

# FIDE\_Chess\_Rating

Seshadhri S

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```
fide_ratings_august <- readr::read_csv('https://raw.githubusercontent.com/rfordatascience/tidytuesday/main/data/august/fide_ratings_august.csv')
```

```
## Rows: 201015 Columns: 12
## -- Column specification -----
## Delimiter: ","
## chr (7): name, fed, sex, title, wtitle, otitle, foa
## dbl (5): id, rating, games, k, bday
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
fide_ratings_september <- readr::read_csv('https://raw.githubusercontent.com/rfordatascience/tidytuesday/main/data/september/fide_ratings_september.csv')
```

```
## Rows: 203191 Columns: 12
## -- Column specification -----
## Delimiter: ","
## chr (7): name, fed, sex, title, wtitle, otitle, foa
## dbl (5): id, rating, games, k, bday
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.4      v readr      2.1.5
## v forcats    1.0.0      v stringr   1.5.1
## v ggplot2     3.5.2      v tibble     3.2.1
## v lubridate  1.9.4      v tidyr      1.3.1
## v purrr       1.0.4
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(ggplot2)
```

This week we're exploring August and September chess player rating data from FIDE (the International Chess Federation). Monthly data files are published on the FIDE website.

A chess rating (Elo) is an estimate of a player's strength relative to other players. If a player performs better or worse than expected, their rating increases or decreases accordingly.

The September 2025 rating list was shaped primarily by results from the Sinquefeld Cup, Quantbox Chennai Grand Masters, 61st International Akiba Rubinstein Chess Festival, and the Spanish League Honor Division 2025 – a Swiss team tournament held in Linares.

Which players showed the greatest improvement from August to September?

```
august_rating <- fide_ratings_august %>% select(name, rating)
september_rating <- fide_ratings_september %>% select(name, rating)

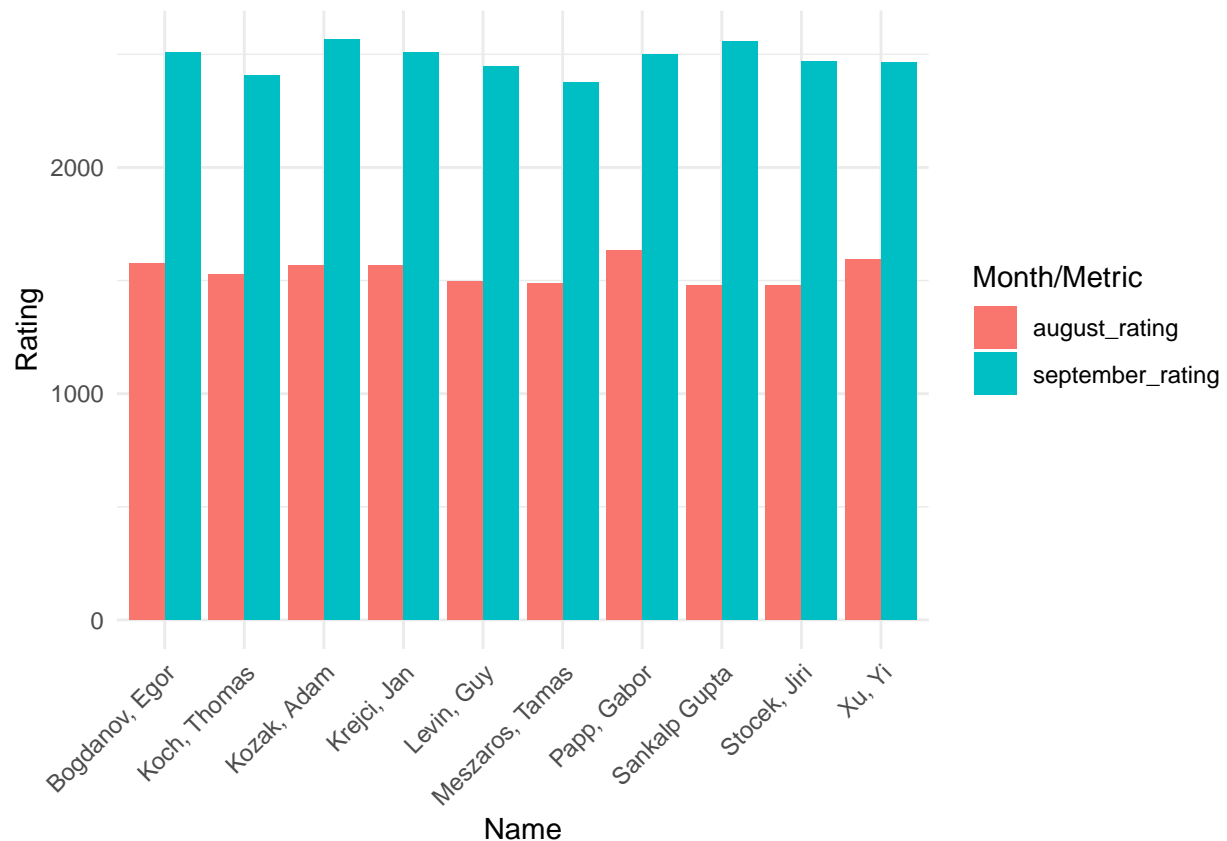
colnames(august_rating)[2] <- "august_rating"
colnames(september_rating)[2] <- "september_rating"

combined_august_september <- merge(august_rating, september_rating, by = "name")
combined_august_september <- combined_august_september %>% mutate(difference = september_rating - august_rating)
print(combined_august_september)
```

##	name	august_rating	september_rating	difference
## 1	Sankalp Gupta	1477	2559	1082
## 2	Kozak, Adam	1565	2565	1000
## 3	Stocek, Jiri	1478	2470	992
## 4	Levin, Guy	1495	2447	952
## 5	Krejci, Jan	1569	2509	940
## 6	Bogdanov, Egor	1575	2510	935
## 7	Meszaros, Tamas	1489	2374	885
## 8	Koch, Thomas	1525	2406	881
## 9	Xu, Yi	1594	2465	871
## 10	Papp, Gabor	1632	2498	866

```
combined_august_september_long <- combined_august_september %>% pivot_longer(cols = c(august_rating, september_rating))

# Grouped
ggplot(combined_august_september_long, aes(fill=month, y=rating, x=name)) +
  geom_bar(position="dodge", stat="identity") +
  labs(x = "Name", y = "Rating", fill = "Month/Metric") +
  theme_minimal() +
  theme(
    axis.text.x = element_text(angle=45, hjust= 1)
  )
```



Which federations have the most number of titled players?

```
august_september_all <- merge(fide_ratings_august, fide_ratings_september, by = "name")
all_players <- august_september_all %>% select(name, fed.x, title.x)
colnames(all_players)[1] <- "Name"
colnames(all_players)[2] <- "Federation"
colnames(all_players)[3] <- "Title"

all_players <- na.omit(all_players)
all_players <- all_players %>% group_by(Federation) %>% summarise(total_titles=n(), .groups="drop") %>%
print(head(all_players))
```

```
## # A tibble: 6 x 2
##   Federation total_titles
##   <chr>          <int>
## 1 GER             1029
## 2 ESP              701
## 3 IND              462
## 4 RUS              462
## 5 FRA              456
## 6 USA              439
```

How did the rankings of the top male or female players change?

```

male_players_august <- fide_ratings_august %>% select(name, sex, rating) %>% filter(sex == "M")
female_players_august <- fide_ratings_august %>% select(name, sex, rating) %>% filter(sex == "F")

male_players_september <- fide_ratings_september %>% select(name, sex, rating) %>% filter(sex == "M")
female_players_september <- fide_ratings_september %>% select(name, sex, rating) %>% filter(sex == "F")

male_combined <- merge(male_players_august, male_players_september, by = "name") %>%
  select(name, rating.x, rating.y)
colnames(male_combined)[2] <- "Rating_August"
colnames(male_combined)[3] <- "Rating_September"
male_combined <- male_combined %>% mutate(Difference = Rating_September - Rating_August)
top_male <- male_combined %>% arrange(desc(Rating_September)) %>% head(n=10)
print(top_male)

```

##	name	Rating_August	Rating_September	Difference
## 1	Carlsen, Magnus	2839	2839	0
## 2	Nakamura, Hikaru	2807	2807	0
## 3	Caruana, Fabiano	2784	2789	5
## 4	Praggnanandhaa R	2779	2785	6
## 5	Erigaisi Arjun	2776	2771	-5
## 6	Gukesh D	2776	2767	-9
## 7	So, Wesley	2745	2756	11
## 8	Firouzja, Alireza	2766	2754	-12
## 9	Wei, Yi	2753	2753	0
## 10	Keymer, Vincent	2730	2751	21

```

female_combined <- merge(female_players_august, female_players_september, by = "name") %>%
  select(name, rating.x, rating.y)
colnames(female_combined)[2] <- "Rating_August"
colnames(female_combined)[3] <- "Rating_September"
female_combined <- female_combined %>% mutate(Difference = Rating_September - Rating_August)
top_female <- female_combined %>% arrange(desc(Rating_September)) %>% head(n=10)
print(top_female)

```

##	name	Rating_August	Rating_September	Difference
## 1	Hou, Yifan	2609	2609	0
## 2	Ju, Wenjun	2570	2570	0
## 3	Lei, Tingjie	2565	2565	0
## 4	Zhu, Jiner	2536	2548	12
## 5	Koneru, Humpy	2535	2535	0
## 6	Muzychuk, Anna	2535	2535	0
## 7	Tan, Zhongyi	2539	2531	-8
## 8	Goryachkina, Aleksandra	2528	2528	0
## 9	Assaubayeva, Bibisara	2505	2505	0
## 10	Lagno, Kateryna	2505	2505	0

Who are the top youth players?

```

youth_players <- august_september_all %>% filter(bday.x >= 2007)
top_youth <- youth_players %>% select(name, fed.x, bday.x, rating.y) %>% arrange(desc(rating.y))
print(head(top_youth, 10))

```

##		name	fed.x	bday.x	rating.y
## 1	Erdogmus, Yagiz Kaan	TUR	2011	2646	
## 2	Gurel, Ediz	TUR	2008	2631	
## 3	Mishra, Abhimanyu	USA	2009	2611	
## 4	Maurizzi, MarcAndria	FRA	2007	2610	
## 5	Zemlyanskii, Ivan	RUS	2010	2586	
## 6	Movahed, Sina	IRI	2010	2580	
## 7	Vetokhin, Savva	FID	2009	2569	
## 8	Bharath Subramaniyam H	IND	2007	2565	
## 9	Kozak, Adam	HUN	2016	2565	
## 10	Sankalp Gupta	IND	2011	2559	