

# 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//RtmpquIqny/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 1.0.10
## v tidyr 1.2.1        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")
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 "      6         0         20
## 2 " Anthony Taylor "      6         3         20
## 3 " Simon Hooper "       5         0         15
## 4 " Craig Pawson "       5         0         23
## 5 " Paul Tierney "       5         2         21
## 6 " Stuart Attwell "     4         1         13
```

```
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 "      6         20
## 2 " Anthony Taylor "      6         20
## 3 " Simon Hooper "       5         15
## 4 " Craig Pawson "       5         23
## 5 " Paul Tierney "       5         21
## 6 " Stuart Attwell "     4         13
```

```
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 " John Brooks "         3         16          5.33
## 2 " Peter Bankes "        4         21          5.25
## 3 " Michael Salisbury "   3         15           5
## 4 " Graham Scott "        1          5           5
## 5 " Craig Pawson "        5         23          4.6
## 6 " Jarred Gillett "      4         18          4.5
```

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

```
## # A tibble: 6 x 2
##   Referee      yellow_card_ratio
##   <chr>         <dbl>
## 1 " John Brooks "         5.33
## 2 " Peter Bankes "         5.25
## 3 " Michael Salisbury "     5
## 4 " Graham Scott "         5
## 5 " Craig Pawson "         4.6
## 6 " Jarred Gillett "       4.5
```

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