## 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//RtmpXBf01T/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 1.0.9
## v tidyr 1.2.0 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>
                     3
3
3
## 1 Stuart Attwell
                                1
## 2 Peter Bankes
                                0
                                            14
                               0
## 3 Jarred Gillett
                                            12
## 4 Andy Madley
                      3
                               0
                                            8
                      3
                               0
## 5 Michael Oliver
                                            10
## 6 Craig Pawson
                                 0
                                            15
raw_columns <- raw_data %>% select(Referee, Matches, Yellow.cards)
head(raw_columns)
## # A tibble: 6 x 3
##
    Referee Matches Yellow.cards
                  <int> <int>
    <chr>
## 1 Stuart Attwell 3
## 2 Peter Bankes
                      3
                                  14
## 3 Jarred Gillett 3
## 4 Andy Madley 3
                                   12
                                  8
## 5 Michael Oliver
                      3
                                  10
## 6 Craig Pawson
                      3
                                   15
```

```
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>
                                                       <dbl>
## 1 Michael Salisbury
                            2
                                        11
                                                        5.5
## 2 Craig Pawson
                            3
                                        15
                                                        5
## 3 John Brooks
                            2
                                        10
                                                        5
## 4 Graham Scott
                                                        5
                            1
                                         5
## 5 Peter Bankes
                            3
                                        14
                                                        4.67
## 6 Paul Tierney
                            3
                                        14
                                                        4.67
```

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

```
## # A tibble: 6 x 2
## Referee
                      yellow_card_ratio
##
    <chr>
                                   <dbl>
## 1 Michael Salisbury
                                   5.5
## 2 Craig Pawson
                                    5
## 3 John Brooks
                                   5
                                    5
## 4 Graham Scott
## 5 Peter Bankes
                                   4.67
## 6 Paul Tierney
                                    4.67
```

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