## 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//RtmpznqbEd/downloaded_packages
## -- Attaching packages ----- tidyverse 1.3.2 --
## v ggplot2 3.4.0 v purrr 0.3.5
## v tibble 3.1.8 v dplyr 1.0.10
## v tidyr 1.2.1 v stringr 1.4.1
## v readr 2.1.3 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 " 12
## 2 " Anthony Taylor " 12
## 3 " Paul Tierney " 11
                                    1
                                                     39
                                        5
                                                      44
                                      2
                                                      43
## 4 " Simon Hooper "
## 5 " Andy Madley "
                            9
                                                      26
                             9
                                         0
                                                      25
## 6 " Stuart Attwell " 8
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 " Michael Oliver " 12
## 2 " Anthony Taylor " 12
                                         39
                                           44
                       11
9
## 3 " Paul Tierney "
                                           43
## 4 " Simon Hooper "
## 5 " Andy Madley "
                            9
                                           26
                                           25
## 6 " Stuart Attwell "
                             8
                                            24
```

```
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 " Robert Madley "
                               1
                                            6
                                                           6
## 2 " Michael Salisbury "
                                6
                                            31
                                                           5.17
## 3 " Craig Pawson "
                                7
                                            31
                                                           4.43
## 4 " Peter Bankes "
                                                           4.33
                                6
                                            26
## 5 " John Brooks "
                               6
                                            24
## 6 " Jarred Gillett "
                                            24
                                                           4
```

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

```
## # A tibble: 6 x 2
## Referee
                          yellow_card_ratio
                                      <dbl>
##
   <chr>
## 1 " Robert Madley "
## 2 " Michael Salisbury "
                                       5.17
## 3 " Craig Pawson "
                                       4.43
## 4 " Peter Bankes "
                                       4.33
## 5 " John Brooks "
## 6 " Jarred Gillett "
                                       4
```

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