## referees-cpmr

## Charles Adedotun

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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//RtmplTKjpz/downloaded_packages
## -- Attaching packages ----- tidyverse 1.3.2 --
## v ggplot2 3.3.6 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>
                         9
                                   5
## 1 " Anthony Taylor "
                                                    33
                            8
## 2 " Michael Oliver "
                                       0
                                                    26
                                    0
2
0
## 3 " Paul Tierney "
                            8
                                                    36
## 4 " Simon Hooper "
## 5 " Andy Madley "
                            7
                                                    18
                            7
                                        0
                                                    21
## 6 " Stuart Attwell " 6
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 " 9 ## 2 " Michael Oliver " 8
                                        33
                                          26
                            8
## 3 " Paul Tierney "
                                          36
## 4 " Simon Hooper "
## 5 " Andy Madley "
                            7
                                          18
                            7
                                          21
## 6 " Stuart Attwell "
                                          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>
                                                           <dbl>
## 1 " Michael Salisbury "
                                5
                                            24
                                                           4.8
## 2 " Peter Bankes "
                                5
                                            23
                                                           4.6
## 3 " Paul Tierney "
                               8
                                            36
                                                           4.5
## 4 " Craig Pawson "
                                            27
                                6
                                                           4.5
## 5 " John Brooks "
                               5
                                                           4.2
                                            21
## 6 " Robert Jones "
                                            25
                                                           4.17
```

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

```
## # A tibble: 6 x 2
## Referee
                          yellow_card_ratio
##
   <chr>
                                      <dbl>
## 1 " Michael Salisbury "
                                       4.8
## 2 " Peter Bankes "
                                       4.6
## 3 " Paul Tierney "
                                       4.5
## 4 " Craig Pawson "
                                       4.5
## 5 " John Brooks "
                                       4.2
## 6 " Robert Jones "
                                       4.17
```

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