## 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//RtmpCzTjz7/downloaded_packages
## -- Attaching packages ------ tidyverse 1.3.1 --
## v ggplot2 3.3.6 v purrr 0.3.4

## v tibble 3.1.7 v dplyr 1.0.9

## v tidyr 1.2.0 v stringr 1.4.0

## v readr 2.1.2 v forcats 0.5.1
## -- 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>
                    <nt><nt><
28 5
27
## 1 Anthony Taylor
                                            104
## 2 Paul Tierney
                                5 2
                                            107
                    26
## 3 Martin Atkinson
                                             65
## 4 Mike Dean
                       26
                                 2
                                              82
                                  7
## 5 Michael Oliver
                       26
                                              77
                        26
## 6 Craig Pawson
                                              109
raw_columns <- raw_data %>% select(Referee, Matches, Yellow.cards)
head(raw_columns)
## # A tibble: 6 x 3
## Referee Matches Yellow.cards
## <chr>
                    <int> <int>
```

```
## 1 Anthony Taylor
                                      104
                          28
## 2 Paul Tierney
                                      107
                          27
## 3 Martin Atkinson
                                      65
                          26
## 4 Mike Dean
                          26
                                       82
## 5 Michael Oliver
                          26
                                       77
## 6 Craig Pawson
                          26
                                      109
new_table <- raw_columns %>% mutate(yellow_card_ratio = Yellow.cards / Matches)
new_table <- new_table[order(-new_table$yellow_card_ratio),]</pre>
head(new_table)
## # A tibble: 6 x 4
    Referee Matches Yellow.cards yellow_card_ratio
##
     <chr>
                     <int>
                                   <int>
                                                     <dbl>
## 1 John Brooks
                                                      5.25
                                      21
## 2 David Coote
                         20
                                      93
                                                      4.65
## 3 Peter Bankes
                                                      4.58
                         12
                                      55
## 4 Kevin Friend
                         18
                                      78
                                                      4.33
## 5 Craig Pawson
                         26
                                     109
                                                      4.19
## 6 Darren England
                         15
                                      60
data <- new_table %>% select(Referee, yellow_card_ratio)
head(data)
## # A tibble: 6 x 2
## Referee yellow_card_ratio
##
     <chr>
                                <dbl>
## 1 John Brooks
                                 5.25
## 2 David Coote
                                 4.65
## 3 Peter Bankes
                                 4.58
## 4 Kevin Friend
                                 4.33
## 5 Craig Pawson
                                 4.19
## 6 Darren England
write.csv(data, "../cleaned-data/referees-cpmr.csv", row.names = FALSE)
```