

# 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/24/8k48jl6d249_n_qfxwsl6xvm0000gn/T//RtmpgjuvS3t/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")
raw_data <- as_tibble(raw_data)
```

```
head(raw_data)
```

```
## # A tibble: 6 x 4
##   Referee      Matches Red.cards Yellow.cards
##   <chr>      <int>    <int>      <int>
## 1 " Michael Oliver "      11         1         32
## 2 " Anthony Taylor "      11         5         38
## 3 " Paul Tierney "       10         2         41
## 4 " Simon Hooper "        9         0         26
## 5 " Robert Jones "        8         1         28
## 6 " Andy Madley "         8         0         24
```

```
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 "      11         32
## 2 " Anthony Taylor "      11         38
## 3 " Paul Tierney "       10         41
## 4 " Simon Hooper "        9         26
## 5 " Robert Jones "        8         28
## 6 " Andy Madley "         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)
```

```
## # 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 "           6            26          4.33
## 5 " Paul Tierney "          10            41          4.1
## 6 " John Brooks "           6            24           4
```

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

```
## # A tibble: 6 x 2
##   Referee      yellow_card_ratio
##   <chr>         <dbl>
## 1 " Robert Madley "           6
## 2 " Michael Salisbury "       5.17
## 3 " Craig Pawson "           4.43
## 4 " Peter Bankes "           4.33
## 5 " Paul Tierney "           4.1
## 6 " John Brooks "           4
```

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