## referees-cpmr

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```
## Installing package into '/Users/runner/work/_temp/Library'
## (as 'lib' is unspecified)
##
## The downloaded binary packages are in
## /var/folders/24/8k48j16d249_n_qfxws16xvm0000gn/T//RtmpvExqVS/downloaded_packages
## -- Attaching packages ----- tidyverse 1.3.2 --
## v ggplot2 3.3.6 v purrr 0.3.4
## v tibble 3.1.8 v dplyr 1.0.10
## v tidyr 1.2.1 v stringr 1.4.1
## v readr 2.1.2 v forcats 0.5.2
## -- Conflicts ----- tidyverse conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag() masks stats::lag()
raw_data <- read.csv("../scraped-data/referees.csv")</pre>
raw_data <- as_tibble(raw_data)</pre>
head(raw_data)
## # A tibble: 6 x 4
    Referee Matches Red.cards Yellow.cards
##
     <chr>
                   <int> <int> <int>
## 1 Michael Oliver 5 0
## 2 Anthony Taylor 5 2
                                              16
                                              17
                       5
                                 2
## 3 Paul Tierney
                                              21
## 4 Stuart Attwell
                       4
                                 1
                                              13
## 5 Peter Bankes
                                 0
                         4
                                               21
## 6 Jarred Gillett
                                   0
                                               18
raw_columns <- raw_data %>% select(Referee, Matches, Yellow.cards)
head(raw_columns)
## # A tibble: 6 x 3
##
    Referee Matches Yellow.cards
                    <int>
     <chr>
                               <int>
## 1 Michael Oliver 5
                      5
## 2 Anthony Taylor
                                    17
## 3 Paul Tierney
                        5
                                    21
## 4 Stuart Attwell
                                   13
## 5 Peter Bankes
                                    21
## 6 Jarred Gillett
                                     18
```

```
new_table <- raw_columns %>% mutate(yellow_card_ratio = Yellow.cards / Matches)
new_table <- new_table[order(-new_table$yellow_card_ratio),]
head(new_table)</pre>
```

```
## # A tibble: 6 x 4
##
    Referee
                    Matches Yellow.cards yellow_card_ratio
##
    <chr>
                       <int>
                                   <int>
## 1 John Brooks
                           3
                                       16
                                                      5.33
                                                     5.25
## 2 Peter Bankes
                           4
                                       21
## 3 Michael Salisbury
                           3
                                       15
                                                      5
## 4 Graham Scott
                                                      5
                           1
                                       5
## 5 Craig Pawson
                           4
                                       19
                                                      4.75
## 6 Jarred Gillett
                                       18
                                                      4.5
```

```
data <- new_table %>% select(Referee, yellow_card_ratio)
head(data)
```

```
## # A tibble: 6 x 2
## Referee
                   yellow_card_ratio
##
   <chr>
                                <dbl>
## 1 John Brooks
                                 5.33
## 2 Peter Bankes
                                 5.25
                                 5
## 3 Michael Salisbury
## 4 Graham Scott
                                 5
## 5 Craig Pawson
                                 4.75
## 6 Jarred Gillett
                                 4.5
```

```
write.csv(data, "../cleaned-data/referees-cpmr.csv", row.names = FALSE)
```