        5  S2017   G000001      Q2 00:15:36           2           4
## 6        6  S2017   G000001      Q3 00:21:45           2           4
## 7        7  S2017   G000001      Q3 00:27:20           5           7
## 8        8  S2017   G000001      Q4 00:31:45           5           7
## 9        9  S2017   G000001      Q4 00:33:00           7           9
## 10      10  S2017   G000001      Q4 00:36:17           7           9
## 11      11  S2017   G000002      Q1 00:00:00           0           0
## 12      12  S2017   G000002      Q1 00:03:48           2           0
## 13      13  S2017   G000002      Q1 00:04:45           2           2
## 14      14  S2017   G000002      Q1 00:06:46           5           2
## 15      15  S2017   G000002      Q2 00:11:21           5           4
## 16      16  S2017   G000002      Q2 00:12:30           7           4
## 17      17  S2017   G000002      Q2 00:14:20           7           6
## 18      18  S2017   G000002      Q2 00:16:12           7           6
## 19      19  S2017   G000002      Q2 00:17:09           9           6
## 20      20  S2017   G000002      Q2 00:19:54          10           6
##                                                                lineups
## 1  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 2  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 3  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 5  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
```

```
## 6  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 7  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 8  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 9  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
## 10 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 11 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 12 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 13 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 14 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 15 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 16 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 17 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 18 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 19 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
## 20 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
```

MERGE Temporada+game_code

```
df_merged <- df %>%  unite("SeasonGame", c("season", "game_code"))
df_merged
```

```
##    id_play    SeasonGame quarter     time points_home points_away
## 1        1 S2017_G000001      Q1 00:00:00           0           0
## 2        2 S2017_G000001      Q1 00:03:20           0           2
## 3        3 S2017_G000001      Q1 00:05:12           0           2
## 4        4 S2017_G000001      Q2 00:11:20           2           2
## 5        5 S2017_G000001      Q2 00:15:36           2           4
## 6        6 S2017_G000001      Q3 00:21:45           2           4
## 7        7 S2017_G000001      Q3 00:27:20           5           7
## 8        8 S2017_G000001      Q4 00:31:45           5           7
## 9        9 S2017_G000001      Q4 00:33:00           7           9
## 10      10 S2017_G000001      Q4 00:36:17           7           9
## 11      11 S2017_G000002      Q1 00:00:00           0           0
## 12      12 S2017_G000002      Q1 00:03:48           2           0
## 13      13 S2017_G000002      Q1 00:04:45           2           2
## 14      14 S2017_G000002      Q1 00:06:46           5           2
## 15      15 S2017_G000002      Q2 00:11:21           5           4
## 16      16 S2017_G000002      Q2 00:12:30           7           4
## 17      17 S2017_G000002      Q2 00:14:20           7           6
## 18      18 S2017_G000002      Q2 00:16:12           7           6
## 19      19 S2017_G000002      Q2 00:17:09           9           6
## 20      20 S2017_G000002      Q2 00:19:54          10           6
##                                                                    lineups
## 1  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 2  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 3  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 5  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 6  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 7  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 8  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 9  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
## 10 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 11 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
```

```
## 12 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 13 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 14 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 15 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 16 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 17 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 18 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 19 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
## 20 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
```

ORDENAR DF -> Ya no hace falta

UNIQUE quintetos

```
library(dplyr)

# Columnas TRUE o FALSE si son iguales a su lag row
df_merged$players_SAME <- df_merged$lineups == lag(df_merged$lineups)
df_merged$SeasonGame_SAME <- df_merged$SeasonGame == lag(df_merged$SeasonGame)

## Determinamos los primeros elementos de estas dos variables como FALSE para que no
## nos aparezca NA, ya que no puede evaluar con anterior
df_merged$players_SAME[1]    <- FALSE
df_merged$SeasonGame_SAME[1] <- FALSE

df_merged$NEW_STINT <- ifelse(((df_merged$players_SAME == FALSE)|(df_merged$SeasonGame_SAME == FALSE ))
                              TRUE, FALSE)
       ### 1ra condicions para cambio de jugadores y 2nda para cambio de partido.

df_merged
```

```
##    id_play    SeasonGame quarter     time points_home points_away
## 1        1 S2017_G000001      Q1 00:00:00           0           0
## 2        2 S2017_G000001      Q1 00:03:20           0           2
## 3        3 S2017_G000001      Q1 00:05:12           0           2
## 4        4 S2017_G000001      Q2 00:11:20           2           2
## 5        5 S2017_G000001      Q2 00:15:36           2           4
## 6        6 S2017_G000001      Q3 00:21:45           2           4
## 7        7 S2017_G000001      Q3 00:27:20           5           7
## 8        8 S2017_G000001      Q4 00:31:45           5           7
## 9        9 S2017_G000001      Q4 00:33:00           7           9
## 10      10 S2017_G000001      Q4 00:36:17           7           9
## 11      11 S2017_G000002      Q1 00:00:00           0           0
## 12      12 S2017_G000002      Q1 00:03:48           2           0
## 13      13 S2017_G000002      Q1 00:04:45           2           2
## 14      14 S2017_G000002      Q1 00:06:46           5           2
## 15      15 S2017_G000002      Q2 00:11:21           5           4
## 16      16 S2017_G000002      Q2 00:12:30           7           4
## 17      17 S2017_G000002      Q2 00:14:20           7           6
## 18      18 S2017_G000002      Q2 00:16:12           7           6
## 19      19 S2017_G000002      Q2 00:17:09           9           6
## 20      20 S2017_G000002      Q2 00:19:54          10           6
##                                                                    lineups
## 1  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
```

```
## 2  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 3  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 5  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 6  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 7  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 8  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 9  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
## 10 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 11 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 12 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 13 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 14 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 15 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 16 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 17 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 18 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 19 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
## 20 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
##    players_SAME SeasonGame_SAME NEW_STINT
## 1         FALSE           FALSE      TRUE
## 2          TRUE            TRUE     FALSE
## 3          TRUE            TRUE     FALSE
## 4          TRUE            TRUE     FALSE
## 5         FALSE            TRUE      TRUE
## 6          TRUE            TRUE     FALSE
## 7          TRUE            TRUE     FALSE
## 8         FALSE            TRUE      TRUE
## 9         FALSE            TRUE      TRUE
## 10        FALSE            TRUE      TRUE
## 11         TRUE           FALSE      TRUE
## 12         TRUE            TRUE     FALSE
## 13         TRUE            TRUE     FALSE
## 14         TRUE            TRUE     FALSE
## 15         TRUE            TRUE     FALSE
## 16         TRUE            TRUE     FALSE
## 17         TRUE            TRUE     FALSE
## 18         TRUE            TRUE     FALSE
## 19        FALSE            TRUE      TRUE
## 20         TRUE            TRUE     FALSE
```

Hasta aquí tenemos detectados cuando hay cambios

STINTS

```
### Filas que tenemos que conservar:
df_merged$stint <- ifelse((lead(df_merged$NEW_STINT) == TRUE)|(df_merged$SeasonGame_SAME == FALSE ),
                          df_merged$NEW_STINT, NA)
### La primera condicion nos mantiene las que son iguales anterior a la fila en la que estamos
### ha habiado cambio. La segunda condicion nos mantiene la primera entrada de cada partido.



# Para que nos aparezcan tambien la primera y la ultima entrada:
```

```r
n_df <- dim(df_merged)[1]
df_merged$stint[1] <- df_merged$NEW_STINT[1]
df_merged$stint[n_df] <- df_merged$NEW_STINT[n_df]

df_merged
```

```
##    id_play    SeasonGame quarter     time points_home points_away
## 1        1 S2017_G000001      Q1 00:00:00           0           0
## 2        2 S2017_G000001      Q1 00:03:20           0           2
## 3        3 S2017_G000001      Q1 00:05:12           0           2
## 4        4 S2017_G000001      Q2 00:11:20           2           2
## 5        5 S2017_G000001      Q2 00:15:36           2           4
## 6        6 S2017_G000001      Q3 00:21:45           2           4
## 7        7 S2017_G000001      Q3 00:27:20           5           7
## 8        8 S2017_G000001      Q4 00:31:45           5           7
## 9        9 S2017_G000001      Q4 00:33:00           7           9
## 10      10 S2017_G000001      Q4 00:36:17           7           9
## 11      11 S2017_G000002      Q1 00:00:00           0           0
## 12      12 S2017_G000002      Q1 00:03:48           2           0
## 13      13 S2017_G000002      Q1 00:04:45           2           2
## 14      14 S2017_G000002      Q1 00:06:46           5           2
## 15      15 S2017_G000002      Q2 00:11:21           5           4
## 16      16 S2017_G000002      Q2 00:12:30           7           4
## 17      17 S2017_G000002      Q2 00:14:20           7           6
## 18      18 S2017_G000002      Q2 00:16:12           7           6
## 19      19 S2017_G000002      Q2 00:17:09           9           6
## 20      20 S2017_G000002      Q2 00:19:54          10           6
##                                                                    lineups
## 1  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 2  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 3  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4  homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 5  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 6  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 7  homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 8  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 9  homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
## 10 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 11 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 12 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 13 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 14 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 15 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 16 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 17 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 18 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 19 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
## 20 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
##    players_SAME SeasonGame_SAME NEW_STINT stint
## 1         FALSE           FALSE      TRUE  TRUE
## 2          TRUE            TRUE     FALSE    NA
## 3          TRUE            TRUE     FALSE    NA
## 4          TRUE            TRUE     FALSE FALSE
## 5         FALSE            TRUE      TRUE    NA
```

```
## 6          TRUE            TRUE     FALSE    NA
## 7          TRUE            TRUE     FALSE FALSE
## 8         FALSE            TRUE      TRUE  TRUE
## 9         FALSE            TRUE      TRUE  TRUE
## 10        FALSE            TRUE      TRUE  TRUE
## 11         TRUE           FALSE      TRUE  TRUE
## 12         TRUE            TRUE     FALSE    NA
## 13         TRUE            TRUE     FALSE    NA
## 14         TRUE            TRUE     FALSE    NA
## 15         TRUE            TRUE     FALSE    NA
## 16         TRUE            TRUE     FALSE    NA
## 17         TRUE            TRUE     FALSE    NA
## 18         TRUE            TRUE     FALSE FALSE
## 19        FALSE            TRUE      TRUE    NA
## 20         TRUE            TRUE     FALSE FALSE
```

```
STINTS <- df_merged %>% drop_na(stint)          #Eliminar NA rows
STINTS$ID_Stint <- 1:nrow(STINTS)               #Crear Identificador Stints

Restar_time <- function(x){
  s <- period_to_seconds(hms(x) - lag(period_to_seconds(hms(x))))
  td <- seconds_to_period(s)
  sprintf('%02d:%02d:%02d', td@hour, minute(td), second(td))
}

STINTS$stint_times <- times(ifelse(STINTS$SeasonGame_SAME == TRUE, Restar_time(STINTS$time), "00:00:00"))









#View(STINTS %>% select(c(ID_Stint, stint_times, points_home, points_away)))

PM_function <- function(h,a){
  PM <- (h-lag(h))-(a-lag(a))
  PM
}

STINTS$PM_H <- ifelse(STINTS$SeasonGame_SAME == TRUE,
                      PM_function(STINTS$points_home, STINTS$points_away), 0)

STINTS$PM_A <- -STINTS$PM_H
STINTS
```

```
##    id_play    SeasonGame quarter     time points_home points_away
## 1        1 S2017_G000001      Q1 00:00:00           0           0
## 2        4 S2017_G000001      Q2 00:11:20           2           2
## 3        7 S2017_G000001      Q3 00:27:20           5           7
## 4        8 S2017_G000001      Q4 00:31:45           5           7
## 5        9 S2017_G000001      Q4 00:33:00           7           9
## 6       10 S2017_G000001      Q4 00:36:17           7           9
```

```
## 7      11 S2017_G000002      Q1 00:00:00           0           0
## 8      18 S2017_G000002      Q2 00:16:12           7           6
## 9      20 S2017_G000002      Q2 00:19:54          10           6
##                                                                    lineups
## 1 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 2 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 3 homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4 homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 5 homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
## 6 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 7 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 8 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 9 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
##   players_SAME SeasonGame_SAME NEW_STINT stint ID_Stint stint_times PM_H PM_A
## 1        FALSE           FALSE      TRUE  TRUE        1    00:00:00    0    0
## 2         TRUE            TRUE     FALSE FALSE        2    00:11:20    0    0
## 3         TRUE            TRUE     FALSE FALSE        3    00:16:00   -2    2
## 4        FALSE            TRUE      TRUE  TRUE        4    00:04:25    0    0
## 5        FALSE            TRUE      TRUE  TRUE        5    00:01:15    0    0
## 6        FALSE            TRUE      TRUE  TRUE        6    00:03:17    0    0
## 7         TRUE           FALSE      TRUE  TRUE        7    00:00:00    0    0
## 8         TRUE            TRUE     FALSE FALSE        8    00:16:12    1   -1
## 9         TRUE            TRUE     FALSE FALSE        9    00:03:42    3   -3
```

```
STINTS_Reduced <- STINTS %>% select(c(lineups, stint_times, PM_H, PM_A))
STINTS_Reduced
```

```
##                                                                    lineups
## 1 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 2 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 3 homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4 homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 5 homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
## 6 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 7 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 8 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 9 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
##   stint_times PM_H PM_A
## 1    00:00:00    0    0
## 2    00:11:20    0    0
## 3    00:16:00   -2    2
## 4    00:04:25    0    0
## 5    00:01:15    0    0
## 6    00:03:17    0    0
## 7    00:00:00    0    0
## 8    00:16:12    1   -1
## 9    00:03:42    3   -3
```

```
# Sumar PM de los mismos lineups:
STINTS_Reduced_Lineups <-  aggregate(. ~ lineups, STINTS_Reduced, sum, na.rm = TRUE)
STINTS_Reduced_Lineups
```

```
##                                                                    lineups
## 1 homeplayer1_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 2 homeplayer1_homeplayer2_homeplayer9_awayplayer1_awayplayer5_awayplayer3
```

```
## 3 homeplayer6_homeplayer2_homeplayer3_awayplayer1_awayplayer2_awayplayer3
## 4 homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer2_awayplayer3
## 5 homeplayer6_homeplayer2_homeplayer7_awayplayer1_awayplayer7_awayplayer3
##    stint_times PM_H PM_A
## 1 0.0214004630    1   -1
## 2 0.0025694444    3   -3
## 3 0.0111111111   -2    2
## 4 0.0030671296    0    0
## 5 0.0008680556    0    0
```

PARTE 2: Dummys Jugadores

```
#PRUEBA2 - fastDummies

# Vector con todos los nombres de los jugadores:
vec_players <- unique(c(homeplayer, awayplayer))
length(vec_players)
```

```
## [1] 20
```

```
## DUDA:
# Como especifico que jugador tiene PM positivo o negativo? Dependiendo de si local o visitante,
# su PM sera diferente, pero no siempre sera LOCAL. Como determino de cual es cual?

df_dummys <- fastDummies::dummy_cols(STINTS_Reduced_Lineups, select_columns = "lineups", split = "_")
df_dummys_sort <- df_dummys[ , order(names(df_dummys))]

df_dummys_sort[-1]
```

```
##   lineups_awayplayer1 lineups_awayplayer2 lineups_awayplayer3
## 1                   1                   1                   1
## 2                   1                   0                   1
## 3                   1                   1                   1
## 4                   1                   1                   1
## 5                   1                   0                   1
##   lineups_awayplayer5 lineups_awayplayer7 lineups_homeplayer1
## 1                   0                   0                   1
## 2                   1                   0                   1
## 3                   0                   0                   0
## 4                   0                   0                   0
## 5                   0                   1                   0
##   lineups_homeplayer2 lineups_homeplayer3 lineups_homeplayer6
## 1                   1                   1                   0
## 2                   1                   0                   0
## 3                   1                   1                   1
## 4                   1                   0                   1
## 5                   1                   0                   1
##   lineups_homeplayer7 lineups_homeplayer9 PM_A PM_H  stint_times
## 1                   0                   0   -1    1 0.0214004630
## 2                   0                   1   -3    3 0.0025694444
## 3                   0                   0    2   -2 0.0111111111
## 4                   1                   0    0    0 0.0030671296
## 5                   1                   0    0    0 0.0008680556
```