

NFL_Data_Analysis

Isaac Swope

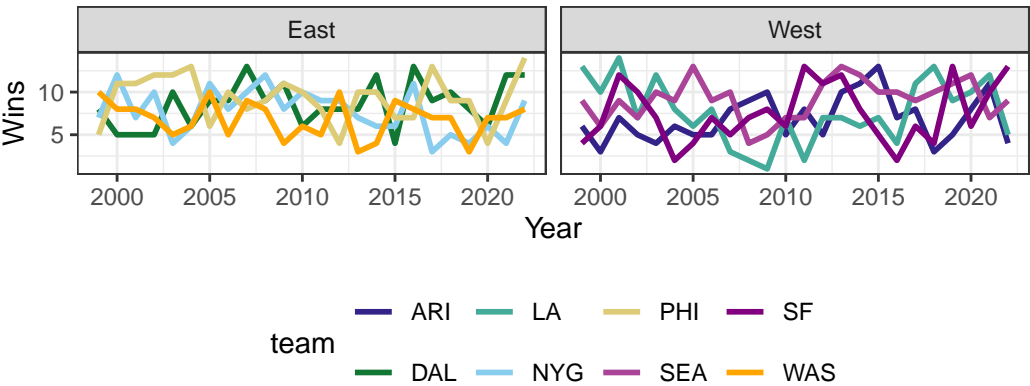
Kyle Barber

Tim Smith

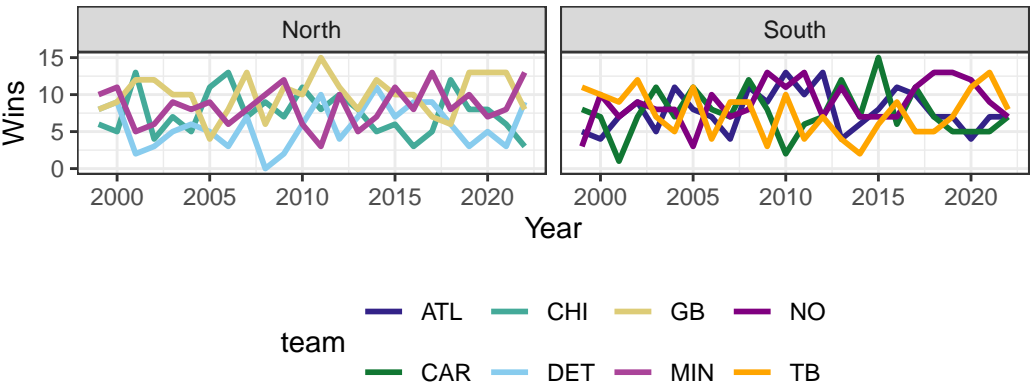
2025-12-03

Data Overview

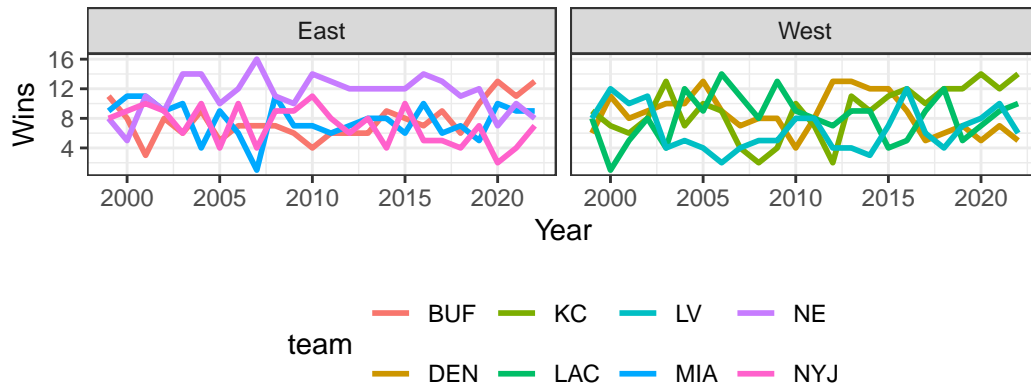
NFC teams and their wins from year to year



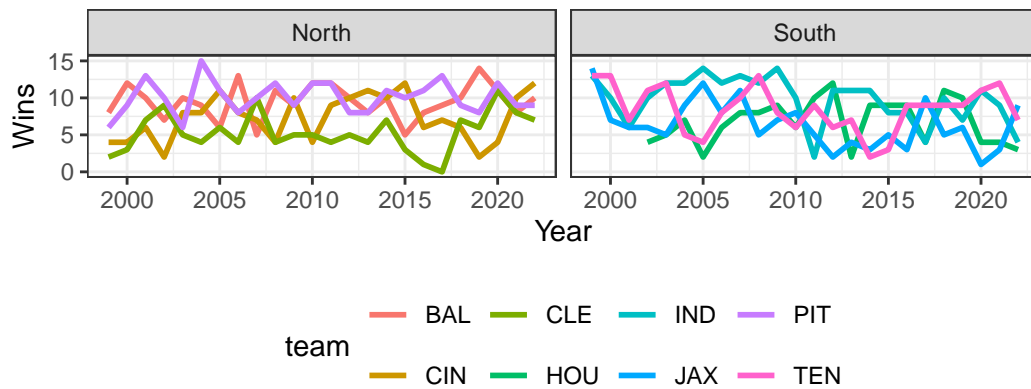
NFC teams and their wins from year to year



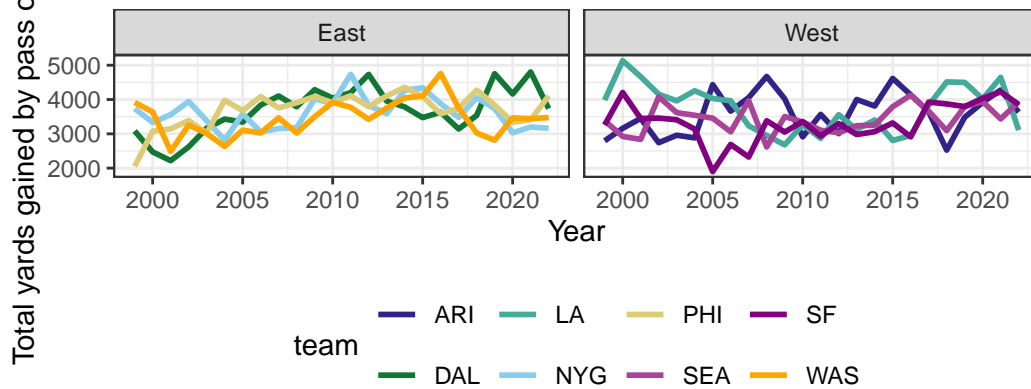
AFC teams and their wins from year to year



AFC teams and their wins from year to year

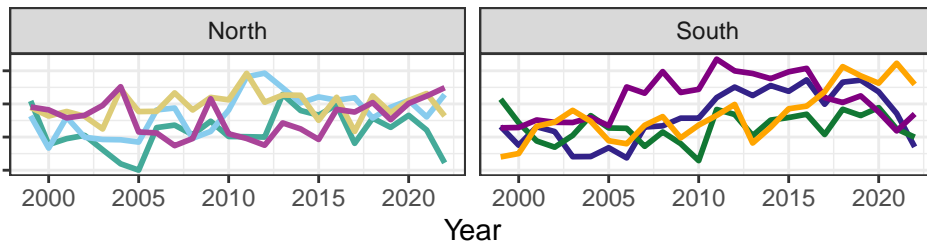


NFC teams and their wins from year to year



Total yards gained by pass on d€

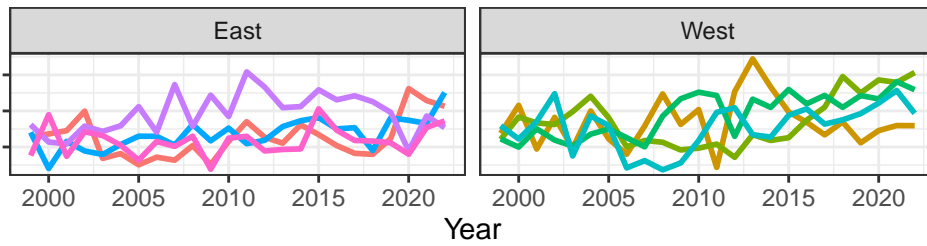
NFC teams and their wins from year to year



team
ATL CHI GB NO
CAR DET MIN TB

Total yards gained by pass on d€

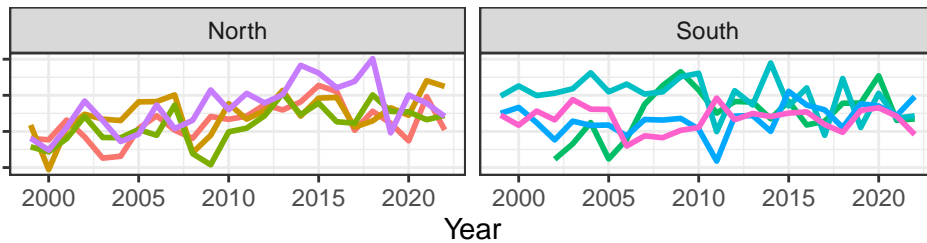
AFC teams and their wins from year to year



team
BUF KC LV NE
DEN LAC MIA NYJ

Total yards gained by pass on d€

AFC teams and their wins from year to year



team
BAL CLE IND PIT
CIN HOU JAX TEN

Code Appendix

```
#|label: Packages

#Tidyverse Coding Styling
library(tidyverse)
library(dbplyr)

#|label: Importing Data

NFL_raw <- read.csv("nfl-team-statistics (1).csv")

#|label: Adding East, West, North and South Conferences
NFC_East_data <- NFL_raw %>%
  filter(team %in% c("DAL", "NYG", "PHI", "WAS"))%>%
  mutate(Conf = 'NFC_East')

NFC_West_data <- NFL_raw %>%
  filter(team %in% c("LA", "SEA", "SF", "ARI"))%>%
  mutate(Conf = 'NFC_West')

NFC_North_data <- NFL_raw %>%
  filter(team %in% c("CHI", "GB", "DET", "MIN"))%>%
  mutate(Conf = 'NFC_North')

NFC_South_data <- NFL_raw %>%
  filter(team %in% c("TB", "CAR", "ATL", "NO"))%>%
  mutate(Conf = 'NFC_South')

AFC_East_data <- NFL_raw %>%
  filter(team %in% c("NE", "BUF", "MIA", "NYJ"))%>%
  mutate(Conf = 'AFC_East')

AFC_West_data <- NFL_raw %>%
  filter(team %in% c("DEN", "LAC", "KC", "LV"))%>%
  mutate(Conf = 'AFC_West')

AFC_North_data <- NFL_raw %>%
  filter(team %in% c("BAL", "PIT", "CIN", "CLE"))%>%
  mutate(Conf = 'AFC_North')

AFC_South_data <- NFL_raw %>%
  filter(team %in% c("JAX", "IND", "HOU", "TEN"))%>%
  mutate(Conf = 'AFC_South')

NFL_Clean <- bind_rows(NFC_East_data, NFC_North_data, NFC_South_data, NFC_West_data, AFC_East_data, AFC_West_data, AFC_North_data, AFC_South_data) %>%
  arrange(season, team)%>%
  separate_wider_delim(
```

```

    cols = 'Conf',
    delim = '_',
    names = c('Conf', 'Div')
  )

NFL_Clean%>%
  filter(Conf == "NFC")%>%
  filter(Div %in% c("East", "West"))%>%
  ggplot(
    mapping = aes(
      x = season,
      y = wins,
      color = team
    )
  ) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 1
    x = "Year",
    y = "Wins",
    color = "team",
    shape = "team",
    title = "NFC teams and their wins from year to year"
  ) +
  scale_color_manual(
    values = c("#332288", "#117733", "#44AA99", "#88CCEE", "#DDCC77", "#AA4499", "#800080", "#FF
  ) +
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

NFL_Clean%>%
  filter(Conf == "NFC")%>%
  filter(Div %in% c("North", "South"))%>%
  group_by(Div)%>%
  ggplot(
    mapping = aes(
      x = season,
      y = wins,
      color = team
    )
  ) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 1

```

```

    x = "Year",
    y = "Wins",
    color = "team",
    shape = "team",
    title = "NFC teams and their wins from year to year"
  ) +
  scale_color_manual(
    values = c("#332288", "#117733", "#44AA99", "#88CCEE", "#DDCC77", "#AA4499", "#800080", "#FF
  ) +
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

NFL_Clean%>%
  filter(Conf == "AFC")%>%
  filter(Div %in% c("East", "West"))%>%
  group_by(Div)%>%
  ggplot(
    mapping = aes(
      x = season,
      y = wins,
      color = team
    )
  ) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 1
    x = "Year",
    y = "Wins",
    color = "team",
    shape = "team",
    title = "AFC teams and their wins from year to year"
  ) +
  scale_color_discrete() +
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

NFL_Clean%>%
  filter(Conf == "AFC")%>%
  filter(Div %in% c("North", "South"))%>%
  group_by(Div)%>%
  ggplot(
    mapping = aes(

```

```

    x = season,
    y = wins,
    color = team
  )
) +
geom_line(linewidth = 1) +
facet_wrap(~Div) +
labs(#Step 4: add labels and title to the data visualization and create the colors for the 1.
  x = "Year",
  y = "Wins",
  color = "team",
  shape = "team",
  title = "AFC teams and their wins from year to year"
) +
scale_color_discrete()+
theme_bw() +
theme(
  legend.position = "bottom"
)

NFL_Clean%>%
  filter(Conf == "NFC")%>%
  filter(Div %in% c("East", "West"))%>%
ggplot(
  mapping = aes(
    x = season,
    y = offense_total_yards_gained_pass,
    color = team
  )
) +
geom_line(linewidth = 1) +
facet_wrap(~Div) +
labs(#Step 4: add labels and title to the data visualization and create the colors for the 1.
  x = "Year",
  y = "Total yards gained by pass on defense",
  color = "team",
  shape = "team",
  title = "NFC teams and their wins from year to year"
) +
scale_color_manual(
  values = c("#332288", "#117733", "#44AA99", "#88CCEE", "#DDCC77", "#AA4499", "#800080", "#FF
)+
theme_bw() +
theme(
  legend.position = "bottom"
)

```

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NFL_Clean%>%
  filter(Conf == "NFC")%>%
  filter(Div %in% c("North", "South"))%>%
  group_by(Div)%>%
  ggplot(
    mapping = aes(
      x = season,
      y = offense_total_yards_gained_pass,
      color = team
    )
  ) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 1.
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    y = "Total yards gained by pass on defense",
    color = "team",
    shape = "team",
    title = "NFC teams and their wins from year to year"
  ) +
  scale_color_manual(
    values = c("#332288", "#117733", "#44AA99", "#88CCEE", "#DDCC77", "#AA4499", "#800080", "#FF
  )+
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

NFL_Clean%>%
  filter(Conf == "AFC")%>%
  filter(Div %in% c("East", "West"))%>%
  group_by(Div)%>%
  ggplot(
    mapping = aes(
      x = season,
      y = offense_total_yards_gained_pass,
      color = team
    )
  ) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 1.
    x = "Year",
    y = "Total yards gained by pass on defense",
    color = "team",
    shape = "team",

```



```

    title = "AFC teams and their wins from year to year"
  ) +
  scale_color_discrete()+
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

NFL_Clean%>%
  filter(Conf == "AFC")%>%
  filter(Div %in% c("North", "South"))%>%
  group_by(Div)%>%
  ggplot(
    mapping = aes(
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      y = offense_total_yards_gained_pass,
      color = team
    )
  ) +
  geom_line(linewidth = 1) +
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    color = "team",
    shape = "team",
    title = "AFC teams and their wins from year to year"
  ) +
  scale_color_discrete()+
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

```