

# NFL Positional

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9/1/2020

Lets start by loading all of our packages at once.

```
library(pacman)
p_load(rvest,tidyverse,data.table,janitor,cowplot)
```

Now let's scrape some data on NFL salaries for 2019, which we will combine with win-loss data from wikipedia.

```
#exp = expenditures (portion of salary caps on each position)
source_exp_19 <- read_html("https://www.spotrac.com/nfl/positional/breakdown/2019/") %>%
  html_nodes("#main > div > table") %>%
  html_table(fill = TRUE)

exp_19 <- source_exp_19[[1]] %>%
  mutate(
    team = gsub(" ", "", Team),
    Team = NULL
  )

exp_19[2:11] <- lapply(exp_19[2:11],function(x) {as.numeric(gsub("\s([0-9]+)\. [0-9]M","",x))})

pos_exp_19 <- exp_19 %>% pivot_longer(!c(team, Players)) %>%
  rename(position = name, salary = value)

source_win_19 <- read_html("https://en.wikipedia.org/wiki/2019_NFL_season") %>%
  html_nodes("#mw-content-text > div.mw-parser-output > div:nth-child(68) > table") %>%
  html_table(fill = TRUE)

#win = win loss statistics
win_19 <- source_win_19[[1]] %>%
  select(1:10) %>%
  filter(!grepl("^\u00c2|NFC",X2),!duplicated(.)) %>%
  row_to_names(row_number = 1) %>%
  rename(team = viewtalkedit) %>%
  mutate(PCT = as.numeric(PCT))
win_19[c(2:4,8,9)] <- lapply(win_19[c(2:4,8,9)],as.integer)
win_19$team <- gsub("[^[:alpha:]]","",win_19$team)

data_19_long <- left_join(pos_exp_19,win_19)

## Joining, by = "team"
```

```
data_19_long
```

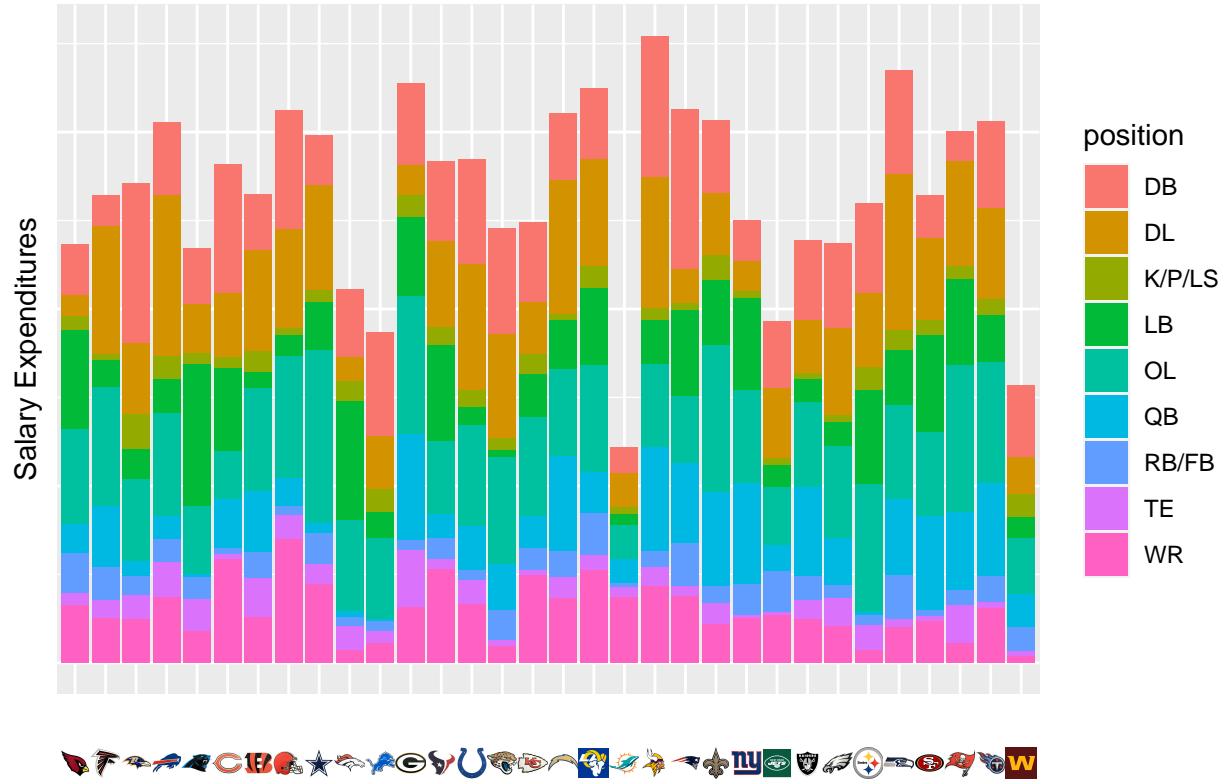
```
## # A tibble: 330 x 13
##   Players team position salary     W     L     T   PCT   DIV CONF   PF   PA
##   <int> <chr> <chr>    <dbl> <int> <int> <dbl> <chr> <chr> <int> <int>
## 1      53 Ariz~ QB      8.30e6     5    10  1 0.344 1-5 3-8-1  361  442
## 2      53 Ariz~ RB/FB   1.14e7     5    10  1 0.344 1-5 3-8-1  361  442
## 3      53 Ariz~ WR     1.63e7     5    10  1 0.344 1-5 3-8-1  361  442
## 4      53 Ariz~ TE     3.16e6     5    10  1 0.344 1-5 3-8-1  361  442
## 5      53 Ariz~ OL     2.71e7     5    10  1 0.344 1-5 3-8-1  361  442
## 6      53 Ariz~ DL     6.31e6     5    10  1 0.344 1-5 3-8-1  361  442
## 7      53 Ariz~ LB     2.78e7     5    10  1 0.344 1-5 3-8-1  361  442
## 8      53 Ariz~ DB     1.42e7     5    10  1 0.344 1-5 3-8-1  361  442
## 9      53 Ariz~ K/P/LS  3.69e6     5    10  1 0.344 1-5 3-8-1  361  442
## 10     53 Ariz~ Total   1.18e8     5    10  1 0.344 1-5 3-8-1  361  442
## # ... with 320 more rows, and 1 more variable: STK <chr>
```

Next, lets get a barchart of positional data for each team. To start, p will be our base plot.

```
#Graph teams based on salary distributions
p <- data_19_long %>%
  filter(!position == "Total", !team == "Average") %>%
  ggplot() +
  geom_bar(
    aes(
      x = team,
      y = salary,
      fill = position
    ),
    stat = "identity"
  ) +
  theme(
    axis.text = element_blank(),
    axis.ticks = element_blank(),
    axis.title.x = element_blank()
  ) +
  ylab("Salary Expenditures")
```

Next, we will create an x-axis depicting each teams logo. This is implemented through a brute force google image search for each team.

```
ggdraw(insert_xaxis_grob(p,pimage,position = "bottom"))
```



This graph is conclusive evidence that the Miami Dolphins tanked. Ripperino to season pass holders.