EDA-LA

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DATA SET:- The datasets provided include the players data for the Career Mode from FIFA 15 to FIFA 20 ("players_20.csv"). The data allows multiple comparison of the same players across the last 6 version of the videogame

https://www.kaggle.com/stefanoleone992/fifa-20-complete-player-dataset

Github link :- https://github.com/1nt18is056/eda_la

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```
---
title: "r markdown test"
author: "Divyansh & mansij"
date: "08/07/2021"
output:
  html_document: default
  pdf_document: default
  word_document: default
---

```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
```
1.Read the csv data file.
```{r}
players_data=read.csv(file=file.choose(),header = TRUE)
```
2.Display head of data
```{r}
head(players_data)
```
```

Description: df [6 x 104]

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
1	158023	https://sofifa.com/player/158023/lionel-messi/15/157759	L. Messi	Lionel AndrÃ©s Messi Cuccittini	27	1987-06-24	169	67	Argentina
2	20801	https://sofifa.com/player/20801/c-ronaldo-dos-santos-aveiro/15/157759	Cristiano Ronaldo	Cristiano Ronaldo dos Santos Aveiro	29	1985-02-05	185	80	Portugal
3	9014	https://sofifa.com/player/9014/arjen-robben/15/157759	A. Robben	Arjen Robben	30	1984-01-23	180	80	Netherlands
4	41236	https://sofifa.com/player/41236/zlatan-ibrahimovic/15/157759	Z. IbrahimoviÄ‡	Zlatan IbrahimoviÄ‡	32	1981-10-03	195	95	Sweden
5	167495	https://sofifa.com/player/167495/manuel-neuer/15/157759	M. Neuer	Manuel Neuer	28	1986-03-27	193	92	Germany
6	176580	https://sofifa.com/player/176580/luis-suarez/15/157759	L. SuÃ¡rez	Luis Alberto SuÃ¡rez DÃaz	27	1987-01-24	181	81	Uruguay

6 rows | 1-10 of 104 columns

```
3.Display first n rows specified.
```{r}
head(players_data,n=10)
```
```

Description: df [10 x 104]

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
1	158023	https://sofifa.com/player/158023/lionel-messi/15/157759	L. Messi	Lionel AndrÃ©s Messi Cuccittini	27	1987-06-24	169	67	Argentina
2	20801	https://sofifa.com/player/20801/c-ronaldo-dos-santos-aveiro/15/157759	Cristiano Ronaldo	Cristiano Ronaldo dos Santos Aveiro	29	1985-02-05	185	80	Portugal
3	9014	https://sofifa.com/player/9014/arjen-robben/15/157759	A. Robben	Arjen Robben	30	1984-01-23	180	80	Netherlands
4	41236	https://sofifa.com/player/41236/zlatan-ibrahimovic/15/157759	Z. IbrahimoviÄ‡	Zlatan IbrahimoviÄ‡	32	1981-10-03	195	95	Sweden
5	167495	https://sofifa.com/player/167495/manuel-neuer/15/157759	M. Neuer	Manuel Neuer	28	1986-03-27	193	92	Germany
6	176580	https://sofifa.com/player/176580/luis-suarez/15/157759	L. SuÃ¡rez	Luis Alberto SuÃ¡rez DÃaz	27	1987-01-24	181	81	Uruguay
7	183277	https://sofifa.com/player/183277/eden-hazard/15/157759	E. Hazard	Eden Hazard	23	1991-01-07	173	74	Belgium

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1-10 of 10 rows | 1-10 of 104 columns

4.Display tail of data.

```{r}
tail(players_data)
```

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
15460	214725	https://sofifa.com/player/214725/sam-ramsbottom/15/157759	S. Ramsbottom	Sam Ramsbottom	18	1996-04-03	196	80	England
15461	220806	https://sofifa.com/player/220806/ellis-redman/15/157759	E. Redman	Ellis Redman	17	1996-09-26	187	81	Wales
15462	225509	https://sofifa.com/player/225509/aaron-collins/15/157759	A. Collins	Aaron Collins	17	1997-06-01	178	57	Wales
15463	217591	https://sofifa.com/player/217591/piotr-zemlo/15/157759	P. Å»emÅ‚o	Piotr Å»emÅ‚o	18	1995-07-10	190	76	Poland
15464	222947	https://sofifa.com/player/222947/tom-davies/15/157759	T. Davies	Tom Davies	22	1992-04-18	180	70	England
15465	201197	https://sofifa.com/player/201197/paul-tisdale/15/157759	P. Tisdale	Paul Tisdale	41	1973-01-14	175	72	Malta

6 rows | 1-10 of 104 columns

5.Display n rows specified from bottom

```{r}
tail(players_data,n=10)
```

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
15456	11728	https://sofifa.com/player/11728/barry-richardson/15/157759	B. Richardson	Barry Richardson	44	1969-08-05	185	77	England
15457	211228	https://sofifa.com/player/211228/matthew-palmer/15/157759	M. Palmer	Matthew Palmer	18	1995-08-01	179	79	England
15458	220939	https://sofifa.com/player/220939/luke-pilling/15/157759	L. Pilling	Luke Pilling	16	1997-07-25	180	69	Wales
15459	222997	https://sofifa.com/player/222997/marcus-maier/15/157759	M. Maier	Marcus Maier	18	1995-12-18	174	70	Austria
15460	214725	https://sofifa.com/player/214725/sam-ramsbottom/15/157759	S. Ramsbottom	Sam Ramsbottom	18	1996-04-03	196	80	England
15461	220806	https://sofifa.com/player/220806/ellis-redman/15/157759	E. Redman	Ellis Redman	17	1996-09-26	187	81	Wales
15462	225509	https://sofifa.com/player/225509/aaron-collins/15/157759	A. Collins	Aaron Collins	17	1997-06-01	178	57	Wales
15463	217591	https://sofifa.com/player/217591/piotr-zemlo/15/157759	P. Å»emÅ‚o	Piotr Å»emÅ‚o	18	1995-07-10	190	76	Poland
15464	222947	https://sofifa.com/player/222947/tom-davies/15/157759	T. Davies	Tom Davies	22	1992-04-18	180	70	England
15465	201197	https://sofifa.com/player/201197/paul-tisdale/15/157759	P. Tisdale	Paul Tisdale	41	1973-01-14	175	72	Malta

1-10 of 10 rows | 1-10 of 104 columns

6.Determining Type of data class(players_data)

```{r}
tail(players_data,n=10)
```

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
15456	11728	https://sofifa.com/player/11728/barry-richardson/15/157759	B. Richardson	Barry Richardson	44	1969-08-05	185	77	England
15457	211228	https://sofifa.com/player/211228/matthew-palmer/15/157759	M. Palmer	Matthew Palmer	18	1995-08-01	179	79	England
15458	220939	https://sofifa.com/player/220939/luke-pilling/15/157759	L. Pilling	Luke Pilling	16	1997-07-25	180	69	Wales
15459	222997	https://sofifa.com/player/222997/marcus-maier/15/157759	M. Maier	Marcus Maier	18	1995-12-18	174	70	Austria

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15457	211228	https://sofifa.com/player/211228/matthew-palmer/15/157759	M. Palmer	Matthew Palmer	18	1995-08-01	179	79	England
15458	220939	https://sofifa.com/player/220939/luke-pilling/15/157759	L. Pilling	Luke Pilling	16	1997-07-25	180	69	Wales
15459	222997	https://sofifa.com/player/222997/marcus-maier/15/157759	M. Maier	Marcus Maier	18	1995-12-18	174	70	Austria
15460	214725	https://sofifa.com/player/214725/sam-ramsbottom/15/157759	S. Ramsbottom	Sam Ramsbottom	18	1996-04-03	196	80	England
15461	220806	https://sofifa.com/player/220806/ellis-redman/15/157759	E. Redman	Ellis Redman	17	1996-09-26	187	81	Wales
15462	225509	https://sofifa.com/player/225509/aaron-collins/15/157759	A. Collins	Aaron Collins	17	1997-06-01	178	57	Wales
15463	217591	https://sofifa.com/player/217591/piotr-zemlo/15/157759	P. Å»emÅ‚o	Piotr Å»emÅ‚o	18	1995-07-10	190	76	Poland
15464	222947	https://sofifa.com/player/222947/tom-davies/15/157759	T. Davies	Tom Davies	22	1992-04-18	180	70	England
15465	201197	https://sofifa.com/player/201197/paul-tisdale/15/157759	P. Tisdale	Paul Tisdale	41	1973-01-14	175	72	Malta

1-10 of 10 rows | 1-10 of 104 columns

```
7.Table command table(players_data$potential)
```{r}
table(players_data$height_cm)
```
```

```
155 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181
  1   1   1   3   8   2   9  23  27  76  37  74 172 121 415 238 364 525 393 829 557 570 1068 543 1369 589
182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 203
761 1055 688 1008 665 555 748 311 399 375 206 267 137  84  91  37  32  16   5   7   3
```

```
8.Determine the structure of data
```{r}
str(players_data)
```
```

```
'data.frame':   15465 obs. of  104 variables:
 $ sofifa_id                : int  158023 20801 9014 41236 167495 176580 183277 7826 121944 156616 ...
 $ player_url               : chr  "https://sofifa.com/player/158023/lionel-messi/15/157759" "https://sofifa.com/player/20801/c-ronaldo-dos-santos-aveiro/15/157759" "https://sofifa.com/player/9014/arjen-robben/15/157759"
"https://sofifa.com/player/41236/zlatan-ibrahimovic/15/157759" ...
 $ short_name               : chr  "L. Messi" "Cristiano Ronaldo" "A. Robben" "Z. IbrahimoviÄ‡" ...
 $ long_name                : chr  "Lionel AndrÃ©s Messi Cuccittini" "Cristiano Ronaldo dos Santos Aveiro" "Arjen Robben" "Zlatan IbrahimoviÄ‡" ...
 $ age                      : int  27 29 30 32 28 27 23 30 29 31 ...
 $ dob                      : chr  "1987-06-24" "1985-02-05" "1984-01-23" "1981-10-03" ...
 $ height_cm                : int  169 185 180 195 193 181 173 187 183 170 ...
 $ weight_kg                : int  67 80 80 95 92 81 74 71 79 72 ...
 $ nationality              : chr  "Argentina" "Portugal" "Netherlands" "Sweden" ...
 $ club                     : chr  "FC Barcelona" "Real Madrid" "FC Bayern MÃ¼nchen" "Paris Saint-Germain" ...
 $ overall                  : int  93 92 90 90 90 89 88 88 88 88 ...
 $ potential                : int  95 92 90 90 90 91 90 88 88 88 ...
 $ value_eur                : int  0 0 0 0 0 0 0 0 0 0 ...
 $ wage_eur                 : int  0 0 0 0 0 0 0 0 0 0 ...
 $ player_positions         : chr  "CF" "LW, LM" "RM, LM, RW" "ST" ...
 $ preferred_foot           : chr  "Left" "Right" "Left" "Right" ...
 $ international_reputation : int  5 5 5 5 5 5 4 5 4 4 ...
 $ weak_foot                : int  3 4 2 4 4 4 4 3 3 4 ...
 $ skill_moves              : int  4 5 4 4 1 4 4 4 3 5 ...
 $ work_rate                : chr  "Medium/Low" "High/Low" "High/Low" "Medium/Low" ...
 $ body_type                : chr  "Normal" "Normal" "Normal" "Normal" ...
 $ real_face                : chr  "Yes" "Yes" "Yes" "Yes" ...
```

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```
 $ work_rate                : chr  "Medium/Low" "High/Low" "High/Low" "Medium/Low" ...
 $ body_type                : chr  "Normal" "Normal" "Normal" "Normal" ...
 $ real_face                : chr  "Yes" "Yes" "Yes" "Yes" ...
 $ release_clause_eur       : logi  NA NA NA NA NA NA ...
 $ player_tags              : chr  "#Speedster, #Dribbler, #FK Specialist, #Acrobat, #Clinical Finisher, #Complete Forward" "#Speedster, #Dribbler, #Distance Shooter, #Acrobat, #Clinical Finisher, #Complete Forward"
"#Speedster, #Dribbler, #Distance Shooter, #Acrobat" "#Poacher, #Aerial Threat, #Distance Shooter, #Acrobat, #Strength, #Clinical Finisher, #Complete Forward" ...
 $ team_position            : chr  "CF" "LW" "SUB" "ST" ...
 $ team_jersey_number       : int  10 7 10 10 1 9 10 20 31 7 ...
 $ loaned_from              : chr  "" "" "" "" ...
 $ joined                   : chr  "2004-07-01" "2009-07-01" "2009-08-28" "2012-07-01" ...
 $ contract_valid_until     : int  2018 2018 2017 2016 2019 2019 2017 2016 2016 2017 ...
 $ nation_position          : chr  "CF" "LW" "RS" "ST" ...
 $ nation_jersey_number     : int  10 7 11 10 1 NA 10 9 7 NA ...
 $ pace                     : int  93 93 93 76 NA 83 90 74 61 89 ...
 $ shooting                 : int  89 93 86 91 NA 87 82 90 81 78 ...
 $ passing                  : int  86 81 83 81 NA 79 84 82 85 85 ...
 $ dribbling                : int  96 91 92 86 NA 88 91 83 82 92 ...
 $ defending                : int  27 32 32 34 NA 42 32 33 78 29 ...
 $ physic                   : int  63 79 64 86 NA 79 64 68 80 62 ...
 $ gk_diving                : int  NA NA NA NA 87 NA NA NA NA NA ...
 $ gk_handling              : int  NA NA NA NA 85 NA NA NA NA NA ...
 $ gk_kicking               : int  NA NA NA NA 92 NA NA NA NA NA ...
 $ gk_reflexes              : int  NA NA NA NA 86 NA NA NA NA NA ...
 $ gk_speed                 : int  NA NA NA NA 60 NA NA NA NA NA ...
 $ gk_positioning           : int  NA NA NA NA 90 NA NA NA NA NA ...
 $ player_traits            : chr  "Finesse Shot, Speed Dribbler (CPU AI Only), One Club Player, Team Player" "Power Free-Kick, Flair, Long Shot Taker (CPU AI Only), Speed Dribbler (CPU AI Only)" "Diver, Injury Prone,
Avoids Using Weaker Foot, Selfish, Long Shot Taker (CPU AI Only), Speed Dribbler (CPU AI O"| __truncated__ "Power Free-Kick, Leadership, Flair, Long Shot Taker (CPU AI Only), Technical Dribbler (CPU AI Only)" ...
 $ attacking_crossing       : chr  "84" "83" "80" "76" ...
 $ attacking_finishing      : chr  "94-3" "95+3" "85+2" "91" ...
 $ attacking_heading_accuracy: chr  "71" "86" "50" "76" ...
 $ attacking_short_passing  : chr  "89" "82" "86+2" "84-2" ...
 $ attacking_volleys        : chr  "85-5" "87+2" "86+2" "92+3" ...
 $ skill_dribbling          : chr  "96-1" "93+3" "93" "88" ...
 $ skill_curve              : chr  "89+2" "88" "85" "80" ...
 $ skill_fk_accuracy        : chr  "90+4" "79" "83-1" "80" ...
 $ skill_long_passing       : chr  "76" "72" "76+3" "76+4" ...
 $ skill_ball_control       : chr  "96" "92-3" "90+1" "90" ...
 $ movement_acceleration    : chr  "96" "91" "93" "74+2" ...
 $ movement_sprint_speed    : chr  "90+2" "94" "93+2" "77-1" ...
 $ movement_agility         : chr  "94" "93" "93+1" "86" ...
 $ movement_reactions       : chr  "94-2" "90" "89+2" "85" ...
 $ movement_balance         : chr  "95" "63-12" "91" "41" ...
 $ power_shot_power         : chr  "80-1" "94" "86" "93" ...
 $ power_jumping            : chr  "73" "94" "61" "72" ...
 $ power_stamina            : chr  "77-1" "89" "78+11" "78" ...
 $ power_strength           : chr  "60" "79" "65" "93" ...
 $ power_long_shots         : chr  "88" "93" "90+1" "88" ...
 $ mentality_aggression     : chr  "48" "63" "47+9" "84" ...
 $ mentality_interceptions  : chr  "22" "24" "39+1" "20" ...
 $ mentality_positioning    : chr  "92-1" "91+2" "89+2" "86" ...
 $ mentality_vision         : chr  "90" "81" "84+2" "83-1" ...
 $ mentality_penalties      : chr  "76" "85" "80+1" "91" ...
 $ mentality_composure      : logi  NA NA NA NA NA NA ...
 $ defending_marking        : chr  "25" "22" "29" "25" ...
 $ defending_standing_tackle : chr  "21" "31" "26+2" "41-8" ...
```

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```
9.Summarising the data
```{r}
summary(players_data)
```

```
   sofifa_id       player_url         short_name         long_name              age            dob              height_cm
 Min.   :     2   Length:15465       Length:15465       Length:15465       Min.   :16.00   Length:15465       Min.   :155.0
 1st Qu.:178043   Class :character   Class :character   Class :character   1st Qu.:21.00   Class :character   1st Qu.:176.0
 Median :200844   Mode  :character   Mode  :character   Mode  :character   Median :24.00   Mode  :character   Median :181.0
 Mean   :189299                                                            Mean   :24.76                      Mean   :181.1
 3rd Qu.:214326                                                            3rd Qu.:28.00                      3rd Qu.:186.0
 Max.   :225562                                                            Max.   :44.00                      Max.   :203.0

   weight_kg      nationality            club              overall        potential       value_eur    wage_eur player_positions
 Min.   : 50.00   Length:15465       Length:15465       Min.   :40.00   Min.   :40.00   Min.   :0   Min.   :0   Length:15465
 1st Qu.: 70.00   Class :character   Class :character   1st Qu.:59.00   1st Qu.:64.00   1st Qu.:0   1st Qu.:0   Class :character
 Median : 75.00   Mode  :character   Mode  :character   Median :64.00   Median :68.00   Median :0   Median :0   Mode  :character
 Mean   : 75.48                                         Mean   :63.95   Mean   :68.48   Mean   :0   Mean   :0
 3rd Qu.: 80.00                                         3rd Qu.:69.00   3rd Qu.:73.00   3rd Qu.:0   3rd Qu.:0
 Max.   :110.00                                         Max.   :93.00   Max.   :95.00   Max.   :0   Max.   :0

 preferred_foot     international_reputation   weak_foot      skill_moves     work_rate          body_type
 Length:15465       Min.   :1.000            Min.   :1.000   Min.   :1.000   Length:15465       Length:15465
 Class :character   1st Qu.:1.000            1st Qu.:3.000   1st Qu.:2.000   Class :character   Class :character
 Mode  :character   Median :1.000            Median :3.000   Median :2.000   Mode  :character   Mode  :character
                    Mean   :1.126            Mean   :2.932   Mean   :2.267
                    3rd Qu.:1.000            3rd Qu.:3.000   3rd Qu.:3.000
                    Max.   :5.000            Max.   :5.000   Max.   :5.000

  real_face         release_clause_eur player_tags        team_position      team_jersey_number loaned_from
 Length:15465       Mode:logical       Length:15465       Length:15465       Min.   : 1.0       Length:15465
 Class :character   NA's:15465         Class :character   Class :character   1st Qu.: 8.0       Class :character
 Mode  :character                      Mode  :character   Mode  :character   Median :17.0       Mode  :character
                                                                             Mean   :19.8
                                                                             3rd Qu.:26.0
                                                                             Max.   :99.0
                                                                             NA's   :232
    joined          contract_valid_until nation_position    nation_jersey_number      pace          shooting        passing
 Length:15465       Min.   :2014         Length:15465       Min.   : 1.00        Min.   :22.00   Min.   :22.00   Min.   :24.00
 Class :character   1st Qu.:2015         Class :character   1st Qu.: 6.00        1st Qu.:62.00   1st Qu.:41.00   1st Qu.:49.00
 Mode  :character   Median :2016         Mode  :character   Median :12.00        Median :69.00   Median :53.00   Median :57.00
                    Mean   :2017                            Mean   :12.03        Mean   :68.09   Mean   :51.67   Mean   :55.74
                    3rd Qu.:2019                            3rd Qu.:18.00        3rd Qu.:76.00   3rd Qu.:62.00   3rd Qu.:63.00
                    Max.   :2021                            Max.   :28.00        Max.   :97.00   Max.   :93.00   Max.   :91.00
                    NA's   :239                             NA's   :14409        NA's   :1703    NA's   :1703    NA's   :1703
   dribbling       defending        physic       gk_diving      gk_handling      gk_kicking     gk_reflexes       gk_speed
 Min.   :25.00   Min.   :21     Min.   :28.0   Min.   :35.00   Min.   :36.00   Min.   :21.00   Min.   :31.00   Min.   :20.0
 1st Qu.:54.00   1st Qu.:33     1st Qu.:58.0   1st Qu.:59.00   1st Qu.:55.00   1st Qu.:53.00   1st Qu.:60.00   1st Qu.:39.0
 Median :62.00   Median :53     Median :66.0   Median :64.00   Median :61.00   Median :59.00   Median :65.00   Median :44.0
 Mean   :60.62   Mean   :50     Mean   :64.6   Mean   :64.71   Mean   :60.82   Mean   :59.45   Mean   :65.95   Mean   :43.9
 3rd Qu.:68.00   3rd Qu.:63     3rd Qu.:72.0   3rd Qu.:70.00   3rd Qu.:67.00   3rd Qu.:65.00   3rd Qu.:72.00   3rd Qu.:49.0
 Max.   :96.00   Max.   :90     Max.   :91.0   Max.   :88.00   Max.   :87.00   Max.   :92.00   Max.   :90.00   Max.   :66.0
 NA's   :1703    NA's   :1703   NA's   :1703   NA's   :13762   NA's   :13762   NA's   :13762   NA's   :13762   NA's   :13762
 gk_positioning  player_traits      attacking_crossing attacking_finishing attacking_heading_accuracy attacking_short_passing
```

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```
1st Qu.:54.00   1st Qu.:33     1st Qu.:58.0   1st Qu.:59.00   1st Qu.:55.00   1st Qu.:53.00   1st Qu.:60.00   1st Qu.:39.0
Median :62.00   Median :53     Median :66.0   Median :64.00   Median :61.00   Median :59.00   Median :65.00   Median :44.0
Mean   :60.62   Mean   :50     Mean   :64.6   Mean   :64.71   Mean   :60.82   Mean   :59.45   Mean   :65.95   Mean   :43.9
3rd Qu.:68.00   3rd Qu.:63     3rd Qu.:72.0   3rd Qu.:70.00   3rd Qu.:67.00   3rd Qu.:65.00   3rd Qu.:72.00   3rd Qu.:49.0
Max.   :96.00   Max.   :90     Max.   :91.0   Max.   :88.00   Max.   :87.00   Max.   :92.00   Max.   :90.00   Max.   :66.0
NA's   :1703    NA's   :1703   NA's   :1703   NA's   :13762   NA's   :13762   NA's   :13762   NA's   :13762   NA's   :13762
gk_positioning  player_traits      attacking_crossing attacking_finishing attacking_heading_accuracy attacking_short_passing
Min.   :38.00   Length:15465       Length:15465       Length:15465        Length:15465               Length:15465
1st Qu.:54.00   Class :character   Class :character   Class :character    Class :character           Class :character
Median :61.00   Mode  :character   Mode  :character   Mode  :character    Mode  :character           Mode  :character
Mean   :61.23
3rd Qu.:68.00
Max.   :90.00
NA's   :13762
attacking_volleys  skill_dribbling    skill_curve        skill_fk_accuracy  skill_long_passing skill_ball_control
Length:15465       Length:15465       Length:15465       Length:15465       Length:15465       Length:15465
Class :character   Class :character   Class :character   Class :character   Class :character   Class :character
Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character



movement_acceleration movement_sprint_speed movement_agility   movement_reactions movement_balance   power_shot_power
Length:15465          Length:15465          Length:15465       Length:15465       Length:15465       Length:15465
Class :character      Class :character      Class :character   Class :character   Class :character   Class :character
Mode  :character      Mode  :character      Mode  :character   Mode  :character   Mode  :character   Mode  :character



power_jumping      power_stamina      power_strength     power_long_shots   mentality_aggression mentality_interceptions
Length:15465       Length:15465       Length:15465       Length:15465       Length:15465         Length:15465
Class :character   Class :character   Class :character   Class :character   Class :character     Class :character
Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character     Mode  :character



mentality_positioning mentality_vision   mentality_penalties mentality_composure defending_marking  defending_standing_tackle
Length:15465          Length:15465       Length:15465        Mode:logical       Length:15465       Length:15465
Class :character      Class :character   Class :character    NA's:15465         Class :character   Class :character
Mode  :character      Mode  :character   Mode  :character                       Mode  :character   Mode  :character



defending_sliding_tackle goalkeeping_diving goalkeeping_handling goalkeeping_kicking goalkeeping_positioning goalkeeping_reflexes
Length:15465             Length:15465       Length:15465         Length:15465         Length:15465           Length:15465
Class :character         Class :character   Class :character     Class :character     Class :character       Class :character
Mode  :character         Mode  :character   Mode  :character     Mode  :character     Mode  :character       Mode  :character



     ls                 st                 rs                 lw                 lf                 cf
```

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```
 mentality_positioning mentality_vision   mentality_penalties mentality_composure defending_marking  defending_standing_tackle
 Length:15465          Length:15465       Length:15465        Mode:logical        Length:15465       Length:15465
 Class :character      Class :character   Class :character    NA's:15465          Class :character   Class :character
 Mode  :character      Mode  :character   Mode  :character                        Mode  :character   Mode  :character



 defending_sliding_tackle goalkeeping_diving goalkeeping_handling goalkeeping_kicking goalkeeping_positioning goalkeeping_reflexes
 Length:15465             Length:15465       Length:15465         Length:15465         Length:15465            Length:15465
 Class :character         Class :character   Class :character     Class :character     Class :character        Class :character
 Mode  :character         Mode  :character   Mode  :character     Mode  :character     Mode  :character        Mode  :character



      ls                 st                 rs                 lw                 lf                 cf
 Length:15465       Length:15465       Length:15465       Length:15465       Length:15465       Length:15465
 Class :character   Class :character   Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character



      rf                 rw                 lam                cam                ram                lm
 Length:15465       Length:15465       Length:15465       Length:15465       Length:15465       Length:15465
 Class :character   Class :character   Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character



     lcm                cm                 rcm                rm                 lwb                ldm
 Length:15465       Length:15465       Length:15465       Length:15465       Length:15465       Length:15465
 Class :character   Class :character   Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character



     cdm                rdm                rwb                lb                 lcb                cb
 Length:15465       Length:15465       Length:15465       Length:15465       Length:15465       Length:15465
 Class :character   Class :character   Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character   Mode  :character



     rcb                rb
 Length:15465       Length:15465
 Class :character   Class :character
 Mode  :character   Mode  :character
```

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10.Displaying Dimension of the data

```{r}
dim(players_data)
```

```
[1] 15465   104
```

11.Displaying length of attack column

```{r}
length(players_data$potential)
```

```
[1] 15465
```

12.Displaying column names of data

```{r}
colnames(players_data)
```

```
  [1] "sofifa_id"                "player_url"               "short_name"               "long_name"
  [5] "age"                      "dob"                      "height_cm"                "weight_kg"
  [9] "nationality"              "club"                     "overall"                  "potential"
 [13] "value_eur"                "wage_eur"                 "player_positions"         "preferred_foot"
 [17] "international_reputation" "weak_foot"                "skill_moves"              "work_rate"
 [21] "body_type"                "real_face"                "release_clause_eur"       "player_tags"
 [25] "team_position"            "team_jersey_number"       "loaned_from"              "joined"
 [29] "contract_valid_until"     "nation_position"          "nation_jersey_number"     "pace"
 [33] "shooting"                 "passing"                  "dribbling"                "defending"
 [37] "physic"                   "gk_diving"                "gk_handling"              "gk_kicking"
 [41] "gk_reflexes"              "gk_speed"                 "gk_positioning"           "player_traits"
 [45] "attacking_crossing"       "attacking_finishing"      "attacking_heading_accuracy" "attacking_short_passing"
 [49] "attacking_volleys"        "skill_dribbling"          "skill_curve"              "skill_fk_accuracy"
 [53] "skill_long_passing"       "skill_ball_control"       "movement_acceleration"    "movement_sprint_speed"
 [57] "movement_agility"         "movement_reactions"       "movement_balance"         "power_shot_power"
 [61] "power_jumping"            "power_stamina"            "power_strength"           "power_long_shots"
 [65] "mentality_aggression"     "mentality_interceptions"  "mentality_positioning"    "mentality_vision"
 [69] "mentality_penalties"      "mentality_composure"      "defending_marking"        "defending_standing_tackle"
 [73] "defending_sliding_tackle" "goalkeeping_diving"       "goalkeeping_handling"     "goalkeeping_kicking"
 [77] "goalkeeping_positioning"  "goalkeeping_reflexes"     "ls"                       "st"
 [81] "rs"                       "lw"                       "lf"                       "cf"
 [85] "rf"                       "rw"                       "lam"                      "cam"
 [89] "ram"                      "lm"                       "lcm"                      "cm"
 [93] "rcm"                      "rm"                       "lwb"                      "ldm"
 [97] "cdm"                      "rdm"                      "rwb"                      "lb"
[101] "lcb"                      "cb"                       "rcb"                      "rb"
```

13.Displaying structure of some columns in the data

14.Displaying type of some data structure in the data

```{r}
typeof(players_data$height_cm)
```

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13.Displaying structure of some columns in the data

14.Displaying type of some data structure in the data

```{r}
typeof(players_data$height_cm)
```

```
[1] "integer"
```

15.List of variables present in book data

```{r}
ls(players_data)
```

```
 [1] "age"                     "attacking_crossing"      "attacking_finishing"     "attacking_heading_accuracy" "attacking_short_passing"
 [6] "attacking_volleys"       "body_type"               "cam"                     "cb"                      "cdm"
[11] "cf"                      "club"                    "cm"                      "contract_valid_until"    "defending"
[16] "defending_marking"       "defending_sliding_tackle" "defending_standing_tackle" "dob"                   "dribbling"
[21] "gk_diving"               "gk_handling"             "gk_kicking"              "gk_positioning"          "gk_reflexes"
[26] "gk_speed"                "goalkeeping_diving"      "goalkeeping_handling"    "goalkeeping_kicking"     "goalkeeping_positioning"
[31] "goalkeeping_reflexes"    "height_cm"               "international_reputation" "joined"                 "lam"
[36] "lb"                      "lcb"                     "lcm"                     "ldm"                     "lf"
[41] "lm"                      "loaned_from"             "long_name"               "ls"                      "lw"
[46] "lwb"                     "mentality_aggression"    "mentality_composure"     "mentality_interceptions" "mentality_penalties"
[51] "mentality_positioning"   "mentality_vision"        "movement_acceleration"   "movement_agility"        "movement_balance"
[56] "movement_reactions"      "movement_sprint_speed"   "nation_jersey_number"   "nation_position"         "nationality"
[61] "overall"                 "pace"                    "passing"                 "physic"                  "player_positions"
[66] "player_tags"             "player_traits"           "player_url"              "potential"               "power_jumping"
[71] "power_long_shots"        "power_shot_power"        "power_stamina"           "power_strength"          "preferred_foot"
[76] "ram"                     "rb"                      "rcb"                     "rcm"                     "rdm"
[81] "real_face"               "release_clause_eur"      "rf"                      "rm"                      "rs"
[86] "rw"                      "rwb"                     "shooting"                "short_name"              "skill_ball_control"
[91] "skill_curve"             "skill_dribbling"         "skill_fk_accuracy"       "skill_long_passing"      "skill_moves"
[96] "sofifa_id"               "st"                      "team_jersey_number"      "team_position"           "value_eur"
[101] "wage_eur"               "weak_foot"               "weight_kg"               "work_rate"
```

16.Display 1st row and all colum6ns of data frame

```{r}
players_data[1,]
```

Description: df [1 x 104]

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
1	158023	https://sofifa.com/player/158023/lionel-messi/15/157759	L. Messi	Lionel AndrÃ©s Messi Cuccittini	27	1987-06-24	169	67	Argentina

1 row | 1-10 of 104 columns

17.Display all rows and 1st column of data frame

```{r}

players_data[,1]
```

```
  [1] 158023  20801   9014  41236 167495 176580 183277   7826 121944 156616 167397 173731 188545 121939 155862 164240 168542 177003 198710 190871 192119 178603 183898 188350 189596 153079 176635  10535  20289  54050
 [31] 139720 192318 189511 182521 165153 179813 179844 181872 167948 177610 178088 183907  48940 143001 152729 143745 184941 188152 165239 177509 179846 167664 168435   5479   7763  45197  53302 138956 139869 146562
```

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```{r}

players_data[,1]
```

```
  [1] 158023  20801   9014  41236 167495 176580 183277   7826 121944 156616 167397 173731 188545 121939 155862 164240 168542 177003 198710 190871 192119 178603 183898 188350 189596 153079 176635  10535  20289  54050
 [31] 139720 192318 189511 182521 165153 179813 179844 181872 167948 177610 178088 183907  48940 143001 152729 143745 184941 188152 165239 177509 179846 167664 168435   5479   7763  45197  53302 138956 139869 146562
 [61] 148803 162895 182493 195864 197781 186942 193080 193082 171833 180206 186561 189505 170481 170890 167628 168651 173221   2196  13732  53612 112253 120533 137186 140601 142754 146439 146530 146536 146748 148119
 [91] 158133 162347 162835 168609 173210 174543 180930 181783 189358 189362 190460 192448 194765 169416 197445 200949 171877 186627 175943 176676 191202 192563 193747 196144 162409 172723 172871 172879 179784 180403
[121] 183556 184144 188428 150724 173426 179944 185221   1179  13743  16254  20800  48717  49370 121933 136130 136138 142784 146954 150418 152999 158625 159065 161956 163631 163705 164169 164994 173771 180432 182494
[151] 209119 184881 201535 212218 189242 189509 192985 164859 189332 189461 189712 192883 201942 170369 170797 172610 177457 181820 189574 189963 193130 170733 177458 178224 183285 139068 184943   9676  11141  24630
[181]  30110  31432  34079  45574  49369  53578 116494 135475 135507 137262 143306 146758 148711 152039 155897 159287 162131 164435 164468 165229 165580 166706 167943 177326 178372 182629 207664 190813 189513 190531
[211] 192505 198329 199556 202652 204525 205525 177413 178562 184111 187961 189354 189575 192387 193348 202166 177358 178005 188943 190483 192366 192620 193116 193352 199835 177644 177934 185020 186153 187607 189250
[241] 162240 167431 173909 177600 178393 179527 195086 199434 172175 179645 186953   1238   4098   6826   7631   8473  20775  28130  45119  50542  52091  53050 106213 106231 112316 113422 115533 138110 139968 140233
[271] 144622 147782 150656 152554 157481 157503 158626 159147 163419 167905 171919 177134 178007 179847 183284 188791 192615 196432 209097 186547 188829 191180 193476 198219 200454 167812 170597 177683 186148 187735
[301] 189125 189690 190584 190972 191043 191740 193301 194957 200610 171018 176600 179605 180216 180819 183187 184134 184312 184344 186832 188253 190815 193469 197242 198076 199416 202477 204963 167599 169588 171688
[331] 178750 184432 185239 186569 188081 188567 193041 199987 201862 156142 178518 182879 190547 190782 161754 176944 182495 189560    330   4667   5471   7289   7743  21146  25420  48745  50327  53914 103935 120312
[361] 134979 135455 137677 138726 139062 139094 139668 139997 142780 143632 146482 146741 146760 148138 148224 152747 157304 157960 158810 161805 162369 163418 163711 163824 167614 168585 169051 170664 171579 172294
[391] 176266 176619 176769 178509 179752 179875 181786 184120 186581 206407 202556 212125 198784 199189 207865 210513 207566 170368 184477 199074 200752 205566 173432 178213 181291 183711 183899 184826 185132 185174
[421] 186146 191032 200315 209102 216336 155887 160766 163489 176270 176571 177105 181458 184087 186115 188803 190149 192086 198176 198196 201400 204639 212351 173198 173208 173818 177388 183483 183574 187052 188005
[451] 192722 193698 203627 164477 172316 178416 187072 187084 188802 189246 195861 197890 105454 158121 169596   1611   1625   5485  11983  20209  31831  45186  49072 110677 114764 115909 119152 120274 121122 124375
[481] 124635 134744 136553 137506 138123 138412 140293 141200 142708 143617 144306 146011 146111 146460 147621 148122 152908 153244 154950 155885 158138 158232 158856 159145 160310 161648 163083 163155 164505 164876
[511] 165501 165526 170783 172124 172672 174379 174549 176794 176903 176949 177553 180695 183280 183666 185000 185103 188427 199151 187924 192227 201153 207862 190286 197853 199304 204970 208128 216547 190778 193061
[541] 193338 194644 203299 204024 176550 179546 179696 184716 189681 190502 195365 197937 198504 199561 200106 200215 200389 205362 206655 211061 176993 178085 179783 182168 183855 184267 188154 188377 192658 196934
[571] 197061 199451 201262 201508 209132 158905 161793 165109 165247 173306 177519 182836 183871 183937 184484 185373 187132 190223 191687 199715 200529 203528 169721 182212 183108 184200 186452 188352 163600 177983
[601] 184252 189491 192238   2147   3622  12259  26992  41635  45601  46590  51100  53405  54013 105803 108080 110381 110842 111022 111093 112542 112847 123603 124607 134956 135043 137351 137494 137763 138463 142938
[631] 143121 147006 150516 153260 153296 153934 155984 156713 156722 157430 158963 159172 159261 163492 163530 163699 164376 164493 165740 165816 167237 168354 168607 169181 170770 172114 173146 173228 176481 176731
[661] 176733 176915 177533 177635 177649 178111 178535 179589 180714 180826 182862 183498 183893 192841 194365 209082 209118 210935 201399 203038 206058 198009 201510 205498 215785 199767 202642 203486 209329 209331
[691] 193474 193525 199503 200458 202515 211368 212198 215316 215466 170370 171875 183465 190544 193504 194079 202087 203551 204523 205600 143076 181560 182152 186351 189881 190150 190582 193839 194404 198113 198141
[721] 199422 200104 205601 146296 183569 184431 184575 184789 188337 188654 188770 189795 192629 192774 198077 198200 198648 199069 199482 200145 201118 205943 156519 162220 171318 173467 176790 177019 177569 177666
[751] 177922 179528 179544 183909 186296 186912 186954 188270 189068 189156 190520 190919 197965 198202 201144 125167 153177 164491 169590 170815 172049 176094 178424 187324 187800 188042 188325 189251 189530 192333
[781] 194911 197083 164769 167549 171897 178087 187323 187659 192667 193532 193844 200647    684   2492   8517  13879  15723  16097  20556  23461  25798  26709  42521  45842  47903  49012  49425  52126  52752  52797
[811]  53014 105318 105846 107713 109416 110376 121170 121193 122849 123621 135466 135697 137361 137782 137785 138497 138699 138810 142444 142775 142902 143699 145889 146458 146797 147579 147794 148217 149184 150278
[841] 150565 151508 155989 157393 157597 158372 158543 158804 160741 163209 163423 163571 164029 164082 164910 165434 165517 166708 167305 167669 168530 170570 172143 172283 172862 176376 176957 177573 177604 177765
[871] 178250 178679 182736 182882 184010 187457 187896 190971 191834 192593 194359 200643 209083 209356 215079 208330 212150 205988 207410 214997 213135 193881 199564 203965 205402 193780 199935 200223 202685 204529
[901] 204713 210047 211575 192537 193897 194229 198683 201818 203483 206511 213899 183427 186961 187754 189060 190456 198760 199550 201454 202934 203030 203106 203280 204550 221838 172203 172233 175254 181281 183394
[931] 183975 185181 188696 188816 189324 189805 191210 194845 197117 198164 200962 201455 204341 205632 208004 212067 168650 169792 172962 179954 182888 183800 184926 186200 186405 186524 188086 188155 188177 188616
[961] 188942 189468 189477 190756 192362 193290 193735 198368 199594 201143 203376 208339 209473 211017  54033 169607 169706 173474 176285 183376 188045 189390 189484 189488 189606 193420 194209 195586 196801 199739
[991] 201095 201982 202493 202857 204032 204401 210126 211862 217699 219514
[ reached getOption("max.print") -- omitted 14465 entries ]
```

18.Display data in 2nd row and 3rd column of the data frame

```{r}
players_data[2,3]
```

```
[1] "Cristiano Ronaldo"
```

19.Display 1st and 2nd row and all columns

```{r}
players_data[1:2,]
```

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```
19.Display 1st and 2nd row and all columns
```{r}
players_data[1:2,]
```
```

Description: df [2 x 104]

	sofifa_id <int>	player_url <chr>	short_name <chr>	long_name <chr>	age <int>	dob <chr>	height_cm <int>	weight_kg <int>	nationality <chr>
1	158023	https://sofifa.com/player/158023/lionel-messi/15/157759	L. Messi	Lionel AndrÃ©s Messi Cuccittini	27	1987-06-24	169	67	Argentina
2	20801	https://sofifa.com/player/20801/c-ronaldo-dos-santos-aveiro/15/157759	Cristiano Ronaldo	Cristiano Ronaldo dos Santos Aveiro	29	1985-02-05	185	80	Portugal

2 rows | 1-10 of 104 columns

```
20.Display all rows and first 3 columns
```{r}
players_data[,3]
```
```

```
  [1] "L. Messi"              "Cristiano Ronaldo"     "A. Robben"             "Z. IbrahimoviÄ‡"      "M. Neuer"              "L. SuÃ¡rez"            "E. Hazard"             "R. van Persie"
  [9] "B. Schweinsteiger"     "F. RibÃ©ry"            "Falcao"                "G. Bale"               "R. Lewandowski"        "P. Lahm"               "Sergio Ramos"          "Thiago Silva"
 [17] "David Silva"           "L. ModriÄ‡"            "J. RodrÃguez"         "Neymar"                "T. Courtois"           "M. Hummels"            "A. Di MarÃa"          "M. Reus"
 [25] "T. MÃ¼ller"            "S. AgÃ¼ero"            "M. Ã–zil"              "Xavi"                  "Y. TourÃ©"             "W. Rooney"             "V. Kompany"            "M. GÃ¶tze"
 [33] "Sergio Busquets"       "T. Kroos"              "K. Benzema"            "E. Cavani"             "Diego Costa"           "A. Vidal"              "H. Lloris"             "Javi Martinez"
 [41] "Juan Mata"             "J. Boateng"            "P. Ã‡ech"              "C. TÃ©vez"             "PiquÃ©"                "A. Turan"              "A. SÃ¡nchez"           "Oscar"
 [49] "S. Nasri"              "M. Benatia"            "S. Khedira"            "G. HiguaÃn"           "S. Sirigu"             "Casillas"              "A. Pirlo"              "Xabi Alonso"
 [57] "D. De Rossi"           "G. Chiellini"          "W. Sneijder"           "Santi Cazorla"         "K. Huntelaar"          "Cesc FÃ bregas"        "D. GodÃn"             "P. Pogba"
 [65] "Isco"                  "I. GÃ¼ndoÄŸan"         "De Gea"                "J. Cuadrado"           "D. Sturridge"          "M. PjaniÄ‡"            "A. Ramsey"             "Pedro"
 [73] "E. Garay"              "B. Matuidi"            "S. Ruffier"            "I. RakitiÄ‡"           "A. Candreva"           "R. Weidenfeller"       "J. Terry"              "P. Mertesacker"
 [81] "J. Toulalan"           "Pepe"                  "A. Barzagli"           "N. VidiÄ‡"             "J. Mascherano"         "Negredo"               "Dani Alves"            "JesÃºs Navas"
 [89] "Diego LÃ³pez"          "I. Akinfeev"           "J. FarfÃ¡n"           "JoÃ£o Moutinho"        "S. HandanoviÄ\u008d"   "Miranda"               "C. Marchisio"          "C. Bravo"
 [97] "E. DÃ¾eko"             "M. MandÅ¾ukiÄ‡"        "S. Kagawa"             "Hulk"                  "C. Eriksen"            "M. ter Stegen"         "A. Griezmann"          "C. Vela"
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[161] "K. Strootman"         "H. Mkhitaryan"         "Roberto Firmino"       "G. dos Santos"         "N. Ã‚zahin"           "Leandro CastÃ¡n"       "L. Bender"             "S. JovetiÄ‡"
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16:56 Chunk 2 R Markdown

Console

ENG IN 20:50 15-07-2021

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function | Addins | Project: (None)

edala.Rmd

Knit | Run

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[321] "D. Blind"	"VÃctor RuÃz"	"G. Krychowiak"	"A. Abdennour"	"Ibai GÃ³mez"	"Deulofeu"	"Carvajal"	"R. Elm"
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Console

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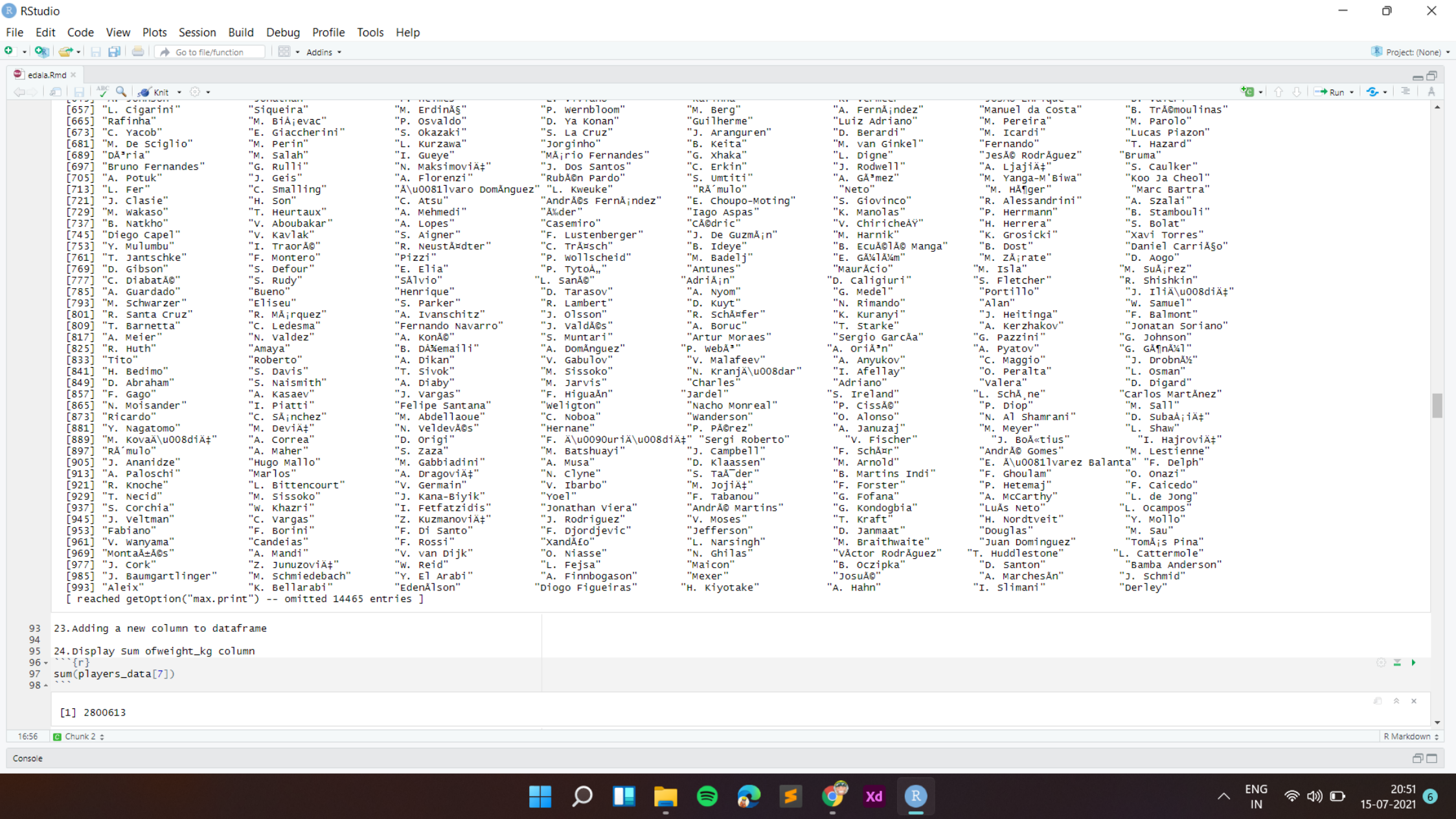
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
edala.Rmd
Knit
Run
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[905] "J. Ananidze" "Hugo Mallo" "M. Gabbiadini" "A. Musa" "D. Klaassen" "M. Arnold" "E. Ã\u0081lvarez Balanta" "F. Delph"
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24.Display Sum ofweight_kg column
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sum(players_data[7])
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[1] 2800613
16:56
Chunk 2
R Markdown
Console
ENG
IN
20:51
15-07-2021

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

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23.Adding a new column to dataframe

24.Display Sum ofweight_kg column

```r
sum(players_data[7])
```

```
[1] 2800613
```

25.Display the maximum value of the potential column

```r
max(players_data[12])
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[1] 95
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26.Display the minimum value of the potential column

```r
min(players_data[12])
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[1] 40
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27.Attaching player data

```r
attach(players_data)
```

```
The following objects are masked from players_data (pos = 3):

    age, attacking_crossing, attacking_finishing, attacking_heading_accuracy, attacking_short_passing, attacking_volleys, body_type, cam, cb, cdm, cf, club, cm, contract_valid_until, defending,
    defending_marking, defending_sliding_tackle, defending_standing_tackle, dob, dribbling, gk_diving, gk_handling, gk_kicking, gk_positioning, gk_reflexes, gk_speed, goalkeeping_diving,
    goalkeeping_handling, goalkeeping_kicking, goalkeeping_positioning, goalkeeping_reflexes, height_cm, international_reputation, joined, lam, lb, lcb, lcm, ldm, lf, lm, loaned_from, long_name,
    ls, lw, lwb, mentality_aggression, mentality_composure, mentality_interceptions, mentality_penalties, mentality_positioning, mentality_vision, movement_acceleration, movement_agility,
    movement_balance, movement_reactions, movement_sprint_speed, nation_jersey_number, nation_position, nationality, overall, pace, passing, physic, player_positions, player_tags, player_traits,
    player_url, potential, power_jumping, power_long_shots, power_shot_power, power_stamina, power_strength, preferred_foot, ram, rb, rcb, rcm, rdm, real_face, release_clause_eur, rf, rm, rs, rw,
    rwb, shooting, short_name, skill_ball_control, skill_curve, skill_dribbling, skill_fk_accuracy, skill_long_passing, skill_moves, sofifa_id, st, team_jersey_number, team_position, value_eur,
    wage_eur, weak_foot, weight_kg, work_rate

The following objects are masked from players_data (pos = 4):

    age, attacking_crossing, attacking_finishing, attacking_heading_accuracy, attacking_short_passing, attacking_volleys, body_type, cam, cb, cdm, cf, club, cm, contract_valid_until, defending,
    defending_marking, defending_sliding_tackle, defending_standing_tackle, dob, dribbling, gk_diving, gk_handling, gk_kicking, gk_positioning, gk_reflexes, gk_speed, goalkeeping_diving,
    goalkeeping_handling, goalkeeping_kicking, goalkeeping_positioning, goalkeeping_reflexes, height_cm, international_reputation, joined, lam, lb, lcb, lcm, ldm, lf, lm, loaned_from, long_name,
    ls, lw, lwb, mentality_aggression, mentality_composure, mentality_interceptions, mentality_penalties, mentality_positioning, mentality_vision, movement_acceleration, movement_agility,
    movement_balance, movement_reactions, movement_sprint_speed, nation_jersey_number, nation_position, nationality, overall, pace, passing, physic, player_positions, player_tags, player_traits,
    player_url, potential, power_jumping, power_long_shots, power_shot_power, power_stamina, power_strength, preferred_foot, ram, rb, rcb, rcm, rdm, real_face, release_clause_eur, rf, rm, rs, rw,
    rwb, shooting, short_name, skill_ball_control, skill_curve, skill_dribbling, skill_fk_accuracy, skill_long_passing, skill_moves, sofifa_id, st, team_jersey_number, team_position, value_eur,
    wage_eur, weak_foot, weight_kg, work_rate
```

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28.Now we can use variables inside players data min(height_cm)

```{r}
tail(potential)
```

```
[1] 52 61 50 50 49 40
```

29.Sorting height_cm variable in ascending order

```{r}
sort(height_cm)
```

```
  [1] 155 157 158 159 159 159 160 160 160 160 160 160 160 160 161 161 162 162 162 162 162 162 162 162 162 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 163 164 164 164 164 164
 [54] 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 164 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165
[107] 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 165 166 166 166 166 166 166 166 166 166 166
[160] 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 166 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167
[213] 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 167 168 168 168 168 168 168 168
[266] 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168
[319] 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168
[372] 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168
[425] 168 168 168 168 168 168 168 168 168 168 168 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169
[478] 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169
[531] 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 169 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[584] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[637] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[690] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[743] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[796] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[849] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[902] 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170 170
[955] 170 170 170 170 170 170 170 170 170 170 170 170 170 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171 171
[ reached getOption("max.print") -- omitted 14465 entries ]
```

30.Sorting height_cm variable in descending order

```{r}
sort(height_cm,decreasing = TRUE)
```

```
  [1] 203 203 203 201 201 201 201 201 201 201 200 200 200 200 200 199 199 199 199 199 199 199 199 199 199 199 199 199 199 199 199 199 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198 198
 [54] 198 198 198 198 198 198 198 198 198 198 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 197 196 196 196 196 196 196 196
[107] 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196
[160] 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196 196
[213] 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195 195
[266] 195 195 195 195 195 195 195 195 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194
[319] 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194
[372] 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194 194
[425] 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193
[478] 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193
[531] 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193
[584] 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193 193
```

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31.Detaching player data

```{r}
detach(players_data)
```

32.Using with operator to use variables inside data

```{r}
with(players_data,potential)
```

```
  [1] 95 92 90 90 90 91 90 88 88 88 88 91 89 87 87 87 87 87 92 91 90 88 88 88 88 87 87 86 86 86 86 91 89 88 87 87 87 87 86 86 86 86 85 85 89 88 88 87 86 86 86 85 85 84 84 84 84 84 84 84 84 84 84 89 88 87 87 87 86 86
 [71] 86 86 85 85 84 84 84 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 88 88 88 87 87 87 86 86 85 85 85 85 85 85 84 84 84 84 84 84 84 84 84 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82 82
[141] 82 82 82 82 82 82 82 82 82 82 82 88 88 88 86 86 86 85 85 85 85 85 85 84 84 84 84 84 84 84 84 83 83 83 83 83 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 87 86 86
[211] 86 86 86 86 86 86 85 85 85 85 85 85 85 85 85 84 84 84 84 84 84 84 84 84 83 83 83 83 83 83 83 82 82 82 82 82 82 82 82 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
[281] 80 80 80 80 80 80 80 80 80 85 85 85 85 85 85 84 84 84 84 84 84 84 84 84 84 84 84 84 84 84 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82 81 81 81 81 81 80 80 80 80 79 79
[351] 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 83 83 83
[421] 83 83 83 83 83 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 79 79 79 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78
[491] 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78
[561] 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 78 78 78 78 78 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77
[631] 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 77 87 86 86 86 85 85 85 85 84 84 84 84 84 83 83 83 83 83 83 83 83 83 82
[701] 82 82 82 82 82 82 82 82 82 81 81 81 81 81 81 81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 78 78 78 78 78
[771] 78 78 78 78 78 78 78 78 78 78 78 78 77 77 77 77 77 77 77 77 77 77 77 77 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76
[841] 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 76 87 87 86 86 86 85 84 84 84 84 83 83 83 83 83 83 83 83 82 82 82 82 82 82 82
[911] 82 81 81 81 81 81 81 81 81 81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 79 78 78 78 78 78 78
[981] 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78 78
[ reached getOption("max.print") -- omitted 14465 entries ]
```

33.Finding median of data

```{r}
median(players_data$potential)
```

```
[1] 68
```

34.Finding mean of data

```{r}
mean(players_data$potential)
```

```
[1] 68.48309
```

35.Finding standard deviation of data

```{r}
sd(players_data$height_cm)
```

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```
36.Finding variance of data
```{r}
var(players_data$height_cm)
```
```

```
[1] 44.02564
```

```
37.Order the height_cm column in ascending order
```{r}
order(players_data[7])
```
```

```
warning in xtfrm.data.frame(x) : cannot xtfrm data frames
   [1] 13518  4103 13939  3211  3487  5841  1228  1631  2549  6511 10783 11144 12348 13745  2798  3344  3601  3837  3881  5851  6260  6358 10071 14397 14567   294   417  2265  2478  2660  3188  3567  3776  3924  3926
  [36]  4776  5323  5439  6097  6125  6236  9372 11143 11471 11669 12776 13708 14341   216   726  1246  1343  1930  2330  3094  3248  3283  3713  4252  5735  6241  6278  7039  7079  7086  7164  7255  7905  9059  9435
  [71] 10953 11436 12163 13135 15065   213   376   710  1191  1344  1499  2249  2257  2814  3268  3508  3834  4027  4116  4165  4247  4259  4456  4460  4498  5028  5381  5423  5430  5572  6070  6225  6476  6679  6697
 [106]  6723  7228  7423  7480  7698  8036  8343  8909  8941  9587  9787 10086 10617 10784 11009 11077 11138 11374 12000 12181 12186 12308 12521 12606 12814 12823 12931 13023 13126 13211 13428 13502 13707 13906 13972
 [141] 13993 13996 14000 14091 14128 14412 14500 14989 15025 15336 15355   453  1569  1740  1935  2052  2109  2193  2297  2760  3101  3251  3537  3836  4235  4925  5227  6177  6447  6747  6950  7390  7574  8430 10453
 [176] 10542 10967 11948 12165 12253 13328 13373 13390 14172 14969 15268 15385 15430   198   204   665   674  1068  1333  1989  2286  2430  2575  2581  2650  2852  3392  3464  3611  3694  3929  3976  4055  4149  4218
 [211]  4408  4523  4610  4640  4669  4873  5171  5178  5428  5445  6611  6783  6924  7091  7111  7222  7233  7332  7477  7636  7715  8296  8614  9074  9106  9317  9411  9487 10313 10370 10680 10780 10919 11389 11443
 [246] 11984 12593 12803 12821 12974 13110 13112 13590 13693 13927 14739 14773 14820 14979 15249 15267 15271    60   548   646   808   908   939   996  1027  1045  1084  1255  1282  1315  1326  1418  1466  1560  1660
 [281]  1715  1792  1836  1840  1858  1861  1867  1920  2015  2067  2092  2175  2196  2356  2512  2641  2707  2809  2818  2833  2851  2894  3002  3009  3093  3298  3372  3509  3638  3781  3806  3856  3908  3925  4093
 [316]  4105  4191  4265  4525  4668  4697  4738  5329  5373  5392  5417  5570  5638  5737  5852  5859  5985  5988  6087  6141  6228  6291  6464  6482  6486  6653  7052  7196  7314  7326  8078  8085  8205  8230  8240
 [351]  8241  8299  8313  8440  8609  8808  9019  9060  9186  9237  9245  9421  9469  9527  9636  9717  9785  9825  9859  9876  9891  9959 10052 10120 10447 10489 10581 10625 10704 10980 10982 11084 11151 11314 11322
 [386] 11331 11399 11594 11699 11748 12051 12137 12175 12211 12463 12479 12529 12647 12649 12659 12674 12735 12826 12847 12910 12934 12990 13044 13059 13131 13214 13215 13326 13397 13531 13712 13809 13957 14100 14155
 [421] 14490 14529 14566 14613 14645 14760 14832 14891 14968 14981 15139 15151 15256 15426     1    72   109   222   224   406   721   785   791   941   960  1024  1029  1157  1337  1417  1786  1839  1910  1985  2040
 [456]  2296  2299  2854  2861  3092  3164  3306  3330  3371  3373  3377  3561  3666  3688  3701  4076  4234  4299  4323  4401  4541  4625  4664  4817  4823  4874  5002  5316  5401  5410  5513  5527  5559  5666  5709
 [491]  5837  6123  6163  6272  6427  6436  7104  7333  7416  7420  7473  7504  7818  8073  8087  8121  8150  8202  8286  8526  8697  8731  8838  8922  9415  9441  9561  9803  9846  9870  9899  9916 10068 10229 10368
 [526] 10535 10934 11431 11438 11473 11623 11732 11856 11972 12117 12141 12316 12361 12582 12622 12715 12746 12753 13447 13568 13611 13804 13811 14055 14359 14465 14950 15077 15227 15344    10    14    17    28    59
 [561]    88   144   159   214   229   260   357   478   538   546   561   572   627   650   852   881   905   940   974   986  1034  1044  1158  1167  1297  1302  1340  1471  1492  1563  1565  1618  1721  1739  1763
 [596]  1855  1877  1929  1953  2019  2041  2059  2114  2119  2224  2225  2270  2285  2306  2320  2348  2394  2444  2542  2580  2612  2651  2656  2666  2717  2755  2762  2771  2794  2797  2827  2830  2872  2883  2888
 [631]  2900  2919  2929  3028  3040  3084  3120  3163  3200  3244  3274  3319  3411  3462  3558  3575  3693  3702  3731  3735  3865  3918  3978  4032  4033  4185  4238  4307  4399  4427  4472  4515  4531  4612  4620
 [666]  4627  4628  4661  4678  4685  4708  4733  4735  4782  4805  4826  4880  4932  5087  5128  5129  5219  5256  5327  5362  5459  5522  5535  5537  5563  5578  5588  5623  5631  5650  5656  5691  5744  5745  5779
 [701]  5856  5882  6047  6142  6180  6220  6259  6270  6330  6347  6385  6443  6454  6498  6510  6532  6604  6657  6678  6696  6712  6848  6867  6891  6892  6899  6939  7032  7085  7095  7124  7215  7250  7259  7261
 [736]  7263  7361  7382  7383  7387  7402  7407  7448  7512  7589  7604  7664  7672  7749  7828  7844  7891  7942  7947  7995  8014  8091  8110  8165  8254  8282  8318  8340  8389  8444  8447  8468  8508  8568  8631
 [771]  8661  8682  8686  8947  8977  8988  9013  9068  9082  9094  9096  9101  9127  9152  9185  9204  9255  9268  9334  9356  9381  9397  9400  9444  9484  9515  9542  9583  9631  9707  9762  9775  9793  9800  9830
 [806]  9854  9887  9921  9983 10048 10050 10072 10093 10099 10117 10192 10218 10223 10234 10238 10248 10282 10384 10401 10408 10510 10544 10559 10628 10657 10664 10775 10789 10849 10901 10915 10938 10983 11025 11032
 [841] 11034 11113 11186 11321 11328 11371 11450 11463 11500 11515 11516 11631 11680 11686 11720 11737 11743 11807 11852 11936 11939 11943 12003 12023 12036 12040 12048 12056 12161 12220 12241 12282 12300 12330 12405
 [876] 12442 12448 12495 12501 12502 12551 12560 12605 12607 12614 12620 12642 12719 12742 12766 12770 12874 12875 12882 12888 12965 12983 12999 13006 13017 13170 13212 13364 13387 13410 13413 13420 13421 13430 13462
 [911] 13476 13545 13612 13645 13652 13688 13692 13697 13749 13787 13814 13819 13910 13962 13999 14029 14050 14058 14106 14143 14235 14272 14284 14300 14348 14385 14388 14456 14493 14517 14522 14535 14557 14586 14683
 [946] 14695 14716 14740 14779 14815 14826 14847 14851 14875 14881 14887 14918 14929 14951 14957 15184 15191 15216 15240 15250 15269 15373 15416 15418 15434    47    92   155   304   412   463   729   790   922  1049
 [981]  1110  1165  1171  1206  1256  1433  1504  1573  1625  1750  1954  1992  2145  2244  2311  2355  2379  2406  2419  2508
 [ reached getOption("max.print") -- omitted 14465 entries ]
```

```
38.Order the potential column in descending order
```{r}
order(players_data$potential,decreasing =TRUE)
```
```

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38.Order the potential column in descending order

```{r}
order(players_data$potential,decreasing =TRUE)
```

```
  [1]     1     2    19     6    12    20    32     3     4     5     7    21    13    33    45    64     8     9    10    11    22    23    24    25    34    46    47    65   101   102   103   152   153   154   401
 [36]   528  1515    14    15    16    17    18    26    27    35    36    37    38    48    66    67    68   104   105   106   208   402   678   886   887  2329    28    29    30    31    39    40    41    42    49
 [71]    50    51    69    70    71    72   107   108   155   156   157   209   210   211   212   213   214   215   216   403   404   405   406   679   680   681   888   889   890  2781  2782  3311    43    44    52
[106]    53    73    74   109   110   111   112   113   114   158   159   160   161   162   163   217   218   219   220   221   222   223   224   225   290   291   292   293   294   295   407   529   530   531   532
[141]   682   683   684   685   891  1147  1148  1149  1516  1517  1518  1519  2330  2783    54    55    56    57    58    59    60    61    62    63    75    76    77   115   116   117   118   119   120   121   122
[176]   123   164   165   166   167   168   169   170   171   226   227   228   229   230   231   232   233   234   296   297   298   299   300   301   302   303   304   305   306   307   308   309   408   409   410
[211]   411   412   533   534   535   536   537   538   686   687   688   689   690   892   893   894   895  1150  1151  1152  1520  1888  1889  1890  1891  1892  2331  5428  6234  9001    78    79    80    81    82
[246]    83    84    85    86    87    88    89    90    91    92    93    94    95    96    97    98    99   100   124   125   126   127   172   173   174   175   235   236   237   238   239   240   310   311   312
[281]   313   314   315   316   317   318   319   320   321   322   323   324   325   326   327   413   414   415   416   417   418   419   420   421   422   423   424   425   539   540   541   542   543   544   691
[316]   692   693   694   695   696   697   698   699   896   897   898   899   900   901   902   903  1153  1154  1155  1156  1157  1158  1521  1522  1523  1524  1525  1526  1527  1528  1893  1894  1895  1896  2332
[351]  2333  2784  2785  2786  3312  3885  3886  3887  3888  3889  4638  4639  4640  4641  5429   128   129   130   131   132   133   134   135   136   137   138   139   140   141   142   143   144   145   146   147
[386]   148   149   150   151   176   177   241   242   243   244   245   246   247   248   328   329   330   331   332   333   334   335   336   337   338   339   426   427   428   429   430   431   432   433   434
[421]   435   436   437   438   439   440   441   442   545   546   547   548   549   550   551   552   553   554   555   556   557   558   559   560   700   701   702   703   704   705   706   707   708   709   904
[456]   905   906   907   908   909   910   911  1159  1160  1161  1162  1163  1164  1165  1166  1167  1529  1530  1531  1532  1533  1897  1898  1899  1900  1901  1902  1903  2334  2335  2336  2337  2338  2787  2788
[491]  2789  2790  3313  3314  3890  3891  3892  3893  4642  4643  4644  4645  4646  4647  7114  7115  8102  9002   178   179   180   181   182   183   184   185   186   187   188   189   190   191   192   193   194
[526]   195   196   197   198   199   200   201   202   203   204   205   206   207   249   250   251   340   341   342   343   344   443   444   445   446   447   448   449   450   451   452   453   561   562   563
[561]   564   565   566   567   568   569   570   571   572   573   574   575   710   711   712   713   714   715   716   717   718   719   720   721   722   723   912   913   914   915   916   917   918   919   920
[596]   921   922   923   924   925  1168  1169  1170  1171  1172  1173  1174  1534  1535  1536  1537  1538  1904  1905  1906  1907  1908  1909  1910  1911  1912  1913  2339  2340  2341  2342  2343  2344  2345  2346
[631]  2791  2792  2793  2794  2795  2796  2797  2798  2799  3315  3316  3317  3318  3319  3320  3894  3895  4648  4649  4650  5430  5431  6235  6236  7116  8103  8104  8105  9003  9004  9005  9006  9823 10552   252
[666]   253   254   255   256   257   258   259   260   261   262   263   264   265   266   267   268   269   270   271   272   273   274   275   276   277   278   279   280   281   282   283   284   285   286   287
[701]   288   289   345   346   347   348   454   455   456   457   458   459   460   461   462   576   577   578   579   580   581   582   583   584   585   586   587   588   589   590   591   592   724   725   726
[736]   727   728   729   730   731   732   733   734   735   736   737   738   739   740   741   742   926   927   928   929   930   931   932   933   934   935   936   937   938   939   940   941   942   943   944
[771]   945   946  1175  1176  1177  1178  1179  1180  1181  1182  1183  1184  1185  1186  1187  1188  1189  1190  1191  1192  1193  1194  1195  1196  1197  1539  1540  1541  1542  1543  1544  1545  1546  1547  1548
[806]  1549  1550  1551  1552  1553  1554  1555  1914  1915  1916  1917  1918  1919  1920  1921  1922  1923  2347  2348  2349  2350  2351  2352  2800  2801  2802  2803  2804  2805  2806  2807  3321  3322  3896  3897
[841]  3898  4651  4652  4653  4654  4655  5432  5433  5434  5435  6237  6238  6239  7117  7118  7119  7120  7121  8106  9007  9824  9825  9826  9827 10553 10554 10555 11382 11383 11989 11990   349   350   351   352
[876]   353   354   355   356   357   358   359   360   361   362   363   364   365   366   367   368   369   370   371   372   373   374   375   376   377   378   379   380   381   382   383   384   385   386   387
[911]   388   389   390   391   392   393   394   395   396   397   398   399   400   463   464   465   593   594   595   596   597   598   743   744   745   746   747   748   749   750   751   752   753   754   755
[946]   756   757   758   759   760   761   762   763   764   765   947   948   949   950   951   952   953   954   955   956   957   958   959   960   961   962   963   964   965   966   967   968   969   970   971
[981]   972   973   974  1198  1199  1200  1201  1202  1203  1204  1205  1206  1207  1208  1209  1210  1211  1212  1213  1214
 [ reached getOption("max.print") -- omitted 14465 entries ]
```

39.Rank of potential column

```{r}
rank(players_data$height_cm)
```

```
  [1]   495.0 11023.5  6742.0 15232.5 14920.0  7721.0  1835.0 12470.0  9304.0   763.0  4161.5  9304.0 10175.5   763.0  9304.0  9304.0   763.0  2294.0  6742.0  2905.0 15442.5 14683.5  6742.0  7721.0 11860.0  1390.5
 [27]  9304.0   763.0 13651.0  3598.0 14683.5  3598.0 13651.0  8396.0 10175.5 10175.5 13121.5  6742.0 13121.5 14006.0  2294.0 14683.5 15320.0  1835.0 14683.5  4161.5  1089.5  5786.0  2905.0 13121.5 13651.0 10175.5
 [53] 14683.5 11023.5  4161.5  9304.0 11023.5 11860.0   763.0   348.5 11860.0  5786.0 11860.0 13121.5  3598.0  6742.0 14920.0  3598.0  9304.0  6742.0  4161.5   495.0 13121.5  2905.0 13121.5 10175.5  7721.0 13121.5
 [79] 12470.0 15418.5  9304.0 13121.5 11860.0 14006.0  2294.0 11860.0  1835.0   763.0 15320.0 11860.0  4980.5  1089.5 14920.0 11860.0  5786.0 11023.5 14920.0 12470.0  1390.5  6742.0  4161.5 13651.0  3598.0  4161.5
[105]  6742.0  1390.5  9304.0 13121.5   495.0  2294.0 15122.0 14006.0  4980.5 11023.5  1835.0 15453.0 13651.0 11023.5 12470.0  2905.0 14920.0  1835.0  4980.5 15320.0 14920.0 13651.0 12470.0 14393.0  9304.0 14393.0
[131]  4980.5 11860.0 12470.0 14393.0 13121.5  1835.0  4980.5  6742.0 13651.0  2905.0 13121.5  1835.0  2905.0   763.0 11023.5  8396.0  2905.0 10175.5  6742.0 14006.0 15122.0  4161.5 14393.0 13651.0  1089.5  1390.5
[157]  7721.0  3598.0   763.0  1390.5 11860.0  4980.5  7721.0  2905.0  6742.0 10175.5 10175.5  9304.0 12470.0  8396.0  9304.0  5786.0 11023.5  2905.0 12470.0  2905.0  6742.0  5786.0 10175.5 13121.5 13651.0 13121.5
[183]  3598.0  3598.0 11860.0  2294.0 12470.0  9304.0  3598.0 14393.0 14683.5  5786.0 14683.5 14393.0 11023.5  8396.0 15232.5   225.5 14920.0 11860.0 13121.5 14393.0  2905.0   225.5 11023.5  8396.0  7721.0  4980.5
[209]  6742.0 12470.0 14006.0  6742.0   113.5   763.0  7721.0    62.0 11860.0  2294.0 14006.0  7721.0  5786.0   495.0  7721.0   495.0 12470.0  7721.0 14006.0 13651.0   763.0  9304.0 14006.0 12470.0  6742.0  8396.0
[235] 14393.0  2294.0  4980.5 15320.0 15122.0 13651.0 11023.5  1390.5 11860.0  2905.0  4980.5 10175.5 13121.5  7721.0  4980.5 14006.0 12470.0  6742.0  9304.0  9304.0  2905.0  4980.5  2905.0  8396.0  2905.0   763.0
[261]  1835.0 14393.0  8396.0  8396.0 14683.5  2905.0 15122.0 12470.0  8396.0 11023.5  2294.0  3598.0  1390.5  3598.0 14006.0 11023.5  4980.5  6742.0  3598.0  7721.0 15418.5 13651.0  6742.0 15232.5 10175.5  3598.0
```

16:56 Chunk 2 R Markdown

Console

ENG IN 20:51 15-07-2021