Rankings Viz

Group E

12/11/2021

```r
knitr::opts_chunk$set(message = FALSE, warning = FALSE)
```

```r
library(readr)
rank_URLs <- c("https://raw.githubusercontent.com/JeffSackmann/tennis_wta/master/wta_rankings_90s.csv",
               "https://raw.githubusercontent.com/JeffSackmann/tennis_wta/master/wta_rankings_00s.csv",
               "https://raw.githubusercontent.com/JeffSackmann/tennis_wta/master/wta_rankings_10s.csv",
               "https://raw.githubusercontent.com/JeffSackmann/tennis_wta/master/wta_rankings_20s.csv",
               "https://raw.githubusercontent.com/JeffSackmann/tennis_wta/master/wta_rankings_current.cs
wtarank <- read_csv(rank_URLs)
```

```r
# 20s file is missing first row with variable names so loaded separately
atp_rankings_90s <- read_csv("https://raw.githubusercontent.com/JeffSackmann/tennis_atp/master/atp_ranki
atp_rankings_00s <- read_csv("https://raw.githubusercontent.com/JeffSackmann/tennis_atp/master/atp_ranki
atp_rankings_10s <- read_csv("https://raw.githubusercontent.com/JeffSackmann/tennis_atp/master/atp_ranki
atp_rankings_20s <- read_csv("https://raw.githubusercontent.com/JeffSackmann/tennis_atp/master/atp_ranki
    col_names = FALSE)
colnames(atp_rankings_20s) <- c("ranking_date", "rank", "player", "points")
atp_rankings_current <- read_csv("https://raw.githubusercontent.com/JeffSackmann/tennis_atp/master/atp_
atprank <- rbind(atp_rankings_90s,
                 atp_rankings_00s,
                 atp_rankings_10s,
                 atp_rankings_20s,
                 atp_rankings_current)
```

```r
library(tidyverse)
# adding column to prepare to combine datasets
wtarank <- wtarank %>%
  mutate(tour = "WTA")

atprank <- atprank %>%
  mutate(tours = NA, tour = "ATP")

# moving tour column to front for ease
wtarank <- wtarank[,c(6,5,1:4)]
atprank <- atprank[,c(5,6,1:4)]

# combining the datasets
tennis_rankings <- rbind(wtarank, atprank)

# making date objects from date
library(lubridate)
```

```r
tennis_rankings <- tennis_rankings %>%
  mutate(ranking_date = ymd(ranking_date)) %>%
  mutate(year = year(ranking_date)) %>%
  mutate(month = month(ranking_date)) %>%
  mutate(week = week(ranking_date))

# reorganizing date columns together
tennis_rankings <- tennis_rankings[,c(1:3,7:9,4:6)]
```

```r
# source: https://en.wikipedia.org/wiki/ATP_Rankings
atp_active_top10 <- tennis_results %>%
  filter(winner_name == "Roger Federer" |
           winner_name == "Rafael Nadal" |
           winner_name == "Novak Djokovic" |
           winner_name == "Andy Murray" |
           winner_name == "Daniil Medvedev" |
           winner_name == "Stan Wawrinka" |
           winner_name == "Milos Raonic" |
           winner_name == "Alexander Zverev" |
           winner_name == "Grigor Dimitrov" |
           winner_name == "Marin Cilic" |
           winner_name == "Juan Martin del Potro" |
           winner_name == "Dominic Thiem" |
           winner_name == "Stefanos Tsitsipas" |
           winner_name == "Kei Nishikori") %>%
  group_by(winner_name) %>%
  summarize(winner_id = mean(winner_id)) %>%
  pull(winner_id)

# source: https://en.wikipedia.org/wiki/WTA_Rankings
wta_active_top10 <- tennis_results %>%
  filter(winner_name == "Venus Williams" |
           winner_name == "Serena Williams" |
           winner_name == "Victoria Azarenka" |
           winner_name == "Angelique Kerber" |
           winner_name == "Karolina Pliskova" |
           winner_name == "Garbine Muguruza" |
           winner_name == "Simona Halep" |
           winner_name == "Naomi Osaka" |
           winner_name == "Ashleigh Barty" |
           winner_name == "Svetlana Kuznetsova" |
           winner_name == "Vera Zvonareva" |
           winner_name == "Petra Kvitova" |
           winner_name == "Aryna Sabalenka" |
           winner_name == "Elina Svitolina" |
           winner_name == "Sloane Stephens" |
           winner_name == "Barbora Krejcikova") %>%
  group_by(winner_name) %>%
  summarize(winner_id = mean(winner_id)) %>%
  pull(winner_id)
```

```r
tennis_rankings <- tennis_rankings %>%
  group_by(player) %>%
```

```r
  mutate(top10 = ifelse(rank <= 10,1,0)) %>%
  mutate(weeks_top10 = cumsum(top10)) %>%
  select(-top10) %>%
  mutate(image = player) %>%
  mutate(image = case_when(
    image == 200748 ~ "https://photoresources.wtatennis.com/photo-resources/2019/10/08/f1dd1872-bfaa-4b8
    image == 201493 ~ "https://photoresources.wtatennis.com/photo-resources/2019/10/08/8762852b-5a86-414
    image == 214544 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/077d0d47-22d6-4e1
    image == 202458 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/d05d8377-816c-449
    image == 206252 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/51357b9f-48f7-48a
    image == 202494 ~ "https://photoresources.wtatennis.com/photo-resources/2021/01/12/d3ab2f03-ce4c-483
    image == 202469 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/58137bc5-55f4-44a
    image == 201662 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/d2107552-9555-4c1
    image == 211768 ~ "https://photoresources.wtatennis.com/photo-resources/2021/01/19/f5e01763-eee7-449
    image == 201520 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/1dfdc52b-00e3-477
    image == 200033 ~ "https://images.prismic.io/fft-rg-site/49fc0008-a476-4f43-bb69-aab6ac17686b_202001
    image == 201594 ~ "https://photoresources.wtatennis.com/photo-resources/2019/10/08/62ecc4f9-a397-4c0
    image == 201585 ~ "https://photoresources.wtatennis.com/photo-resources/2019/10/08/988ba546-3bc0-4da
    image == 201320 ~ "https://photoresources.wtatennis.com/photo-resources/2020/09/30/ed4fc3a2-b3c7-4c5
    image == 201329 ~ "https://images.prismic.io/fft-rg-site/b014ce9b-ae08-43e3-8793-de0c4127949c_201905
    image == 201458 ~ "https://photoresources.wtatennis.com/photo-resources/2019/10/08/1ab771d9-a81c-4f8
    image == 103819 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2020/federer_head_ao20.p
    image == 104925 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2019/djokovic_head_ao19
    image == 100644 ~ "https://www.atptour.com/-/media/alias/player-headshot/Z355",
    image == 104918 ~ "https://www.atptour.com/-/media/alias/player-headshot/MC10",
    image == 106421 ~ "https://www.atptour.com/-/media/alias/player-headshot/MM58",
    image == 106233 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2020/thiem_head_ao20.png
    image == 105777 ~ "https://www.atptour.com/-/media/alias/player-headshot/D875",
    image == 105223 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2019/delpotro_head_rome
    image == 105453 ~ "https://www.atptour.com/-/media/alias/player-headshot/N552",
    image == 105227 ~ "https://www.atptour.com/-/media/alias/player-headshot/C977",
    image == 105683 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2020/raonic_head_ao20.p
    image == 104745 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2020/nadal_head_ao20.png
    image == 104527 ~ "https://www.atptour.com/-/media/tennis/players/head-shot/2020/wawrinka_head_ao20
    image == 126774 ~ "https://www.atptour.com/-/media/alias/player-headshot/TE51"
  ))
```

```r
tennis_rankings <- tennis_rankings %>%
  mutate(name = player) %>%
  mutate(name = case_when(
    name == 200748 ~ "Venus Williams",
    name == 201493 ~ "Angelique Kerber",
    name == 214544 ~ "Aryna Sabalenka",
    name == 202458 ~ "Ashleigh Barty",
    name == 206252 ~ "Barbora Krejcikova",
    name == 202494 ~ "Elina Svitolina",
    name == 202469 ~ "Garbiñe Muguruza",
    name == 201662 ~ "Karolina Pliskova",
    name == 211768 ~ "Naomi Osaka",
    name == 200033 ~ "Serena Williams",
    name == 201520 ~ "Petra Kvitova",
    name == 201594 ~ "Simona Halep",
    name == 201585 ~ "Sloane Stephens",
```

```r
    name == 201320 ~ "Svetlana Kuznetsova",
    name == 201329 ~ "Vera Zvonareva",
    name == 201458 ~ "Victoria Azarenka",
    name == 103189 ~ "Roger Federer",
    name == 104925 ~ "Novak Djokovic",
    name == 100644 ~ "Alexander Zverev",
    name == 104918 ~ "Andy Murray",
    name == 106421 ~ "Daniil Medvedev",
    name == 106233 ~ "Dominic Thiem",
    name == 105777 ~ "Grigor Dimitrov",
    name == 105223 ~ "Juan Martin del Potro",
    name == 105453 ~ "Kei Nishikori",
    name == 105227 ~ "Marin Cilic",
    name == 105683 ~ "Milos Raonic",
    name == 104745 ~ "Rafael Nadal",
    name == 104527 ~ "Stan Wawrinka",
    name == 126774 ~ "Stefanos Tsitsipas"
  ))
```

```r
library(ggimage)
library(gganimate)
library(gifski)
atp_animate <- tennis_rankings %>%
  filter(player %in% atp_active_top10, tour == "ATP") %>%
  mutate(rank = ifelse(rank > 5, NA, rank)) %>%
  ggplot(aes(x = ranking_date, y = rank)) +
  geom_line(aes(color = name)) +
# geom_segment(aes(xend = ymd("2022-01-01"), yend = rank), linetype = 2) +
# geom_text(aes(x = ymd("2022-01-01"), label = name), hjust = 0) +
# coord_cartesian(clip = 'off') +
# guides(col = FALSE) +
# xlim(ymd("2000-01-01"), ymd("2030-01-01")) +
  geom_image(aes(image = image), size = 0.1) +
  scale_y_reverse() +
  guides(col = FALSE) +
  transition_reveal(ranking_date)
final_atp_animate <- animate(atp_animate, fps = 5, renderer = gifski_renderer())
anim_save("final_atp_animate.gif", animation = final_atp_animate, path = "~/Comp Stats/GroupE-tennis/")
```

```r
wta_animate <- tennis_rankings %>%
  filter(player %in% wta_active_top10, tour == "WTA") %>%
  mutate(rank = ifelse(rank > 5, NA, rank)) %>%
  ggplot(aes(x = ranking_date, y = rank)) +
  geom_line(aes(color = name)) +
  geom_image(aes(image = image), size = 0.15) +
  scale_y_reverse() +
  guides(col = FALSE) +
  transition_reveal(ranking_date)
final_wta_animate <- animate(wta_animate, fps = 5, renderer = gifski_renderer())
anim_save("final_wta_animate.gif", animation = final_wta_animate, path = "~/Comp Stats/GroupE-tennis/")
```