Code_Used

lok

2023-11-15

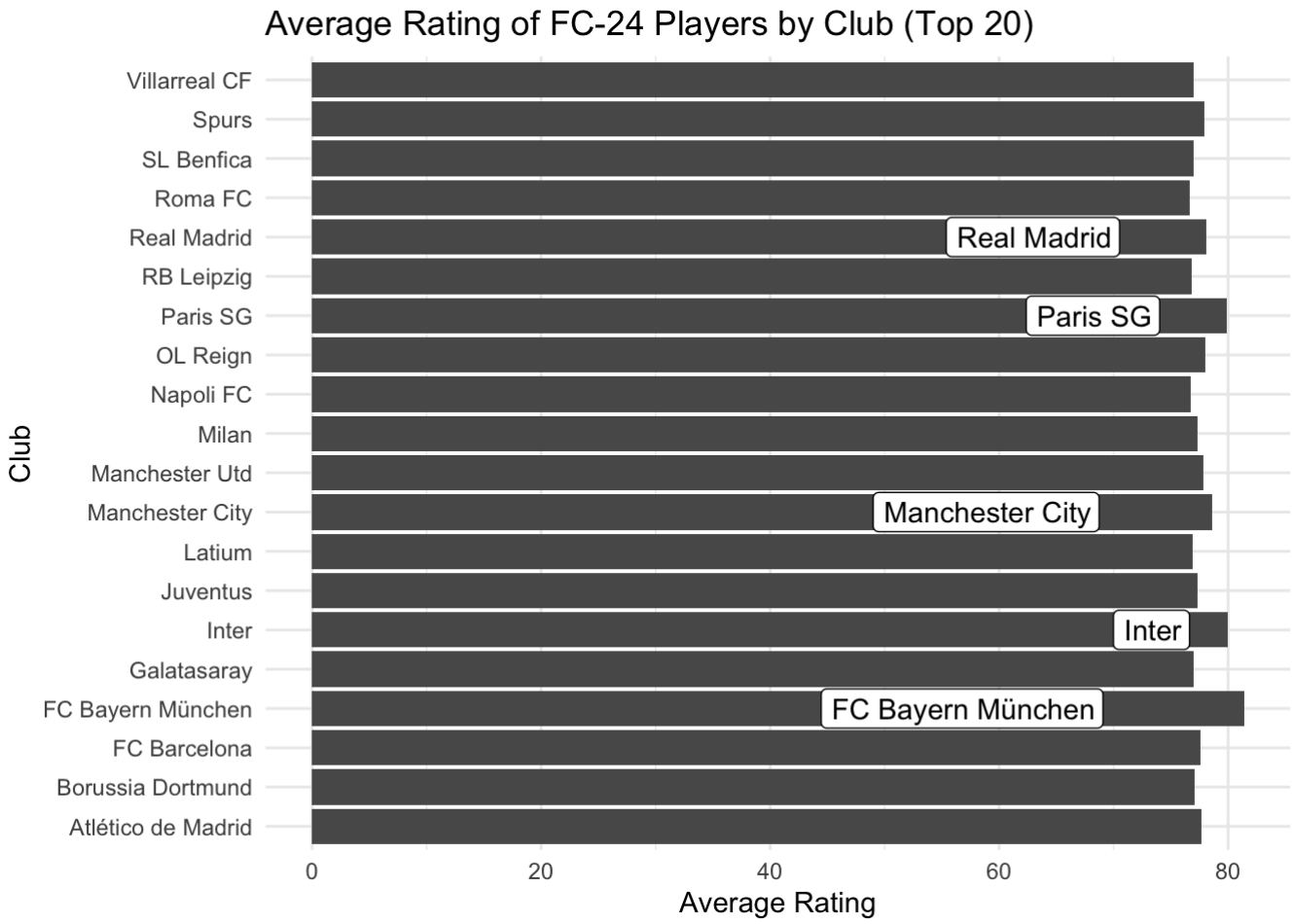
```
#1. Which club has the highest average rating of players?

library(ggplot2)
library(tidyverse)
```

```
## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──
## ✔ dplyr     1.1.3     ✔ readr     2.1.4
## ✔ forcats   1.0.0     ✔ stringr   1.5.0
## ✔ lubridate 1.9.2     ✔ tibble    3.2.1
## ✔ purrr     1.0.2     ✔ tidyr     1.3.0
## ── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflic
ts to become errors
```

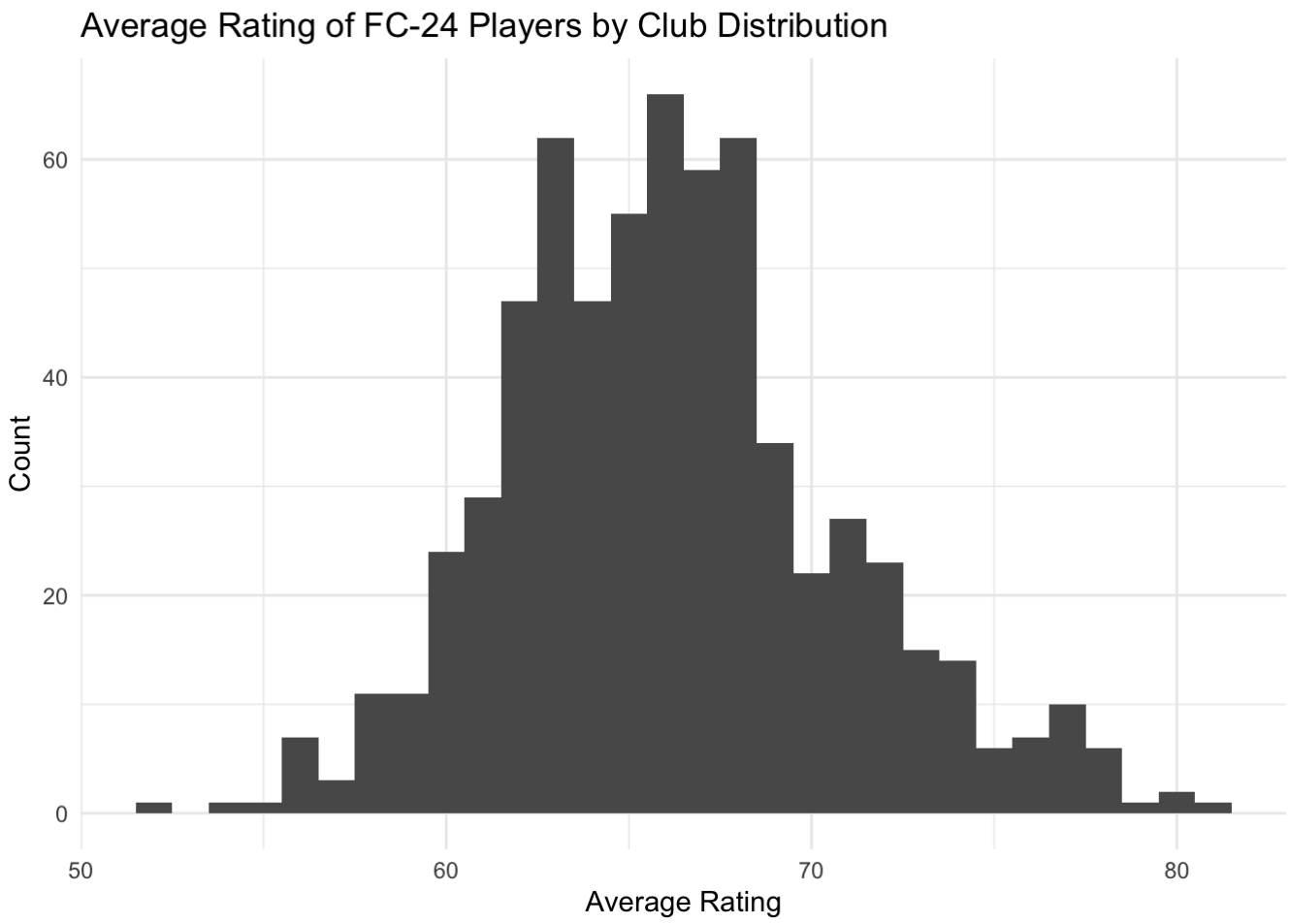
```
eafc_data <- read.csv("male_players.csv") %>% select(Name, Nation, Club, Position, Ov
erall, Pace, Shooting, Passing, Dribbling, Defending, Physicality)

club_average_rating <- eafc_data %>%
  group_by(Club) %>%
  summarise(mean_rating = mean(Overall))

club_with_highest_average_rating <- club_average_rating %>%
  arrange(desc(mean_rating))

club_with_highest_average_rating
```

```
## # A tibble: 654 × 2
##    Club                mean_rating
##    <chr>                     <dbl>
##  1 FC Bayern München          81.4
##  2 Inter                      80.0
##  3 Paris SG                   79.9
##  4 Manchester City            78.6
##  5 Real Madrid                78.1
##  6 OL Reign                   78
##  7 Spurs                      77.9
##  8 Manchester Utd             77.9
##  9 Atlético de Madrid         77.7
## 10 FC Barcelona               77.6
## # ℹ 644 more rows
```

```
top_20_clubs <- club_with_highest_average_rating %>% slice_head(n=20)

is_top_five <- club_with_highest_average_rating %>% slice_head(n=5)

# Plot the average rating for the top 50 clubs
# Add labels to the top three clubs
ggplot(top_20_clubs, aes(x = Club, y = mean_rating)) +
  geom_bar(stat = "identity")+
  labs(title = "Average Rating of FC-24 Players by Club (Top 20)", x = "Club", y = "A
verage Rating") +
  theme_minimal() +  coord_flip() +
  geom_label(aes(label = Club), data = (is_top_five), hjust = 1.5, vjust = 0.5, fill
= "white")
```



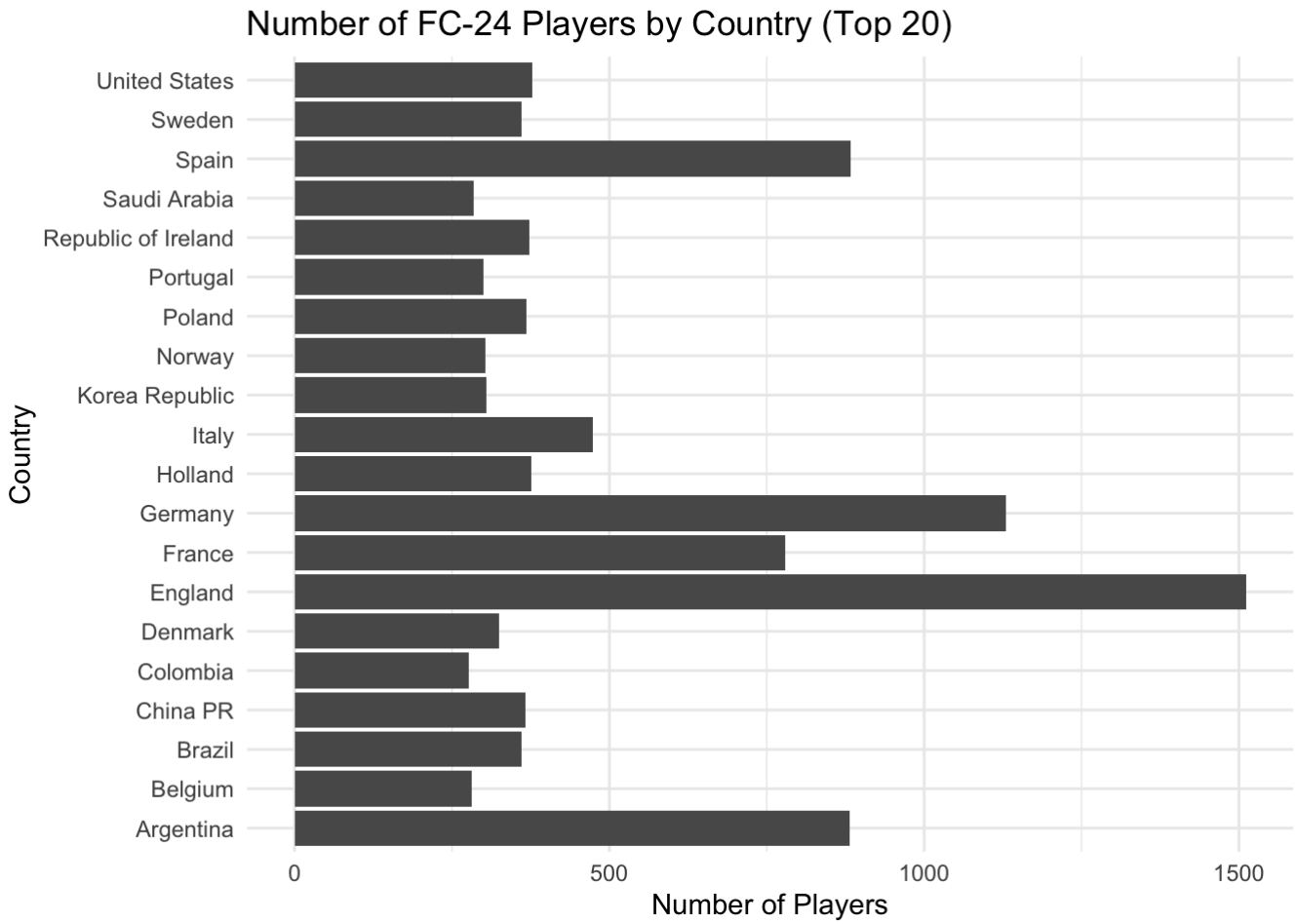

```
ggplot(club_average_rating, aes(x = mean_rating)) +
  geom_histogram(binwidth = 1) +
  labs(title = "Average Rating of FC-24 Players by Club Distribution", x = "Average R
ating", y = "Count") +
  theme_minimal()
```




```
#2. Which country has the highest count of professional players?
library(tidyverse)
library(ggplot2)

# Count the number of players from each country
country_player_count <- eafc_data %>%
  group_by(Nation) %>%
  summarise(player_count = n())

# Identify the country with the highest player count
country_with_highest_player_count <- country_player_count %>%
  arrange(desc(player_count)) %>%
  slice_head(n=20)

country_with_highest_player_count
```

```
## # A tibble: 20 × 2
##    Nation              player_count
##    <chr>                      <int>
##  1 England                     1511
##  2 Germany                     1130
##  3 Spain                        883
##  4 Argentina                    881
##  5 France                       780
##  6 Italy                        474
##  7 United States                378
##  8 Holland                      376
##  9 Republic of Ireland          373
## 10 Poland                       368
## 11 China PR                     367
## 12 Brazil                       360
## 13 Sweden                       360
## 14 Denmark                      325
## 15 Korea Republic               305
## 16 Norway                       303
## 17 Portugal                     300
## 18 Saudi Arabia                 284
## 19 Belgium                      282
## 20 Colombia                     276
```

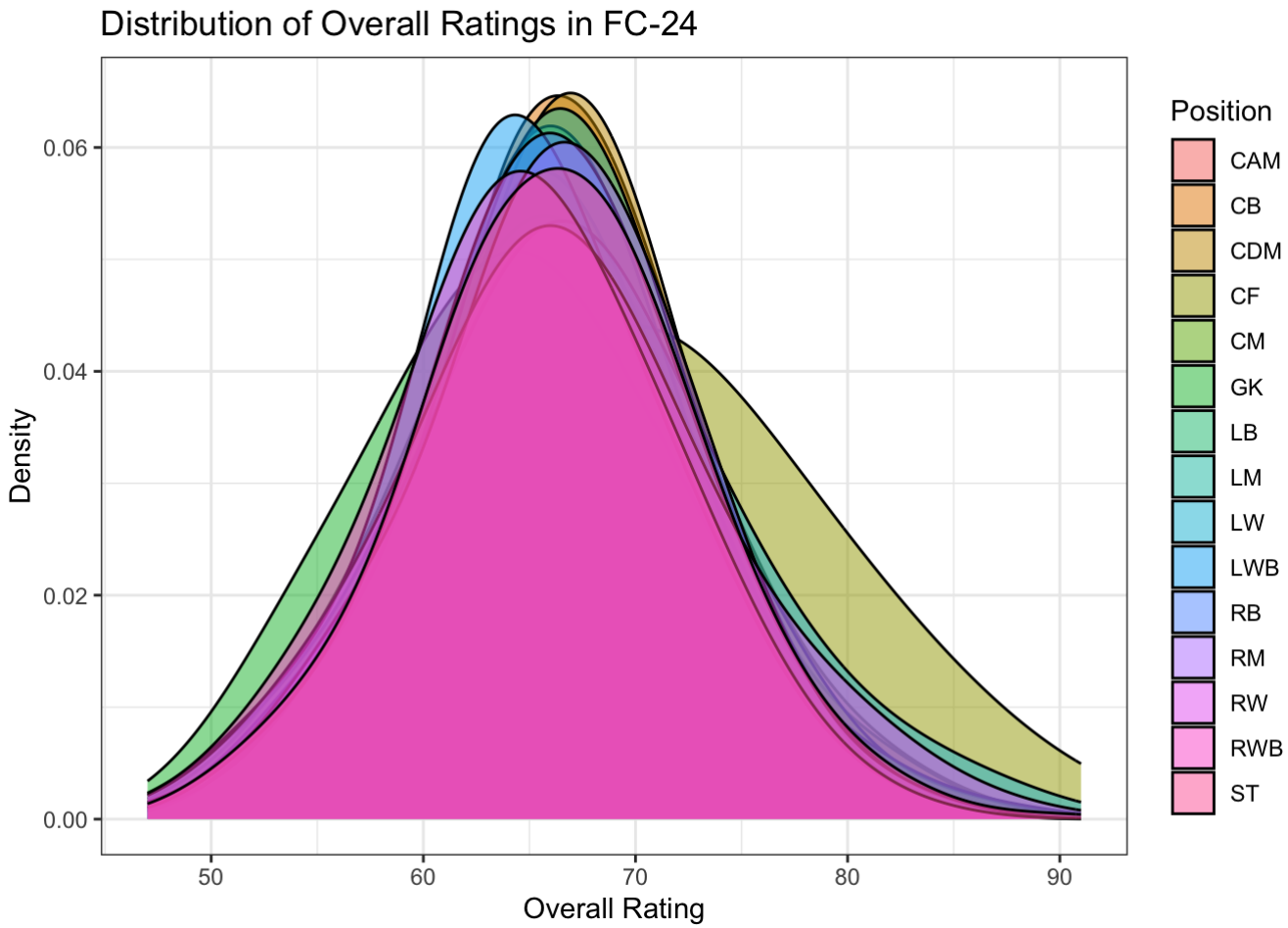
```
# Plot the player count for each country
ggplot(country_with_highest_player_count, aes(x = Nation, y = player_count)) +
  geom_bar(stat = "identity") +
  labs(title = "Number of FC-24 Players by Country (Top 20)", x = "Country", y = "Num
ber of Players") +
  theme_minimal() + coord_flip()
```




```
#3. What percentage of players have a overall rating higher than 80, what does that i
mply?
number_of_players_with_rating_above_80 <- length(which(eafc_data$Overall > 80))
total_number_of_players <- nrow(eafc_data)
percentage_of_players_with_rating_above_80 <- number_of_players_with_rating_above_80
/ total_number_of_players * 100

# Print the percentage
print(percentage_of_players_with_rating_above_80)
```

```
## [1] 2.240454
```

```
ggplot(eafc_data, aes(x = Overall, fill = Position)) +
  geom_density(adjust = 2, alpha = 0.5) +
  labs(title = "Distribution of Overall Ratings in FC-24", x = "Overall Rating", y =
"Density") +
  theme_bw()
```


Distribution of Overall Ratings in FC-24
Density
0.06
0.04
0.02
0.00
50
60
70
80
90
Overall Rating
Position
CAM
CB
CDM
CF
CM
GK
LB
LM
LW
LWB
RB
RM
RW
RWB
ST

```r
# Radar Chart Shiny APP
library(shiny)
library(fmsb)
library(tidyverse)

eafc_data <- read.csv("male_players.csv") %>% select(Name, Nation, Club, Position, Ov
erall, Pace, Shooting, Passing, Dribbling, Defending, Physicality)

# Define UI
ui <- fluidPage(
  titlePanel("Radar Chart of FC24 Players"),
  sidebarLayout(
    sidebarPanel(
      numericInput("player_number", "Player Number:", value = 12, min = 1, max = 1584
9),
      downloadButton("download_chart", "Download chart"),
    ),
    mainPanel(
      plotOutput("radarChart"),
    )
  )
)

# Define server
server <- function(input, output) {

  scores <- data.frame(
    row.names = c(eafc_data$X),
    Pace = c(eafc_data$Pace),
    Shooting = c(eafc_data$Shooting),
    Passing = c(eafc_data$Passing),
    Dribbling = c(eafc_data$Dribbling),
    Defending = c(eafc_data$Defending),
    Physicality = c(eafc_data$Physicality)
  )

  max_min <- data.frame(
    Pace = c(100, 0), Shooting = c(100, 0), Passing = c(100, 0),
    Dribbling = c(100, 0), Defending = c(100, 0), Physicality = c(100, 0)
  )

  rownames(max_min) <- c("Max", "Min")

  df <- rbind(max_min, scores)

  output$radarChart <- renderPlot({
    player_num <- input$player_number

    player_radarchart <- df[c("Max", "Min", as.character(player_num)), ]

    radarchart(
      player_radarchart,
      pcol = "purple", pfcol = scales::alpha("blue", 0.5), plwd = 2, plty = 1,
      cglcol = "grey", cglty = 2, cglwd = 2,
      title = "Player's Rating"
```

```
    )
  })
}

# Run the app
shinyApp(ui = ui, server = server)
```

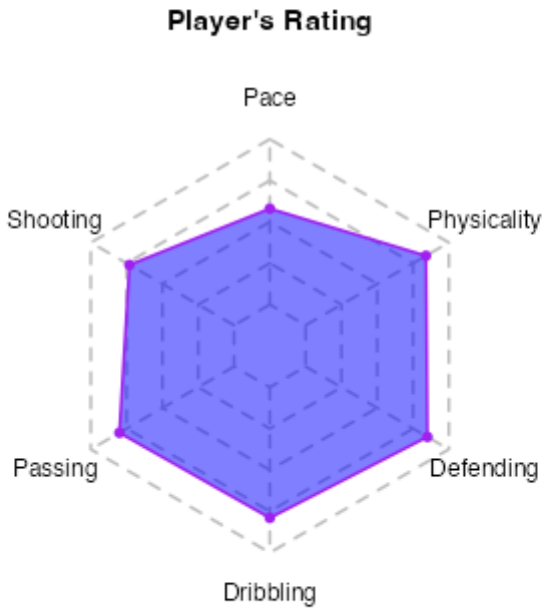
```
##
## Listening on http://127.0.0.1:7303
```

Radar Chart of FC24 Players

Player Number:

12

Download chart



```
# Search engine Shiny APP
library(shiny)
library(dplyr)

eafc_data <- read.csv("male_players.csv") %>% select(Name, Nation, Club, Position, Ov
erall, Pace, Shooting, Passing, Dribbling, Defending, Physicality)

ui <- fluidPage(
  sidebarLayout(
    sidebarPanel(
      textInput("search_query", "Search:"),
      downloadButton("download_chart", "Download chart")
    ),
    mainPanel(
      DT::dataTableOutput("search_result_table")
    )
  )
)

server <- function(input, output) {
  searchData <- reactive({
    result <- eafc_data[grep(input$search_query, eafc_data$"Name", ignore.case = TRU
E), ]
    return(result)
  })

  output$search_result_table <- DT::renderDataTable({
    searchData()
  })
}

# Run the application
shinyApp(ui = ui, server = server)
```

```
##
## Listening on http://127.0.0.1:4042
```

Search:

Download chart

Show 10 entries

Search:

	Name	Nation	Club	Position	Overall	Pace	Shooting	Pas
1	Kylian Mbappé	France	Paris SG	ST	91	97	90	
2	Erling Haaland	Norway	Manchester City	ST	91	89	93	
3	Kevin De Bruyne	Belgium	Manchester City	CM	91	72	88	
4	Lionel Messi	Argentina	Inter Miami CF	CF	90	80	87	
5	Karim Benzema	France	Al Ittihad	CF	90	79	88	
6	Thibaut Courtois	Belgium	Real Madrid	GK	90	85	89	
7	Harry Kane	England	FC Bayern München	ST	90	69	93	
8	Robert Lewandowski	Poland	FC Barcelona	ST	90	75	91	
9	Mohamed Salah	Egypt	Liverpool	RW	89	89	87	
10	Rúben Dias	Portugal	Manchester City	CB	89	62	39	

Showing 1 to 10 of 15,845 entries