## DATA EXPLORATION AND VISUALIZATION

November 20, 2022

## 1 LOADING THE FIFA DATA

```
[11]: fifa=pd.read_csv('fifa_data.csv')
      pd.set_option('display.max_columns',89) #code to display the maximum number of
       ⇔columns
[12]: fifa.head(3)
[12]:
         Unnamed: 0
                         ID
                                           Name
                                                 Age
      0
                     158023
                                       L. Messi
                                                  31
                      20801
                             Cristiano Ronaldo
                                                  33
      1
                  1
      2
                  2
                     190871
                                      Neymar Jr
                                                  26
                                                   Photo Nationality \
         https://cdn.sofifa.org/players/4/19/158023.png
                                                            Argentina
          https://cdn.sofifa.org/players/4/19/20801.png
                                                             Portugal
         https://cdn.sofifa.org/players/4/19/190871.png
                                                               Brazil
                                         Flag
                                              Overall
                                                        Potential
      0 https://cdn.sofifa.org/flags/52.png
                                                    94
                                                                94
      1 https://cdn.sofifa.org/flags/38.png
                                                    94
                                                                94
      2 https://cdn.sofifa.org/flags/54.png
                                                    92
                                                                93
                        Club
                                                                   Club Logo
                                                                                Value
      0
                FC Barcelona
                              https://cdn.sofifa.org/teams/2/light/241.png
                                                                              €110.5M
                    Juventus
                                https://cdn.sofifa.org/teams/2/light/45.png
      1
                                                                                 €77M
      2 Paris Saint-Germain
                                https://cdn.sofifa.org/teams/2/light/73.png
                                                                              €118.5M
                Special Preferred Foot International Reputation Weak Foot
          Wage
         €565K
                   2202
                                   Left
                                                               5.0
                                                                          4.0
                                                                          4.0
         €405K
                   2228
                                  Right
                                                               5.0
         €290K
                   2143
                                  Right
                                                               5.0
                                                                          5.0
                                        Body Type Real Face Position
         Skill Moves
                           Work Rate
                                                                       Jersey Number \
      0
                 4.0 Medium/ Medium
                                            Messi
                                                        Yes
                                                                   RF
                                                                                10.0
                                                                                 7.0
                 5.0
                           High/ Low
                                       C. Ronaldo
                                                        Yes
                                                                   ST
      1
      2
                 5.0
                        High/ Medium
                                                                                10.0
                                           Neymar
                                                        Yes
                                                                   LW
```

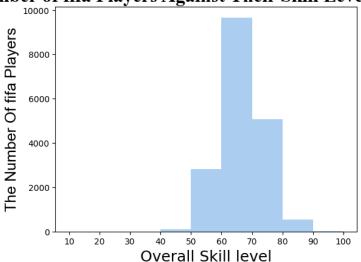
```
Joined Loaned From Contract Valid Until Height Weight
                                                                     LS
                                                                           ST \
                                                      5'7
    Jul 1, 2004
                        NaN
                                             2021
                                                           1591bs
                                                                   88+2
                                                                         88+2
   Jul 10, 2018
                        NaN
                                             2022
                                                      6'2 1831bs
                                                                   91+3
                                                                         91+3
1
    Aug 3, 2017
                        NaN
                                             2022
                                                      5'9
                                                           1501bs
                                                                   84+3 84+3
     R.S
           LW
                       CF
                              RF
                                    RW
                                         LAM
                                               CAM
                                                      RAM
                                                             LM
                                                                  LCM
                                                                         CM
                 LF
  88+2
         92+2
               93+2
                           93+2
                                  92+2
                                        93+2
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                                                    93+2
                                                           91+2
                                                                 84+2
                     93+2
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                                              88+3
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1 91+3 89+3
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                                  89+3
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                                                                 81+3
                                                                       81+3
2 84+3 89+3
               89+3
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                            89+3
                                  89+3
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                                              89+3
                                                     89+3
                                                           88+3
                                                                 81+3
                                                                       81+3
    RCM
           RM
                LWB
                      LDM
                             CDM
                                   RDM
                                         RWB
                                                LB
                                                      LCB
                                                             CB
                                                                  RCB
                                                                         RB
                           61+2
                                  61+2
                                        64+2
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0 84+2 91+2
               64+2
                     61+2
                                              59+2
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                                                                 47+2
                                                                       59+2
  81+3 88+3
                     61+3
                           61+3
                                  61+3
                                        65+3
                                              61+3
                                                    53+3
                                                           53+3
                                                                 53+3
               65+3
                                                                       61+3
2 81+3 88+3
               65+3
                     60+3 60+3
                                  60+3
                                       65+3
                                              60+3 47+3 47+3
                                                                 47+3
                                                                       60+3
   Crossing Finishing HeadingAccuracy ShortPassing Volleys
                                                                 Dribbling \
0
       84.0
                  95.0
                                    70.0
                                                  90.0
                                                            86.0
                                                                       97.0
                  94.0
       84.0
                                    89.0
                                                  81.0
                                                            87.0
                                                                       88.0
1
       79.0
                  87.0
                                    62.0
                                                  84.0
                                                            84.0
                                                                       96.0
   Curve FKAccuracy LongPassing BallControl Acceleration SprintSpeed
0
    93.0
                94.0
                              87.0
                                           96.0
                                                          91.0
                                                                       86.0
    81.0
                76.0
                                           94.0
                                                          89.0
1
                              77.0
                                                                       91.0
    88.0
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                              78.0
                                           95.0
                                                          94.0
                                                                       90.0
   Agility Reactions Balance ShotPower
                                           Jumping Stamina Strength \
0
      91.0
                 95.0
                           95.0
                                      85.0
                                               68.0
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                                                                   59.0
      87.0
                           70.0
                                                                   79.0
1
                 96.0
                                      95.0
                                               95.0
                                                         88.0
2
      96.0
                 94.0
                           84.0
                                      80.0
                                               61.0
                                                         81.0
                                                                   49.0
   LongShots
              Aggression Interceptions Positioning
                                                       Vision Penalties
        94.0
                    48.0
                                                 94.0
                                                          94.0
0
                                    22.0
                                                                     75.0
        93.0
                                                  95.0
                                                                     85.0
                    63.0
                                    29.0
                                                          82.0
1
        82.0
                                                 89.0
                                                          87.0
                    56.0
                                    36.0
                                                                     81.0
              Marking StandingTackle SlidingTackle
                                                       GKDiving
                                                                  GKHandling \
   Composure
0
        96.0
                 33.0
                                  28.0
                                                 26.0
                                                             6.0
                                                                        11.0
        95.0
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1
                 28.0
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2
        94.0
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                                                 33.0
                                                             9.0
                                                                         9.0
   GKKicking GKPositioning GKReflexes Release Clause
0
        15.0
                        14.0
                                     8.0
                                                 €226.5M
1
        15.0
                        14.0
                                    11.0
                                                 €127.1M
2
        15.0
                       15.0
                                    11.0
                                                 €228.1M
```

[13]: fifa['Overall'] #Shows the data about overall skillset of fifa players

```
[13]: 0
               94
      1
               94
      2
               92
      3
               91
      4
               91
      18202
               47
      18203
               47
      18204
               47
      18205
               47
      18206
               46
      Name: Overall, Length: 18207, dtype: int64
[14]: plt.style.use('default')
      bins=[10,20,30,40,50,60,70,80,90,100] #bins are the vertical projections and
       →you can get the number of players for each overall skill level by constantly ⊔
       →adjusting the bins to include. Setting the bins to between 90 and 100 shows
       →that only 14 players have a skill-level between 90-100
      plt.hist(fifa['Overall'],bins=bins,color='#abcdef')
      plt.xticks(bins)
      plt.ylabel('The Number Of fifa Players',fontdict={'fontsize':18,'fontname':

¬'Arial'})
      plt.xlabel('Overall Skill level',fontdict={'fontsize':18})
      plt.title('The Number of fifa Players Against Their Skill Level in FIFA⊔
       →2018',fontdict={'fontsize':23,'fontweight':'bold','fontname':'Times New_
       GRoman'})
      plt.show()
```

The Number of fifa Players Against Their Skill Level in FIFA 2018



```
[15]:
      fifa.head(3)
         Unnamed: 0
[15]:
                                                  Age
                                                       \
                          ID
                                            Name
                  0
                     158023
                                       L. Messi
      0
                                                   31
      1
                  1
                       20801
                              Cristiano Ronaldo
                                                   33
      2
                                      Neymar Jr
                      190871
                                                   26
                                                    Photo Nationality
         https://cdn.sofifa.org/players/4/19/158023.png
                                                            Argentina
      1
          https://cdn.sofifa.org/players/4/19/20801.png
                                                             Portugal
         https://cdn.sofifa.org/players/4/19/190871.png
                                                               Brazil
                                                        Potential
                                         Flag Overall
         https://cdn.sofifa.org/flags/52.png
                                                     94
         https://cdn.sofifa.org/flags/38.png
                                                     94
                                                                 94
         https://cdn.sofifa.org/flags/54.png
                                                     92
                                                                 93
                        Club
                                                                    Club Logo
                                                                                 Value
      0
                               https://cdn.sofifa.org/teams/2/light/241.png
                FC Barcelona
                                                                               €110.5M
                     Juventus
                                https://cdn.sofifa.org/teams/2/light/45.png
                                                                                  €77M
      1
                                https://cdn.sofifa.org/teams/2/light/73.png
         Paris Saint-Germain
                                                                               €118.5M
          Wage
                Special Preferred Foot
                                         International Reputation
                                                                     Weak Foot
      0
         €565K
                   2202
                                   Left
                                                               5.0
                                                                           4.0
         €405K
                   2228
                                  Right
                                                               5.0
                                                                           4.0
      1
         €290K
                   2143
                                  Right
                                                               5.0
                                                                           5.0
         Skill Moves
                            Work Rate
                                        Body Type Real Face Position Jersey Number \
```

```
RF
                                                                           10.0
0
           4.0
               Medium/ Medium
                                      Messi
                                                   Yes
1
           5.0
                      High/ Low C. Ronaldo
                                                   Yes
                                                              ST
                                                                            7.0
2
           5.0
                                                                           10.0
                  High/ Medium
                                      Neymar
                                                   Yes
                                                              LW
         Joined Loaned From Contract Valid Until Height Weight
                                                                      LS
                                                                            ST
    Jul 1, 2004
                                              2021
                                                      5'7
                                                           1591bs
                                                                    88+2
                                                                          88+2
0
                         NaN
   Jul 10, 2018
                                              2022
                                                      6'2 1831bs
                                                                    91+3
                                                                          91+3
1
                         NaN
    Aug 3, 2017
                                              2022
                                                      5'9
                                                           1501bs 84+3 84+3
                         NaN
     RS
           LW
                 LF
                        CF
                              RF
                                    RW
                                          LAM
                                                CAM
                                                      RAM
                                                              LM
                                                                   LCM
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   88+2
                            93+2
                                  92+2
                                        93+2
                                               93+2
                                                     93+2
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               93+2
                      93+2
                                                                  84+2
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                                        88+3
                                               88+3
                                                     88+3
                                                            88+3
   91+3
         89+3
               90+3
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                            90+3
                                  89+3
                                                                  81+3
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    RCM
           RM
                LWB
                       LDM
                             CDM
                                   RDM
                                          RWB
                                                 LB
                                                      LCB
                                                              CB
                                                                   RCB
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   84+2
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                                                                        59+2
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                                                     53+3
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                     60+3 60+3 60+3
                                        65+3
                                               60+3 47+3 47+3
   81+3 88+3
               65+3
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                                                                        60+3
   Crossing
            Finishing
                        HeadingAccuracy
                                          ShortPassing
                                                        Volleys
                                                                   Dribbling
0
       84.0
                   95.0
                                    70.0
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                                                             86.0
                                                                        97.0
       84.0
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                                    89.0
                                                             87.0
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                                                                        88.0
2
       79.0
                  87.0
                                    62.0
                                                   84.0
                                                             84.0
                                                                        96.0
   Curve FKAccuracy LongPassing BallControl Acceleration SprintSpeed
    93.0
                94.0
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                                            96.0
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    81.0
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1
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                87.0
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                                                                        90.0
                       Balance
                                 ShotPower
                                            Jumping Stamina Strength \
   Agility Reactions
      91.0
0
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                           95.0
                                       85.0
                                                68.0
                                                         72.0
                                                                    59.0
      87.0
                           70.0
                                       95.0
                                                                    79.0
1
                 96.0
                                                95.0
                                                         88.0
2
      96.0
                 94.0
                           84.0
                                       80.0
                                                         81.0
                                                                    49.0
                                                61.0
   LongShots
              Aggression Interceptions Positioning Vision
                                                                Penalties
0
        94.0
                     48.0
                                    22.0
                                                  94.0
                                                           94.0
                                                                      75.0
        93.0
                     63.0
                                    29.0
                                                  95.0
                                                          82.0
                                                                      85.0
1
2
        82.0
                     56.0
                                    36.0
                                                  89.0
                                                          87.0
                                                                      81.0
   Composure
              Marking
                       StandingTackle SlidingTackle
                                                        GKDiving
                                                                   GKHandling \
0
        96.0
                 33.0
                                  28.0
                                                  26.0
                                                              6.0
                                                                         11.0
        95.0
                                                  23.0
                 28.0
                                  31.0
                                                              7.0
                                                                         11.0
1
2
        94.0
                 27.0
                                                  33.0
                                  24.0
                                                              9.0
                                                                          9.0
              GKPositioning GKReflexes Release Clause
   GKKicking
0
        15.0
                        14.0
                                     8.0
                                                 €226.5M
        15.0
1
                        14.0
                                    11.0
                                                 €127.1M
```

```
[16]: fifa['Potential']
[16]: 0
               94
      1
               94
      2
               93
      3
               93
      4
               92
               . .
      18202
               65
      18203
               63
      18204
               67
      18205
               66
      18206
               66
      Name: Potential, Length: 18207, dtype: int64
[17]: bins=(80,90,100) #there is no data for potential levels between zero and fifty \Box
       ⇔so we display data for bins starting at around potential of 50
      plt.hist(fifa['Potential'],bins=bins,color='#fcec56')
      plt.title('The Number of Players VS Their Potential')
      plt.ylabel('Players')
      plt.xlabel('Potential')
      plt.xticks(bins)
      plt.savefig('Potential Of Fifa Players.png')
      plt.show()
```

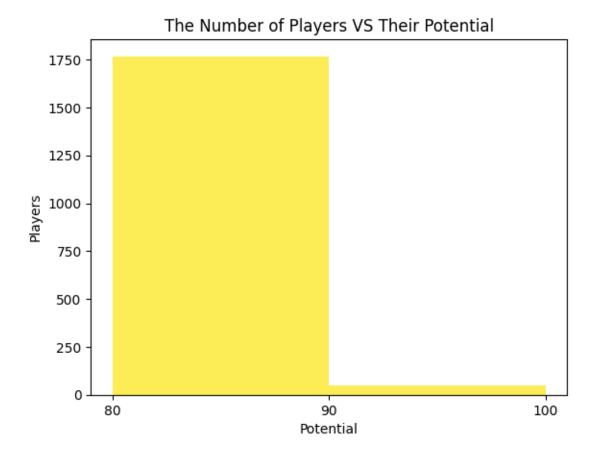
11.0

€228.1M

2

15.0

15.0



```
[18]: fifa['Preferred Foot']
[18]: 0
                Left
      1
               Right
      2
               Right
      3
               Right
      4
               Right
      18202
               Right
               Right
      18203
               Right
      18204
      18205
               Right
      18206
               Right
      Name: Preferred Foot, Length: 18207, dtype: object
[19]: fifa['Preferred Foot'].value_counts()
[19]: Right
               13948
      Left
                4211
      Name: Preferred Foot, dtype: int64
```

### 2 Pie Charts

```
left=(fifa.loc[fifa['Preferred Foot']=='Left'])
[20]:
[21]:
      left
[21]:
             Unnamed: 0
                              TD
                                                   Name
                                                         Age
                                                              \
      0
                       0
                          158023
                                               L. Messi
                                                          31
      13
                      13
                          168542
                                            David Silva
                                                          32
      15
                      15
                                             P. Dybala
                                                          24
                          211110
      17
                      17
                          194765
                                           A. Griezmann
                                                          27
      19
                      19
                          192119
                                            T. Courtois
                                                          26
      18172
                  18172
                         243636
                                             C. Hawkins
                                                          18
      18175
                  18175
                          243649
                                             E. Clarke
                                                          19
                                  J. Norville-Williams
                          245570
      18191
                  18191
                                                          18
      18200
                  18200
                          231381
                                               J. Young
                                                          18
      18201
                  18201
                                               D. Walsh
                          243413
                                                          18
                                                                        Nationality \
                                                        Photo
      0
             https://cdn.sofifa.org/players/4/19/158023.png
                                                                          Argentina
      13
             https://cdn.sofifa.org/players/4/19/168542.png
                                                                              Spain
      15
             https://cdn.sofifa.org/players/4/19/211110.png
                                                                          Argentina
      17
             https://cdn.sofifa.org/players/4/19/194765.png
                                                                             France
      19
             https://cdn.sofifa.org/players/4/19/192119.png
                                                                            Belgium
      18172
             https://cdn.sofifa.org/players/4/19/243636.png
                                                                            England
             https://cdn.sofifa.org/players/4/19/243649.png
      18175
                                                                            England
             https://cdn.sofifa.org/players/4/19/245570.png
                                                                            England
      18191
             https://cdn.sofifa.org/players/4/19/231381.png
      18200
                                                                           Scotland
      18201
             https://cdn.sofifa.org/players/4/19/243413.png
                                                               Republic of Ireland
                                                             Potential
                                             Flag
                                                    Overall
      0
             https://cdn.sofifa.org/flags/52.png
                                                         94
                                                                     94
      13
             https://cdn.sofifa.org/flags/45.png
                                                         90
                                                                     90
      15
             https://cdn.sofifa.org/flags/52.png
                                                         89
                                                                     94
      17
             https://cdn.sofifa.org/flags/18.png
                                                                     90
                                                         89
      19
              https://cdn.sofifa.org/flags/7.png
                                                         89
                                                                     90
      18172
             https://cdn.sofifa.org/flags/14.png
                                                         48
                                                                     65
             https://cdn.sofifa.org/flags/14.png
                                                                     59
      18175
                                                         48
             https://cdn.sofifa.org/flags/14.png
      18191
                                                         47
                                                                     65
             https://cdn.sofifa.org/flags/42.png
      18200
                                                         47
                                                                     62
             https://cdn.sofifa.org/flags/25.png
                                                         47
      18201
                                                                     68
                          Club
                                                                        Club Logo
      0
                 FC Barcelona
                                   https://cdn.sofifa.org/teams/2/light/241.png
```

13 15	Manchester City Juventus		•	https://cdn.sofifa.org/teams/2/light/10.png https://cdn.sofifa.org/teams/2/light/45.png						
17	Atlético	Madri	d ht	https://cdn.sofifa.org/teams/2/light/240.png						
19	Real Madrid		d ht	https://cdn.sofifa.org/teams/2/light/243.png						
•••		•••								
18172	Burton	Albio	n http	s://cdn.	sofifa.o	rg/teams/2	2/light/1501	5.png		
18175	Fleetwo		_			-	/light/11226			
18191	Cambridge	Unite		-		•	/2/light/194			
18200	Swind	on Town	n htt	https://cdn.sofifa.org/teams/2/light/1934.png						
18201	Water	ford F	C ht	https://cdn.sofifa.org/teams/2/light/753.png						
	Value	Llo mo	Cnasial	Dwafam	od Ecot	Tntownoti	ional Danuta	+ion \		
0	Value	Wage €565K	2202	Preferr		Internati	ional Reputa			
0					Left			5.0		
13		€285K	2115		Left			4.0		
15		€205K	2092		Left			3.0		
17		€145K	2246		Left			4.0		
19	€53.5M	€240K	1311		Left			4.0		
 18172	 €50K	 €1K	778	•••	Left		•••	1.0		
18175	€50K €40K	€1K €1K	1225		Left			1.0		
18191								1.0		
	€50K	€1K	1250		Left					
18200	€60K	€1K	1203		Left			1.0		
18201	€60K	€1K	1098		Left			1.0		
	Weak Foot	Skil	l Moves	Wo	rk Rate	Body Type	Real Face P	osition	\	
0	Weak Foot		l Moves	Wo Medium/		Body Type Messi	Real Face P	osition RF	\	
0 13				Medium/	Medium				\	
	4.0		4.0	Medium/ High/	Medium Medium	Messi	Yes	RF	\	
13	4.0 2.0		4.0 4.0	Medium/ High/ High/	Medium Medium Medium	Messi Normal	Yes Yes	RF LCM	\	
13 15	4.0 2.0 3.0		4.0 4.0 4.0	Medium/ High/ High/	Medium Medium Medium h/ High	Messi Normal Normal Lean	Yes Yes Yes	RF LCM LF	\	
13 15 17	4.0 2.0 3.0 3.0		4.0 4.0 4.0 4.0	Medium/ High/ High/ Hig	Medium Medium Medium h/ High	Messi Normal Normal	Yes Yes Yes Yes	RF LCM LF CAM	\	
13 15 17	4.0 2.0 3.0 3.0		4.0 4.0 4.0 4.0	Medium/ High/ High/ Hig	Medium Medium Medium h/ High Medium 	Messi Normal Normal Lean Courtois	Yes Yes Yes Yes	RF LCM LF CAM	\	
13 15 17 19	4.0 2.0 3.0 3.0 2.0		4.0 4.0 4.0 4.0 1.0	Medium/ High/ High/ Hig Medium/	Medium Medium Medium h/ High Medium  Medium	Messi Normal Normal Lean Courtois	Yes Yes Yes Yes Yes	RF LCM LF CAM GK	\	
13 15 17 19  18172	4.0 2.0 3.0 3.0 2.0 		4.0 4.0 4.0 1.0	Medium/ High/ High/ Hig Medium/ Medium/ Medium/	Medium Medium Medium h/ High Medium  Medium	Messi Normal Normal Lean Courtois  Stocky	Yes Yes Yes Yes Yes No	RF LCM LF CAM GK		
13 15 17 19  18172 18175	4.0 2.0 3.0 3.0 2.0  3.0 2.0		4.0 4.0 4.0 1.0  1.0 2.0 2.0	Medium/ High/ High/ Hig Medium/ Medium/ Medium/	Medium Medium Medium h/ High Medium Medium Medium Medium m/ High	Messi Normal Normal Lean Courtois  Stocky Lean	Yes Yes Yes Yes Yes No No	RF LCM LF CAM GK GK LB		
13 15 17 19  18172 18175 18191	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0		4.0 4.0 4.0 1.0  1.0 2.0 2.0	Medium/ High/ High/ Hig Medium/ Medium/ Medium/ Medium/	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium	Messi Normal Normal Lean Courtois  Stocky Lean Lean	Yes Yes Yes Yes Yes Wo No	RF LCM LF CAM GK LB LB	\	
13 15 17 19  18172 18175 18191 18200	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0		4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0	Medium/ High/ High/ Hig Medium/ Medium/ Medium/ Medium/ Medium/	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium	Messi Normal Normal Lean Courtois  Stocky Lean Lean	Yes Yes Yes Yes Yes Wo No	RF LCM LF CAM GK LB LB ST	\	
13 15 17 19  18172 18175 18191 18200	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0		4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0	Medium/ High/ High/ High Hig Medium/ Medium/ Medium/ Medium/ Medium/ Medium/	Medium Medium Medium h/ High Medium Medium Medium m/ High Medium Medium Medium	Messi Normal Normal Lean Courtois  Stocky Lean Lean Lean	Yes Yes Yes Yes Yes Wo No	RF LCM LF CAM GK LB LB ST RB		
13 15 17 19  18172 18175 18191 18200	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0 2.0 3.0	mber	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0	Medium/ High/ High/ High/ Hig Medium/ Medium/ Medium/ Medium/ Medium/ Medium/	Medium Medium Medium h/ High Medium Medium Medium m/ High Medium Medium Medium	Messi Normal Normal Lean Courtois Stocky Lean Lean Lean Lean Contract	Yes Yes Yes Yes Yes No No No No	RF LCM LF CAM GK LB LB ST RB		
13 15 17 19  18172 18175 18191 18200 18201	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0 2.0 3.0	mber 10.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0	Medium/ High/ High/ High/ Hig Medium/ Medium/ Medium/ Medium/ Medium/ Medium/ ined Loa 2004	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium Medium	Messi Normal Normal Lean Courtois Stocky Lean Lean Lean Contract	Yes Yes Yes Yes Yes  No	RF LCM LF CAM GK LB LB ST RB		
13 15 17 19  18172 18175 18191 18200 18201	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0 2.0 3.0	mber 10.0 21.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0 Jul 1,	Medium/ High/ High/ High/ Hig Medium/ Medium/ Medium/ Medium/ Medium/ ined Loa 2004 2010	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium Medium Medium	Messi Normal Normal Lean Courtois Stocky Lean Lean Lean Contract	Yes Yes Yes Yes Yes No No No No No Valid Until 2021	RF LCM LF CAM GK LB LB ST RB Height 5'7		
13 15 17 19  18172 18175 18191 18200 18201	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0 2.0 3.0	mber 10.0 21.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0 Jul 1, Jul 14,	Medium/ High/ High/ High/ High Medium/ Medium/ Medium/ Medium/ Medium/ Medium/ 2010	Medium Medium Medium h/ High Medium	Messi Normal Normal Lean Courtois Stocky Lean Lean Lean Contract	Yes Yes Yes Yes Yes No No No No No Valid Until 2021 2020	RF LCM LF CAM GK LB LB ST RB Height 5'7 5'8 5'10		
13 15 17 19  18172 18175 18191 18200 18201	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0 2.0 3.0	mber 10.0 21.0 21.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0 Jul 1, Jul 14,	Medium/ High/ High/ High/ High/ High/ Medium/ Medium/ Medium/ Medium/ Medium/ Medium/ 2004 2010 2015 2014	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium Medium NaN NaN	Messi Normal Normal Lean Courtois  Stocky Lean Lean Lean	Yes Yes Yes Yes Yes Yes No No No No No No No 2021 2020 2022	RF LCM LF CAM GK GK LB LB ST RB Height 5'7 5'8 5'10		
13 15 17 19  18172 18175 18191 18200 18201	4.0 2.0 3.0 3.0 2.0  3.0 2.0 3.0 2.0 3.0	mber 10.0 21.0 21.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0 Jul 1, Jul 14, Jul 14,	Medium/ High/ High/ High/ High/ High/ Medium/ Medium/ Medium/ Medium/ Medium/ Medium/ 2004 2010 2015 2014	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium Medium Medium NaN NaN NaN	Messi Normal Normal Lean Courtois  Stocky Lean Lean Lean	Yes Yes Yes Yes Yes Yes No No No No No 2021 2020 2022 2023	RF LCM LF CAM GK GK LB LB ST RB Height 5'7 5'8 5'10		
13 15 17 19  18172 18175 18191 18200 18201 0 13 15 17	4.0 2.0 3.0 3.0 2.0 3.0 2.0 3.0 Jersey Nu	mber 10.0 21.0 21.0 7.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0 Jul 1, Jul 14, Jul 1, Jul 28, Aug 9,	Medium/ High/ High/ High/ High/ High/ High/ Medium/ Medium/ Medium/ Medium/ Medium/ ined Loa 2004 2010 2015 2014 2018	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium Medium Medium Medium NaN NaN NaN	Messi Normal Normal Lean Courtois Stocky Lean Lean Lean Contract	Yes Yes Yes Yes Yes Yes No No No No No 2021 2020 2022 2023	RF LCM LF CAM GK LB LB ST RB Height 5'7 5'8 5'10 5'9 6'6		
13 15 17 19  18172 18175 18191 18200 18201 0 13 15 17 19 	4.0 2.0 3.0 3.0 2.0 3.0 2.0 3.0 Jersey Nu	mber 10.0 21.0 21.0 7.0 1.0	4.0 4.0 4.0 1.0  1.0 2.0 2.0 2.0 2.0 Jul 1, Jul 14, Jul 1, Jul 28, Aug 9, 	Medium/ High/ High/ High/ High/ High/ High/ Medium/ Medium/ Medium/ Medium/ Medium/ ined Loa 2004 2010 2015 2014 2018 2018	Medium Medium Medium h/ High Medium Medium Medium Medium Medium Medium NaN NaN NaN NaN NaN	Messi Normal Normal Lean Courtois Stocky Lean Lean Lean Contract	Yes Yes Yes Yes Yes Yes No No No No No No 2021 2020 2022 2023 2024	RF LCM LF CAM GK LB LB ST RB Height 5'7 5'8 5'10 5'9 6'6		

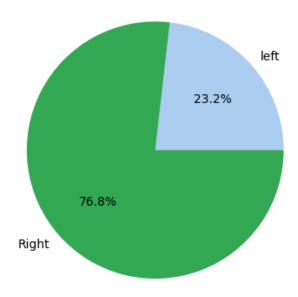
18200		1.0 Oct 17		NaN		20		
18201	2	9.0 Apr 20	, 2018	NaN		20	18 6'1	
	Weight	LS ST	RS LW	LF	CF RF	RW L	AM CAM \	
0	1591bs 88	+2 88+2 8	3+2 92+2	93+2 93	3+2 93+2	92+2 93	+2 93+2	
13	1481bs 77	+3 77+3 7	7+3 85+3	84+3 84	+3 84+3	85+3 87	+3 87+3	
15	1651bs 83	+3 83+3 83	3+3 87+3	86+3 86	3+3 86+3	87+3 87	+3 87+3	
17	1611bs 86	+3 86+3 80	6+3 87+3	87+3 87	'+3 87+3	87+3 86	+3 86+3	
19	2121bs N	aN NaN	NaN NaN	NaN N	laN NaN	NaN N	aN NaN	
 18172	 1651bs N		 NaN NaN	 NaN N	 IaN NaN	NaN N	aN NaN	
18175			7+2 40+2		3+2 38+2			
18191			9+2 43+2		)+2 40+2			
18200			5+2 44+2		5+2 45+2			
18200			2+2 29+2		)+2 45+2 )+2 30+2			
10201	100108 32	TZ 3ZTZ 3.	272 2972	30+2 30	J+2 3U+2	29+2 20	TZ ZOTZ	
	RAM LM	LCM C	M RCM	RM LWE	B LDM	CDM RDM	RWB LE	3 \
0	93+2 91+2	84+2 84+3	2 84+2 9	91+2 64+2	2 61+2	61+2 61+2	64+2 59+2	2
13	87+3 85+3	85+3 85+3	3 85+3 8	35+3 69+3	70+3	70+3 70+3	69+3 64+3	3
15	87+3 86+3	79+3 79+3	3 79+3 8	36+3 62+3	58+3	58+3 58+3	62+3 56+3	3
17	86+3 86+3	80+3 80+3	3 80+3 8	36+3 70+3	67+3	67+3 67+3	70+3 67+3	3
19	NaN NaN	NaN Na	N NaN	NaN NaN	NaN	NaN NaN	NaN NaN	J
•••								
18172	NaN NaN	NaN Na	N NaN	NaN NaN	NaN	NaN NaN	NaN NaN	J
18175	37+2 41+2	36+2 36+3	2 36+2 4	1+2 46+2	2 41+2	41+2 41+2	46+2 46+2	2
18191	41+2 43+2	40+2 40+2	2 40+2 4	13+2 45+2	2 44+2	44+2 44+2	45+2 45+2	2
18200	44+2 41+2	37+2 37+2	2 37+2 4	1+2 31+2	28+2	28+2 28+2	31+2 30+2	2
18201	28+2 30+2	30+2 30+3	2 30+2 3	30+2 39+2	38+2	38+2 38+2	39+2 42+2	2
	LCB CB			-	_	dingAccura	•	
0	47+2 47+2				05.0	70		
13	57+3 57+3				6.0	54		
15	45+3 45+3				34.0	68		
17	61+3 61+3				0.0	84		
19	NaN NaN			.0 1	4.0	13	.0	
 18172	 NaN NaN	 NaN Na	 N 13.	0	9.0	10	0	
					9.0 25.0	38		
18175	46+2 46+2							
18191 18200	47+2 47+2 27+2 27+2				26.0 17.0	39 47		
18201	46+2 46+2	46+2 42+3	2 22.	. U 2	23.0	45	.0	
	ShortPassi	ng Volleys	Dribblin	ng Curve	FKAccura	acy LongP	assing \	
0		.0 86.0	97.	-		4.0	87.0	
13		.0 82.0				7.0	87.0	
15		.0 88.0				8.0	75.0	
17		.0 87.0				8.0	76.0	

19	33.0	12	.0	13.0	19.0	2	20.0	35.0	
 10170					 12 A	1		15 0	
18172	24.0	6		14.0	13.0		1.0 2.0	15.0	
18175	29.0	21		48.0	34.0		21.0	21.0	
18191	39.0	27		45.0	29.0			41.0	
18200	42.0	37		39.0	32.0		25.0	30.0	
18201	25.0	27	.0	21.0	21.0	2	27.0	27.0	
	BallControl	Accele	ration	Sprint	Speed	Agility	Reactions	Balance	e \
0	96.0		91.0		86.0	91.0	95.0	95.0	)
13	94.0		70.0		64.0	92.0	90.0	90.0	)
15	92.0		87.0		83.0	91.0	86.0	85.0	)
17	90.0		88.0		85.0	90.0	90.0	80.0	)
19	23.0		46.0		52.0	61.0	84.0	45.0	)
•••	•••	•••		•••	•••	•••	•••		
18172	16.0		22.0		31.0	25.0	35.0	38.0	)
18175	31.0		66.0		55.0	49.0	46.0	42.0	)
18191	41.0		61.0		52.0	55.0	45.0	59.0	)
18200	41.0		65.0		48.0	64.0	54.0	80.0	)
18201	32.0		52.0		52.0		43.0		
	ShotPower Ju	umping	Stamina	Stre	ngth 1	LongShots	Aggressio	on \	
0	85.0	68.0	72.0	)	59.0	94.0	48	. 0	
13	72.0	64.0	78.0	)	52.0	75.0	57	. 0	
15	82.0	75.0	80.0	)	65.0	88.0	48	. 0	
17	80.0	90.0	83.0		62.0	82.0		. 0	
19	36.0	68.0	38.0		70.0	17.0		. 0	
•••					•••	•••			
18172	20.0	47.0	22.0		41.0	5.0	18	. 0	
18175	26.0	62.0	62.0		52.0	26.0			
18191	26.0	61.0	38.0		55.0	25.0			
18200	44.0	77.0	31.0		31.0	51.0			
18201	39.0	74.0	39.0		52.0	16.0			
	Interceptions		tioning	Visio			-	Marking	\
0	22.0		94.0	94.		75.0	96.0	33.0	
13	50.0	)	89.0	92.	0	75.0	93.0	59.0	
15	32.0		84.0	87.	0	86.0	84.0	23.0	
17	35.0	)	91.0	83.	0	79.0	87.0	59.0	
19	15.0	)	13.0	44.	0	27.0	66.0	20.0	
•••	•••				•••	•••	•••		
18172	6.0	)	5.0	30.	0	15.0	37.0	16.0	
18175	45.0	)	43.0	38.	0	39.0	30.0	45.0	
18191	55.0	)	47.0	39.	0	29.0	36.0	45.0	
18200	16.0	0	46.0	37.	0	58.0	50.0	15.0	
18201	45.0	)	20.0	31.	0	38.0	43.0	44.0	

```
0
                        28.0
                                        26.0
                                                    6.0
                                                               11.0
                                                                           15.0
                        53.0
                                        29.0
                                                    6.0
                                                               15.0
                                                                            7.0
      13
                        20.0
      15
                                        20.0
                                                    5.0
                                                                4.0
                                                                            4.0
      17
                        47.0
                                        48.0
                                                   14.0
                                                                8.0
                                                                           14.0
      19
                        18.0
                                                   85.0
                                                                           72.0
                                        16.0
                                                               91.0
                        10.0
                                        12.0
                                                   53.0
                                                               45.0
                                                                           56.0
      18172
                                                               12.0
                                                                           15.0
      18175
                        52.0
                                        49.0
                                                   9.0
      18191
                        42.0
                                        46.0
                                                   15.0
                                                               13.0
                                                                            6.0
                        17.0
      18200
                                        14.0
                                                   11.0
                                                               15.0
                                                                           12.0
      18201
                        47.0
                                        53.0
                                                    9.0
                                                               10.0
                                                                            9.0
             GKPositioning GKReflexes Release Clause
      0
                       14.0
                                     8.0
                                                €226.5M
      13
                        6.0
                                    12.0
                                                   €111M
      15
                        5.0
                                    8.0
                                                €153.5M
      17
                       13.0
                                    14.0
                                                €165.8M
      19
                       86.0
                                    88.0
                                                 €113.7M
      18172
                       49.0
                                    46.0
                                                   €119K
                       12.0
                                    7.0
      18175
                                                    €78K
      18191
                       14.0
                                    12.0
                                                   €119K
      18200
                       12.0
                                    11.0
                                                   €143K
      18201
                       11.0
                                    13.0
                                                   €153K
      [4211 rows x 89 columns]
[22]: left=(fifa.loc[fifa['Preferred Foot']=='Left']).count()[0]
[23]: left
[23]: 4211
[24]: right=(fifa.loc[fifa['Preferred Foot']=='Right']).count()[0]
[25]: right
[25]: 13948
[26]:
       left
[26]: 4211
[27]: right
[27]: 13948
```

StandingTackle SlidingTackle GKDiving GKHandling GKKicking \

# The Distribution of left-foot and Right-foot Players



## 3 Pie Chart Number Two

```
18204 1481bs
18205 1541bs
18206 1761bs
Name: Weight, L
```

Name: Weight, Length: 18207, dtype: object

```
[30]:
      fifa.head(2)
[30]:
         Unnamed: 0
                          ID
                                            Name
                                                  Age
                                                       \
                      158023
      0
                   0
                                        L. Messi
                                                    31
      1
                   1
                       20801
                              Cristiano Ronaldo
                                                    33
                                                    Photo Nationality \
         https://cdn.sofifa.org/players/4/19/158023.png
                                                             Argentina
          https://cdn.sofifa.org/players/4/19/20801.png
                                                              Portugal
                                                        Potential
                                                                              Club
                                          Flag
                                                Overall
         https://cdn.sofifa.org/flags/52.png
                                                      94
                                                                 94
                                                                     FC Barcelona
      1 https://cdn.sofifa.org/flags/38.png
                                                      94
                                                                 94
                                                                          Juventus
                                                                    Wage
                                              Club Logo
                                                                           Special
                                                            Value
         https://cdn.sofifa.org/teams/2/light/241.png
                                                          €110.5M
                                                                   €565K
                                                                              2202
          https://cdn.sofifa.org/teams/2/light/45.png
                                                                   €405K
                                                                              2228
                                                             €77M
        Preferred Foot
                         International Reputation
                                                    Weak Foot
                                                                Skill Moves
                  Left
                                                           4.0
                                                                         4.0
      0
                                               5.0
      1
                 Right
                                               5.0
                                                           4.0
                                                                         5.0
              Work Rate
                           Body Type Real Face Position
                                                           Jersey Number
                                                                                 Joined \
         Medium/ Medium
                               Messi
                                            Yes
                                                       RF
                                                                    10.0
                                                                            Jul 1, 2004
      1
              High/ Low C. Ronaldo
                                                       ST
                                                                           Jul 10, 2018
                                            Yes
                                                                     7.0
        Loaned From Contract Valid Until Height
                                                   Weight
                                                              LS
                                                                    ST
                                                                           RS
                                                                                 LW
                                      2021
                                              5'7
                                                   1591bs
                                                            88+2
      0
                 NaN
                                                                  88+2
                                                                         88+2
                                                                               92+2
      1
                NaN
                                      2022
                                              6'2
                                                   1831bs
                                                            91+3
                                                                  91+3
                                                                         91+3
           LF
                  CF
                        RF
                              R.W
                                   LAM
                                          CAM
                                                R.AM
                                                        LM
                                                             LCM
                                                                    CM
                                                                          RCM
                                                                                 RM
                                                                                     \
      0 93+2
               93+2
                      93+2
                            92+2
                                  93+2
                                         93+2
                                               93+2
                                                     91+2
                                                            84+2
                                                                  84+2
                                                                         84+2
                                                                               91+2
      1 90+3
               90+3
                            89+3
                                  88+3
                                                      88+3
                      90+3
                                         88+3
                                               88+3
                                                            81+3
                                                                  81+3
                                                                         81+3
                                                                               88+3
                       CDM
          LWB
                LDM
                             RDM
                                   RWB
                                           LB
                                                LCB
                                                        CB
                                                             RCB
                                                                    RB
                                                                         Crossing
         64+2
               61+2
                      61+2
                            61+2
                                  64+2
                                         59+2
                                               47+2
                                                      47+2
                                                            47+2
                                                                  59+2
                                                                             84.0
      1 65+3
               61+3
                      61+3
                            61+3
                                  65+3
                                         61+3
                                               53+3
                                                      53+3
                                                           53+3
                                                                  61+3
                                                                             84.0
         Finishing HeadingAccuracy ShortPassing
                                                     Volleys Dribbling
                                                                           Curve \
      0
              95.0
                                70.0
                                               90.0
                                                         86.0
                                                                    97.0
                                                                            93.0
              94.0
                                89.0
                                                         87.0
      1
                                               81.0
                                                                    88.0
                                                                            81.0
```

```
0
               94.0
                            87.0
                                          96.0
                                                        91.0
                                                                      86.0
                                                                               91.0
               76.0
                            77.0
                                          94.0
                                                        89.0
                                                                      91.0
                                                                               87.0
      1
         Reactions
                   Balance ShotPower Jumping Stamina Strength LongShots \
      0
              95.0
                       95.0
                                   85.0
                                            68.0
                                                     72.0
                                                               59.0
                                                                           94.0
              96.0
                       70.0
                                   95.0
                                            95.0
                                                     88.0
                                                               79.0
                                                                           93.0
      1
         Aggression Interceptions Positioning Vision Penalties Composure \
      0
               48.0
                              22.0
                                            94.0
                                                    94.0
                                                               75.0
                                                                           96.0
                              29.0
      1
               63.0
                                            95.0
                                                    82.0
                                                               85.0
                                                                           95.0
         Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
            33.0
                            28.0
                                            26.0
                                                       6.0
                                                                   11.0
      0
                                                                              15.0
      1
            28.0
                            31.0
                                            23.0
                                                       7.0
                                                                   11.0
                                                                              15.0
         GKPositioning GKReflexes Release Clause
      0
                  14.0
                               8.0
                                           €226.5M
      1
                  14.0
                              11.0
                                           €127.1M
[31]: fifa['Weight']
[31]: 0
               1591bs
      1
               1831bs
      2
               1501bs
      3
               1681bs
               1541bs
      18202
               1341bs
      18203
               1701bs
      18204
               1481bs
      18205
               1541bs
      18206
               1761bs
      Name: Weight, Length: 18207, dtype: object
[32]: fifa['Weight']=[x.strip('lbs') if type(x)==str else x for x in fifa['Weight']]
[33]: fifa['Weight']
[33]: 0
               159
      1
               183
      2
               150
      3
               168
               154
      18202
               134
      18203
               170
```

 ${\tt FKAccuracy \ LongPassing \ BallControl \ Acceleration \ SprintSpeed \ Agility \ \setminus \ SprintSpeed}$ 

```
148
      18204
      18205
               154
      18206
               176
      Name: Weight, Length: 18207, dtype: object
[34]: fifa['Weight'][0]
[34]: '159'
[35]: fifa['Weight']=[int(x.strip('lbs')) if type(x)==str else x for x in_

→fifa['Weight']]
[36]: fifa['Weight'][0]
[36]: 159.0
[37]: light=(fifa.loc[fifa['Weight']<125]).count()[0]
[38]: light_medium=fifa.loc[(fifa['Weight']>=125) & (fifa['Weight']<150)].count()[0]
[39]: medium=fifa.loc[(fifa['Weight']>=150) & (fifa['Weight']<175)].count()[0]
[40]: medium_heavy=fifa.loc[(fifa['Weight']>=175) & (fifa['Weight']<200)].count()[0]
[41]: heavy=fifa.loc[(fifa['Weight']>=200)].count()[0]
[42]: heavy
[42]: 369
[43]: medium_heavy
[43]: 4583
[44]: medium
[44]: 10876
[45]: light_medium
[45]: 2290
[46]: light
[46]: 41
[47]: plt.style.use('fivethirtyeight')
      weights=[light,light_medium,medium_heavy,heavy]
```

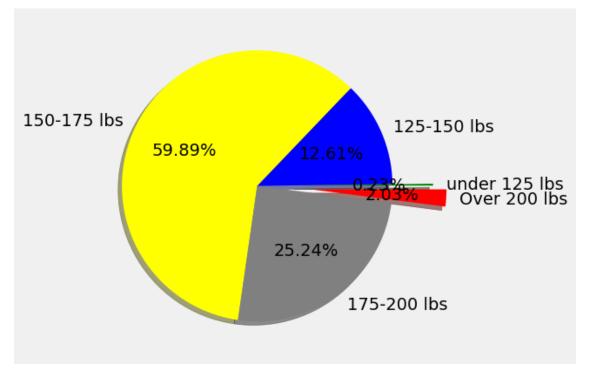
```
labels=['under 125 lbs','125-150 lbs','150-175 lbs','175-200 lbs','0ver 200_U \( \dots\) lbs']

colors=['green','blue','yellow','grey','red']

explode=[0.3,0,0,0,0,0.4]

plt.
\( \dots\) pie(weights,labels=labels,colors=colors,explode=explode,shadow=True,autopct='%0.\( \dots\) 2f%%')

plt.show()
```



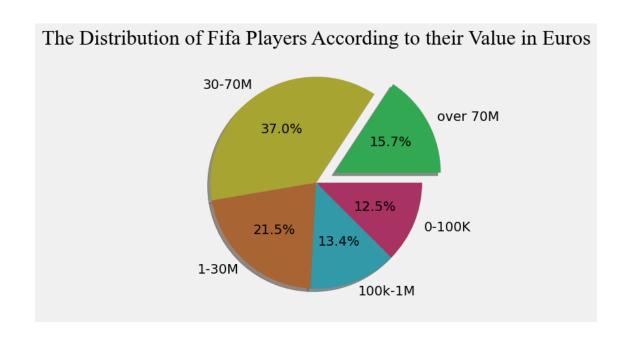
#### [48]: fifa.head(3) [48]: Unnamed: 0 Name Age \ ID 0 158023 L. Messi 31 1 20801 Cristiano Ronaldo 33 2 2 190871 Neymar Jr 26 Photo Nationality \ 0 https://cdn.sofifa.org/players/4/19/158023.png Argentina https://cdn.sofifa.org/players/4/19/20801.png Portugal

```
2 https://cdn.sofifa.org/players/4/19/190871.png
                                                           Brazil
                                    Flag
                                           Overall
                                                    Potential
   https://cdn.sofifa.org/flags/52.png
                                                94
   https://cdn.sofifa.org/flags/38.png
                                                94
                                                            94
   https://cdn.sofifa.org/flags/54.png
                                                92
                                                            93
                   Club
                                                               Club Logo
                                                                              Value \
0
                         https://cdn.sofifa.org/teams/2/light/241.png
          FC Barcelona
                                                                           €110.5M
1
               Juventus
                          https://cdn.sofifa.org/teams/2/light/45.png
                                                                               €77M
                          https://cdn.sofifa.org/teams/2/light/73.png
   Paris Saint-Germain
                                                                            €118.5M
    Wage
          Special Preferred Foot
                                    International Reputation
                                                                Weak Foot
0
   €565K
              2202
                              Left
                                                           5.0
                                                                       4.0
   €405K
              2228
                                                                       4.0
1
                             Right
                                                           5.0
   €290K
              2143
                             Right
                                                           5.0
                                                                       5.0
                      Work Rate
                                   Body Type Real Face Position
   Skill Moves
                                                                    Jersey Number
                 Medium/ Medium
                                                                              10.0
0
           4.0
                                        Messi
                                                     Yes
                                                               RF
                                  C. Ronaldo
           5.0
                      High/ Low
                                                     Yes
                                                                ST
                                                                               7.0
1
2
           5.0
                   High/ Medium
                                       Neymar
                                                    Yes
                                                               LW
                                                                              10.0
         Joined Loaned From Contract Valid Until Height
                                                                               ST
                                                             Weight
                                                                        LS
                                                        5'7
    Jul 1, 2004
                                               2021
                                                              159.0
                                                                      88+2
                                                                            88+2
0
                         NaN
   Jul 10, 2018
1
                                               2022
                                                        6'2
                                                               183.0
                                                                      91+3
                                                                            91+3
                         NaN
    Aug 3, 2017
                         NaN
                                               2022
                                                        5'9
                                                              150.0
                                                                      84+3
                                                                            84+3
     RS
           LW
                  LF
                        CF
                                           LAM
                                                 CAM
                                                        RAM
                                                               LM
                                                                     LCM
                                                                            CM
                               RF
                                     RW
                                                                                 \
                                                93+2
0
   88+2
         92+2
                93+2
                      93+2
                             93+2
                                   92+2
                                          93+2
                                                       93+2
                                                             91+2
                                                                    84+2
                                                                          84+2
   91+3
         89+3
                90+3
                      90+3
                             90+3
                                   89+3
                                          88+3
                                                88+3
                                                       88+3
                                                             88+3
                                                                    81+3
1
                                                                          81+3
   84+3
         89+3
                89+3
                      89+3
                             89+3
                                   89+3
                                          89+3
                                                89+3
                                                       89+3
                                                             88+3
                                                                    81+3
                                                                          81+3
    RCM
           RM
                 LWB
                       LDM
                              CDM
                                    RDM
                                           RWB
                                                  LB
                                                        LCB
                                                                CB
                                                                     RCB
                                                                            RB
   84+2
         91+2
                             61+2
                                   61+2
                                          64+2
                                                59+2
                                                       47+2
                                                             47+2
                                                                    47+2
                64+2
                      61+2
                                                                          59+2
                                                       53+3
                                                             53+3
                                                                    53+3
   81+3
         88+3
                65+3
                      61+3
                             61+3
                                   61+3
                                          65+3
                                                61+3
                                                                          61+3
1
   81+3
         88+3
                65+3
                      60+3
                             60+3
                                   60+3
                                          65+3
                                                60+3
                                                      47+3
                                                             47+3
                                                                    47+3
                                                                          60+3
             Finishing
                         HeadingAccuracy
                                            ShortPassing
                                                          Volleys
                                                                     Dribbling
   Crossing
0
       84.0
                   95.0
                                     70.0
                                                     90.0
                                                              86.0
                                                                          97.0
1
       84.0
                   94.0
                                     89.0
                                                    81.0
                                                              87.0
                                                                          88.0
       79.0
                   87.0
                                     62.0
                                                    84.0
                                                              84.0
                                                                          96.0
         FKAccuracy
                      LongPassing
                                     BallControl
                                                   Acceleration SprintSpeed
   Curve
0
    93.0
                 94.0
                               87.0
                                             96.0
                                                            91.0
                                                                          86.0
    81.0
                 76.0
                               77.0
                                             94.0
                                                            89.0
                                                                          91.0
1
2
    88.0
                 87.0
                               78.0
                                             95.0
                                                            94.0
                                                                          90.0
```

```
Agility Reactions Balance
                                      ShotPower
                                                  Jumping
                                                           Stamina
                                                                    Strength \
      0
            91.0
                       95.0
                                95.0
                                            85.0
                                                     68.0
                                                              72.0
                                                                        59.0
            87.0
                       96.0
                                70.0
                                            95.0
                                                     95.0
                                                              88.0
                                                                        79.0
      1
      2
            96.0
                       94.0
                                84.0
                                            80.0
                                                     61.0
                                                              81.0
                                                                        49.0
         LongShots Aggression Interceptions Positioning Vision Penalties \
      0
              94.0
                          48.0
                                          22.0
                                                       94.0
                                                               94.0
                                                                          75.0
              93.0
                          63.0
                                                       95.0
                                                                          85.0
      1
                                          29.0
                                                               82.0
      2
              82.0
                          56.0
                                                       89.0
                                          36.0
                                                               87.0
                                                                          81.0
                    Marking StandingTackle SlidingTackle GKDiving
                                                                       GKHandling \
         Composure
      0
              96.0
                       33.0
                                        28.0
                                                       26.0
                                                                  6.0
                                                                              11.0
              95.0
                       28.0
                                                       23.0
                                                                  7.0
      1
                                        31.0
                                                                              11.0
              94.0
                                       24.0
                                                                  9.0
      2
                       27.0
                                                       33.0
                                                                              9.0
         GKKicking
                   GKPositioning GKReflexes Release Clause
      0
                             14.0
                                           8.0
                                                      €226.5M
              15.0
      1
              15.0
                             14.0
                                          11.0
                                                      €127.1M
      2
              15.0
                             15.0
                                          11.0
                                                      €228.1M
[49]: df=pd.read_csv('fifa_data.csv')
      pd.set_option('display.max_columns',89)
      df.head(2)
[49]:
         Unnamed: 0
                         ID
                                          Name Age
                                                     \
      0
                  0
                    158023
                                      L. Messi
                                                  31
      1
                      20801 Cristiano Ronaldo
                                                  33
                                                   Photo Nationality \
      0 https://cdn.sofifa.org/players/4/19/158023.png
                                                           Argentina
         https://cdn.sofifa.org/players/4/19/20801.png
                                                            Portugal
                                        Flag Overall Potential
                                                                           Club \
      0 https://cdn.sofifa.org/flags/52.png
                                                    94
                                                               94
                                                                  FC Barcelona
      1 https://cdn.sofifa.org/flags/38.png
                                                    94
                                                               94
                                                                       Juventus
                                            Club Logo
                                                                        Special
                                                          Value
                                                                  Wage
      0 https://cdn.sofifa.org/teams/2/light/241.png
                                                        €110.5M
                                                                 €565K
                                                                           2202
         https://cdn.sofifa.org/teams/2/light/45.png
                                                           €77M
                                                                 €405K
                                                                           2228
        Preferred Foot International Reputation Weak Foot
                                                              Skill Moves \
      0
                  Left
                                              5.0
                                                         4.0
                                                                      4.0
      1
                 Right
                                              5.0
                                                         4.0
                                                                      5.0
              Work Rate
                          Body Type Real Face Position Jersey Number
                                                                              Joined \
```

```
O Medium/ Medium
                             Messi
                                        Yes
                                                  RF
                                                               10.0 Jul 1, 2004
             High/ Low C. Ronaldo
                                                  ST
                                                                7.0 Jul 10, 2018
     1
                                         Yes
       Loaned From Contract Valid Until Height Weight
                                                         LS
                                                               ST
     0
                                   2021
                                           5'7 1591bs 88+2 88+2
                                                                   88+2
                                                                         92+2
               NaN
                                   2022
                                           6'2 1831bs
                                                       91+3
                                                             91+3
                                                                   91+3
     1
                CF
                                 LAM
                                       CAM
                                            RAM
                                                   LM
                                                        LCM
                                                               CM
                                                                    RCM
          LF
                      RF
                            RW
                                                                           RM
                                93+2 93+2 93+2 91+2 84+2 84+2 84+2
     0 93+2 93+2 93+2
                          92+2
                                                                        91+2
                                                 88+3
     1 90+3 90+3
                    90+3
                          89+3
                                88+3
                                     88+3
                                           88+3
                                                       81+3
                                                             81+3
                                                                   81+3
                                                                         88+3
         LWB
               LDM
                     CDM
                           RDM
                                 RWB
                                        LB
                                            LCB
                                                   CB
                                                        RCB
                                                               RB
                                                                   Crossing \
                                      59+2 47+2 47+2 47+2
     0 64+2 61+2
                    61+2
                          61+2
                                64+2
                                                             59+2
                                                                       84.0
                          61+3 65+3 61+3 53+3 53+3 53+3 61+3
                                                                       84.0
     1 65+3 61+3
                    61+3
        Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
             95.0
                              70.0
                                           90.0
                                                    86.0
                                                               97.0
                                                                      93.0
     0
             94.0
                              89.0
                                                    87.0
     1
                                           81.0
                                                               88.0
                                                                      81.0
        FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
     0
              94.0
                           87.0
                                        96.0
                                                     91.0
                                                                  86.0
                                                                           91.0
                           77.0
     1
              76.0
                                        94.0
                                                     89.0
                                                                  91.0
                                                                           87.0
        Reactions Balance ShotPower Jumping Stamina Strength LongShots \
     0
             95.0
                      95.0
                                 85.0
                                          68.0
                                                  72.0
                                                            59.0
                                                                       94.0
     1
             96.0
                      70.0
                                 95.0
                                          95.0
                                                  88.0
                                                            79.0
                                                                       93.0
        Aggression Interceptions Positioning Vision Penalties Composure \
                                          94.0
                                                 94.0
     0
              48.0
                             22.0
                                                            75.0
                                                                       96.0
     1
              63.0
                             29.0
                                         95.0
                                                 82.0
                                                            85.0
                                                                       95.0
        Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
           33.0
                           28.0
                                          26.0
                                                    6.0
                                                               11.0
                                                                          15.0
     0
                           31.0
                                          23.0
                                                    7.0
                                                               11.0
     1
           28.0
                                                                          15.0
        GKPositioning GKReflexes Release Clause
     0
                 14.0
                              8.0
                                         €226.5M
     1
                 14.0
                             11.0
                                         €127.1M
 []:
[50]: very_expensive=df.loc[(df['Value']>='€70M')]
[51]: very_expensive.count()[0]
[51]: 2863
```

```
expensive=df.loc[(df['Value']>='€30M') & (df['Value']<'€70M')]
[52]:
[53]: expensive.count()[0]
[53]: 6729
     medium_expensive=df.loc[(df['Value']>='€1M') & (df['Value']<'€30M')]
[54]:
[55]: medium_expensive.count()[0]
[55]: 3909
[56]: less_expensive=df.loc[(df['Value']>='€100K') & (df['Value']<'€1M')]
[57]: less_expensive.count()[0]
[57]: 2437
[58]: |least_expensive=df.loc[(df['Value']>='€0') & (df['Value']<'€100K')]
[59]: least_expensive.count()[0]
[59]: 2269
[60]: slices=[2863,6729,3909,2437,2269]
      explode=[0.2,0,0,0,0]
      colors=['#32a852','#a8a432','#a86432','#3299a8','#a83262']
      labels=['over 70M','30-70M','1-30M','100k-1M','0-100K']
[61]: plt.pie(slices, labels=labels, explode=explode, autopct= 1%0.
       →1f\%', shadow=True, colors=colors)
      plt.title('The Distribution of Fifa Players According to their Value in ⊔
       →Euros',fontdict={'fontname':'Times New Roman','fontsize':22})
      plt.show()
```



```
[62]: #Only around 16% of the fifa players are valued at over 70 million Euros while
       →a majority of the players are valued between 30-70 million Euros. This can be
       supported by the fact that most football players live glamarous lives
[63]: df.head(2)
[63]:
        Unnamed: 0
                         ID
                                          Name
                                                Age
                                                    \
      0
                    158023
                                      L. Messi
                                                 31
      1
                      20801 Cristiano Ronaldo
                                                 33
                                                  Photo Nationality \
       https://cdn.sofifa.org/players/4/19/158023.png
                                                          Argentina
         https://cdn.sofifa.org/players/4/19/20801.png
                                                           Portugal
                                        Flag Overall Potential
                                                                          Club \
      0 https://cdn.sofifa.org/flags/52.png
                                                              94 FC Barcelona
                                                   94
      1 https://cdn.sofifa.org/flags/38.png
                                                   94
                                                              94
                                                                      Juventus
                                            Club Logo
                                                                       Special
                                                         Value
                                                                 Wage
      0 https://cdn.sofifa.org/teams/2/light/241.png
                                                       €110.5M
                                                                €565K
                                                                          2202
         https://cdn.sofifa.org/teams/2/light/45.png
                                                                          2228
                                                          €77M
                                                                €405K
       Preferred Foot International Reputation Weak Foot
                                                             Skill Moves
      0
                 Left
                                             5.0
                                                        4.0
                                                                     4.0
      1
                Right
                                             5.0
                                                        4.0
                                                                     5.0
                        Body Type Real Face Position Jersey Number
                                                                             Joined \
             Work Rate
```

```
O Medium/ Medium
                        Messi
                                       Yes
                                                RF
                                                            10.0 Jul 1, 2004
             High/ Low C. Ronaldo
                                                 ST
                                                              7.0 Jul 10, 2018
                                       Yes
       Loaned From Contract Valid Until Height Weight
                                                       LS
                                                             ST
     0
                                  2021
                                         5'7 1591bs 88+2 88+2
                                                                 88+2
                                  2022
               NaN
                                         6'2 1831bs 91+3 91+3
                                                                 91+3
     1
                CF
                     RF
                                LAM
                                      CAM
                                           RAM
                                                  LM
                                                       LCM
                                                             CM
                                                                  RCM
          LF
                           RW
                                                                         RM
                               93+2 93+2 93+2 91+2 84+2 84+2 84+2 91+2
     0 93+2 93+2 93+2
                         92+2
     1 90+3 90+3
                   90+3
                         89+3
                               88+3 88+3 88+3 81+3
                                                           81+3
                                                                 81+3
                                                                       88+3
         LWB
               LDM
                    CDM
                          RDM
                                RWB
                                       LB
                                           LCB
                                                  CB
                                                       RCB
                                                             RB
                                                                Crossing \
     0 64+2 61+2
                                    59+2 47+2 47+2 47+2 59+2
                   61+2
                         61+2
                              64+2
                                                                     84.0
     1 65+3 61+3
                         61+3 65+3 61+3 53+3 53+3 53+3 61+3
                                                                     84.0
                   61+3
        Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
                             70.0
                                          90.0
                                                   86.0
     0
             95.0
                                                              97.0
                                                                    93.0
             94.0
                             89.0
                                                   87.0
     1
                                          81.0
                                                             88.0
                                                                    81.0
        FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
              94.0
                          87.0
                                       96.0
                                                    91.0
                                                                86.0
                                                                         91.0
                          77.0
                                       94.0
     1
              76.0
                                                    89.0
                                                                91.0
                                                                         87.0
        Reactions Balance ShotPower Jumping Stamina Strength LongShots \
     0
             95.0
                     95.0
                                85.0
                                        68.0
                                                 72.0
                                                           59.0
                                                                     94.0
     1
             96.0
                     70.0
                                95.0
                                         95.0
                                                 88.0
                                                           79.0
                                                                     93.0
        Aggression Interceptions Positioning Vision Penalties Composure \
                                         94.0
                                                94.0
     0
              48.0
                            22.0
                                                           75.0
                                                                     96.0
                            29.0
                                                                     95.0
     1
              63.0
                                        95.0
                                                82.0
                                                           85.0
        Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
           33.0
                          28.0
                                        26.0
                                                   6.0
                                                             11.0
                                                                        15.0
     0
                          31.0
                                        23.0
                                                   7.0
                                                              11.0
     1
           28.0
                                                                        15.0
        GKPositioning GKReflexes Release Clause
     0
                 14.0
                             8.0
                                       €226.5M
     1
                 14.0
                            11.0
                                       €127.1M
[64]: df['Finishing']
[64]: 0
              95.0
              94.0
     1
              87.0
     2
     3
              13.0
     4
              82.0
```

```
18202 38.0

18203 52.0

18204 40.0

18205 50.0

18206 34.0

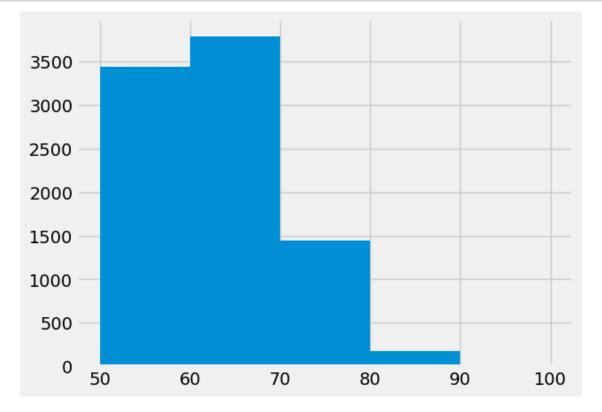
Name: Finishing, Length: 18207, dtype: float64
```

```
[65]: bins=[50,60,70,80,90,100]

plt.hist(df['Finishing'],bins=bins)

plt.xticks(bins)

plt.show()
```



```
[66]: #From the plots above, there are only 11 people with a 90 to 100% finishing.
        \rightarrowaccuracy
[67]: df.head(2)
[67]:
         Unnamed: 0
                          ID
                                            Name
                                                   Age \
      0
                   0
                     158023
                                        L. Messi
                                                    31
      1
                       20801 Cristiano Ronaldo
                                                    33
```

```
Photo Nationality \
0 https://cdn.sofifa.org/players/4/19/158023.png
                                                      Argentina
    https://cdn.sofifa.org/players/4/19/20801.png
                                                       Portugal
                                   Flag Overall
                                                  Potential
                                                                       Club
0 https://cdn.sofifa.org/flags/52.png
                                               94
                                                           94
                                                               FC Barcelona
1 https://cdn.sofifa.org/flags/38.png
                                               94
                                                           94
                                                                   Juventus
                                       Club Logo
                                                                    Special
                                                     Value
                                                              Wage
0 https://cdn.sofifa.org/teams/2/light/241.png
                                                             €565K
                                                                       2202
                                                   €110.5M
   https://cdn.sofifa.org/teams/2/light/45.png
                                                      €77M
                                                             €405K
                                                                       2228
  Preferred Foot
                  International Reputation Weak Foot
                                                         Skill Moves
                                                                  4.0
0
            Left
                                         5.0
                                                    4.0
                                         5.0
1
           Right
                                                    4.0
                                                                  5.0
        Work Rate
                     Body Type Real Face Position
                                                    Jersey Number
   Medium/ Medium
                         Messi
                                      Yes
                                                RF
                                                              10.0
                                                                     Jul 1, 2004
        High/ Low C. Ronaldo
                                      Yes
                                                ST
                                                               7.0
                                                                    Jul 10, 2018
 Loaned From Contract Valid Until Height Weight
                                                                    RS
                                                       LS
                                                              ST
                                                                          LW
0
                               2021
                                       5'7
                                             1591bs
                                                     88+2
                                                            88+2
                                                                  88+2
                                                                        92+2
          NaN
                               2022
                                        6'2
                                             1831bs
                                                     91+3
                                                            91+3
                                                                  91+3
                                                                        89+3
1
          NaN
     LF
           CF
                 RF
                        RW
                             LAM
                                   CAM
                                          RAM
                                                 LM
                                                      LCM
                                                              CM
                                                                   RCM
                                                                          RM
                                        93+2
                                               91+2
                                                     84+2
   93+2
         93+2
               93+2
                      92+2
                            93+2
                                  93+2
                                                            84+2
                                                                  84+2
   90+3
         90+3
               90+3
                      89+3
                            88+3
                                  88+3
                                        88+3
                                               88+3
                                                     81+3
                                                            81+3
    LWB
          LDM
                CDM
                      RDM
                                          LCB
                                                 СВ
                             RWB
                                    LB
                                                      RCB
                                                              RB
                                                                  Crossing
   64+2
         61+2
               61+2
                      61+2
                            64+2
                                  59+2
                                        47+2
                                               47+2
                                                     47+2
                                                                      84.0
                                                            59+2
        61+3
                      61+3
                            65+3
                                  61+3
                                        53+3
                                              53+3
                                                     53+3
                                                            61+3
                                                                      84.0
   65+3
               61+3
   Finishing
              HeadingAccuracy
                                ShortPassing
                                               Volleys
                                                        Dribbling
0
        95.0
                          70.0
                                         90.0
                                                  86.0
                                                              97.0
                                                                     93.0
1
        94.0
                          89.0
                                         81.0
                                                  87.0
                                                              88.0
                                                                     81.0
               LongPassing BallControl Acceleration
                                                         SprintSpeed Agility
   FKAccuracy
0
         94.0
                       87.0
                                    96.0
                                                   91.0
                                                                 86.0
                                                                          91.0
1
         76.0
                       77.0
                                    94.0
                                                   89.0
                                                                 91.0
                                                                          87.0
   Reactions
              Balance
                        ShotPower
                                   Jumping
                                             Stamina
                                                      Strength LongShots \
0
        95.0
                 95.0
                             85.0
                                       68.0
                                                72.0
                                                           59.0
                                                                      94.0
1
        96.0
                 70.0
                             95.0
                                      95.0
                                                88.0
                                                           79.0
                                                                      93.0
   Aggression
              Interceptions Positioning
                                             Vision Penalties
                                                                 Composure
0
         48.0
                         22.0
                                       94.0
                                               94.0
                                                           75.0
                                                                      96.0
```

```
1
               63.0
                               29.0
                                            95.0
                                                    82.0
                                                                85.0
                                                                           95.0
         Marking StandingTackle SlidingTackle
                                                  GKDiving
                                                            GKHandling
                                                                         GKKicking \
            33.0
                            28.0
                                                       6.0
                                                                   11.0
      0
                                            26.0
                                                                              15.0
      1
            28.0
                            31.0
                                            23.0
                                                       7.0
                                                                   11.0
                                                                              15.0
                        GKReflexes Release Clause
         GKPositioning
                  14.0
                                           €226.5M
      0
                               8.0
                  14.0
      1
                               11.0
                                           €127.1M
[68]: df['Contract Valid Until']
[68]: 0
               2021
               2022
      1
      2
               2022
      3
               2020
      4
               2023
      18202
               2019
      18203
               2020
               2021
      18204
      18205
               2019
      18206
               2019
      Name: Contract Valid Until, Length: 18207, dtype: object
[69]: df.rename(columns={'Contract Valid Until':'Contract Valid Until'},inplace=True)
[70]:
     df.head(2)
         Unnamed: 0
[70]:
                         ID
                                           Name
                                                 Age \
      0
                  0
                     158023
                                       L. Messi
                                                  31
      1
                  1
                      20801 Cristiano Ronaldo
                                                  33
                                                   Photo Nationality \
      0 https://cdn.sofifa.org/players/4/19/158023.png
          https://cdn.sofifa.org/players/4/19/20801.png
                                                            Portugal
                                              Overall Potential
                                                                            Club \
                                         Flag
      0 https://cdn.sofifa.org/flags/52.png
                                                    94
                                                                94
                                                                   FC Barcelona
      1 https://cdn.sofifa.org/flags/38.png
                                                    94
                                                                94
                                                                        Juventus
                                             Club Logo
                                                                         Special
                                                          Value
                                                                   Wage
      0 https://cdn.sofifa.org/teams/2/light/241.png
                                                                            2202
                                                        €110.5M
                                                                  €565K
          https://cdn.sofifa.org/teams/2/light/45.png
                                                                  €405K
                                                                            2228
                                                           €77M
        Preferred Foot International Reputation Weak Foot
                                                              Skill Moves
                  Left
                                                         4.0
                                                                       4.0
      0
                                              5.0
```

```
5.0 4.0 5.0
     1
               Right
            Work Rate Body Type Real Face Position Jersey Number Joined \
                                                           10.0 Jul 1, 2004
                           Messi
                                      Yes
                                                RF
     O Medium/ Medium
     1
            High/ Low C. Ronaldo
                                      Yes
                                                ST
                                                            7.0 Jul 10, 2018
       Loaned From Contract Valid Until Height Weight
                                                            ST
                                                    LS
                                                                 RS
                                 2021
                                        5'7 1591bs 88+2 88+2
     0
              NaN
                                                               88+2
                                                                     92+2
                                        6'2 1831bs 91+3 91+3
              NaN
                                 2022
     1
                                                               91+3 89+3
               CF
                               LAM
                                     CAM
                                          RAM
                                                LM
                                                     LCM
                                                            CM
                                                                RCM
                     RF
                          RW
                              93+2 93+2 93+2 91+2 84+2 84+2 84+2 91+2
     0 93+2 93+2 93+2
                        92+2
     1 90+3 90+3 90+3
                        89+3
                              88+3 88+3 88+3 88+3 81+3 81+3 81+3 88+3
         LWB
              LDM
                    CDM
                         RDM
                               RWB
                                      LB
                                         LCB
                                                 CB
                                                     RCB
                                                            RB
                                                              Crossing \
     0 64+2 61+2 61+2
                        61+2 64+2 59+2 47+2 47+2 47+2 59+2
                                                                   84.0
                        61+3 65+3 61+3 53+3 53+3 53+3 61+3
     1 65+3 61+3 61+3
                                                                   84.0
        Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
            95.0
                            70.0
                                         90.0
                                                  86.0
                                                            97.0
     0
                                                                  93.0
            94.0
                            89.0
     1
                                         81.0
                                                  87.0
                                                            88.0
                                                                  81.0
        FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
                         87.0
                                      96.0
                                                              86.0
             94.0
                                                  91.0
     1
             76.0
                         77.0
                                      94.0
                                                  89.0
                                                              91.0
                                                                       87.0
        Reactions Balance ShotPower Jumping Stamina Strength LongShots \
     0
            95.0
                     95.0
                               85.0
                                       68.0
                                                72.0
                                                         59.0
                                                                   94.0
            96.0
                     70.0
                               95.0
                                       95.0
                                                88.0
                                                         79.0
                                                                   93.0
     1
        Aggression Interceptions Positioning Vision Penalties Composure \
             48.0
                           22.0
                                       94.0
                                              94.0
                                                         75.0
                                                                   96.0
     1
             63.0
                           29.0
                                       95.0
                                               82.0
                                                         85.0
                                                                   95.0
        Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
     0
           33.0
                         28.0
                                       26.0
                                                  6.0
                                                            11.0
                                                                      15.0
     1
          28.0
                         31.0
                                       23.0
                                                 7.0
                                                            11.0
                                                                      15.0
        GKPositioning GKReflexes Release Clause
     0
                14.0
                            8.0
                                     €226.5M
     1
                14.0
                           11.0
                                      €127.1M
[71]: df.shape
[71]: (18207, 89)
[72]: df['Contract Valid Until']
```

```
[72]: 0
               2021
               2022
      1
      2
               2022
      3
               2020
      4
               2023
      18202
               2019
      18203
               2020
      18204
               2021
      18205
               2019
      18206
               2019
      Name: Contract Valid Until, Length: 18207, dtype: object
[73]:
     years=df['Contract Valid Until'].unique()
[74]:
      years
[74]: array(['2021', '2022', '2020', '2023', '2019', '2024', 'Jun 30, 2019',
             '2025', '2026', 'Dec 31, 2018', '2018', nan, 'May 31, 2020',
             'Jun 30, 2020', 'May 31, 2019', 'Dec 31, 2019', 'Jan 1, 2019',
             'Jun 1, 2019', 'Jan 4, 2019', 'Jan 31, 2019', 'Jan 7, 2019',
             'Jan 2, 2019', 'Jan 6, 2019', 'Oct 14, 2019', 'Jan 3, 2019',
             'May 4, 2019', 'Jan 12, 2019', 'Jan 25, 2019', 'Jan 18, 2019',
             'Dec 1, 2019', 'Nov 30, 2018', 'Feb 27, 2020', 'Jan 5, 2019',
             'Jan 15, 2019', 'Jan 30, 2019', 'Jan 11, 2019', 'Jan 20, 2019'],
            dtype=object)
[75]:
     df.head(2)
[75]:
         Unnamed: 0
                                                 Age \
                         ID
                                           Name
      0
                     158023
                                       L. Messi
                                                  31
      1
                      20801
                                                  33
                  1
                             Cristiano Ronaldo
                                                   Photo Nationality \
      0 https://cdn.sofifa.org/players/4/19/158023.png
                                                           Argentina
         https://cdn.sofifa.org/players/4/19/20801.png
                                                            Portugal
                                                                            Club
                                         Flag
                                               Overall
                                                        Potential
      0 https://cdn.sofifa.org/flags/52.png
                                                    94
                                                               94
                                                                   FC Barcelona
      1 https://cdn.sofifa.org/flags/38.png
                                                               94
                                                    94
                                                                        Juventus
                                             Club Logo
                                                                         Special
                                                          Value
                                                                  Wage
       https://cdn.sofifa.org/teams/2/light/241.png
                                                                            2202
                                                        €110.5M
                                                                 €565K
          https://cdn.sofifa.org/teams/2/light/45.png
                                                                            2228
                                                           €77M
                                                                 €405K
        Preferred Foot International Reputation Weak Foot
                                                              Skill Moves
      0
                  Left
                                              5.0
                                                         4.0
                                                                       4.0
```

```
5.0 4.0 5.0
     1
              Right
            Work Rate Body Type Real Face Position Jersey Number Joined \
                                                          10.0 Jul 1, 2004
                           Messi
                                      Yes
                                                RF
     O Medium/ Medium
     1
            High/ Low C. Ronaldo
                                      Yes
                                                ST
                                                            7.0 Jul 10, 2018
       Loaned From Contract Valid Until Height Weight
                                                            ST
                                                    LS
                                                                 RS
                                 2021
                                        5'7 1591bs 88+2 88+2
                                                               88+2
     0
              NaN
                                                                     92+2
                                        6'2 1831bs 91+3 91+3
              NaN
                                 2022
     1
                                                               91+3 89+3
               CF
                                          RAM
                     RF
                               LAM
                                    CAM
                                                LM
                                                     LCM
                                                            CM
                                                                RCM
                          RW
                              93+2 93+2 93+2 91+2 84+2 84+2 84+2 91+2
     0 93+2 93+2 93+2
                        92+2
     1 90+3 90+3 90+3
                        89+3
                              88+3 88+3 88+3 81+3 81+3 81+3 88+3
         LWB
              LDM
                    CDM
                         RDM
                               RWB
                                     LB
                                         LCB
                                                 CB
                                                     RCB
                                                            RB
                                                              Crossing \
     0 64+2 61+2 61+2
                        61+2 64+2 59+2 47+2 47+2 47+2 59+2
                                                                   84.0
                        61+3 65+3 61+3 53+3 53+3 53+3 61+3
     1 65+3 61+3 61+3
                                                                   84.0
        Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
            95.0
                            70.0
                                         90.0
                                                  86.0
                                                            97.0
     0
                                                                  93.0
            94.0
                            89.0
     1
                                         81.0
                                                 87.0
                                                            88.0
                                                                  81.0
        FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
                         87.0
                                     96.0
                                                              86.0
             94.0
                                                  91.0
     1
             76.0
                         77.0
                                     94.0
                                                  89.0
                                                              91.0
                                                                       87.0
        Reactions Balance ShotPower Jumping Stamina Strength LongShots \
     0
            95.0
                     95.0
                               85.0
                                       68.0
                                                72.0
                                                         59.0
                                                                   94.0
            96.0
                     70.0
                               95.0
                                       95.0
                                                88.0
                                                         79.0
                                                                   93.0
     1
        Aggression Interceptions Positioning Vision Penalties Composure \
     0
             48.0
                           22.0
                                       94.0
                                              94.0
                                                         75.0
                                                                   96.0
     1
             63.0
                           29.0
                                       95.0
                                               82.0
                                                         85.0
                                                                   95.0
        Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
     0
           33.0
                         28.0
                                       26.0
                                                 6.0
                                                           11.0
                                                                      15.0
     1
          28.0
                         31.0
                                       23.0
                                                 7.0
                                                           11.0
                                                                      15.0
        GKPositioning GKReflexes Release Clause
     0
                14.0
                            8.0
                                    €226.5M
     1
                14.0
                           11.0
                                     €127.1M
[76]: df['Contract Valid Until']
[76]: 0
             2021
```

2022

1

```
18202
               2019
      18203
               2020
      18204
               2021
      18205
               2019
      18206
               2019
      Name: Contract Valid Until, Length: 18207, dtype: object
      df.head(70)
[77]:
[77]:
          Unnamed: 0
                           ID
                                             Name
                                                    Age
                                                         \
      0
                    0
                       158023
                                         L. Messi
                                                     31
      1
                    1
                        20801
                               Cristiano Ronaldo
                                                     33
      2
                    2
                       190871
                                        Neymar Jr
                                                     26
      3
                    3
                       193080
                                           De Gea
                                                     27
      4
                       192985
                                     K. De Bruyne
                                                     27
                        •••
                                          •••
      . .
                       190483
      65
                   65
                                    Douglas Costa
                                                     27
      66
                       189596
                                        T. Müller
                                                     28
                   66
      67
                   67
                       189509
                                           Thiago
                                                     27
      68
                   68
                       188350
                                          M. Reus
                                                     29
      69
                   69
                       184432
                                      Azpilicueta
                                                     28
                                                      Photo Nationality
      0
          https://cdn.sofifa.org/players/4/19/158023.png
                                                              Argentina
      1
           https://cdn.sofifa.org/players/4/19/20801.png
                                                               Portugal
      2
          https://cdn.sofifa.org/players/4/19/190871.png
                                                                  Brazil
          https://cdn.sofifa.org/players/4/19/193080.png
      3
                                                                   Spain
          https://cdn.sofifa.org/players/4/19/192985.png
      4
                                                                Belgium
      . .
          https://cdn.sofifa.org/players/4/19/190483.png
      65
                                                                  Brazil
      66
          https://cdn.sofifa.org/players/4/19/189596.png
                                                                Germany
          https://cdn.sofifa.org/players/4/19/189509.png
      67
                                                                   Spain
      68
          https://cdn.sofifa.org/players/4/19/188350.png
                                                                 Germany
      69
          https://cdn.sofifa.org/players/4/19/184432.png
                                                                   Spain
                                           Flag
                                                  Overall
                                                           Potential
      0
          https://cdn.sofifa.org/flags/52.png
                                                       94
                                                                   94
      1
          https://cdn.sofifa.org/flags/38.png
                                                       94
                                                                   94
      2
          https://cdn.sofifa.org/flags/54.png
                                                       92
                                                                   93
          https://cdn.sofifa.org/flags/45.png
      3
                                                       91
                                                                   93
      4
           https://cdn.sofifa.org/flags/7.png
                                                       91
                                                                   92
          https://cdn.sofifa.org/flags/54.png
                                                       86
                                                                   86
      65
          https://cdn.sofifa.org/flags/21.png
                                                       86
                                                                   86
```

```
67
    https://cdn.sofifa.org/flags/45.png
                                                 86
                                                             86
    https://cdn.sofifa.org/flags/21.png
68
                                                 86
                                                             86
    https://cdn.sofifa.org/flags/45.png
                                                 86
                                                             86
                    Club
                                                                 Club Logo
0
           FC Barcelona
                           https://cdn.sofifa.org/teams/2/light/241.png
1
                            https://cdn.sofifa.org/teams/2/light/45.png
                Juventus
2
                            https://cdn.sofifa.org/teams/2/light/73.png
    Paris Saint-Germain
      Manchester United
3
                            https://cdn.sofifa.org/teams/2/light/11.png
        Manchester City
                            https://cdn.sofifa.org/teams/2/light/10.png
4
                Juventus
                            https://cdn.sofifa.org/teams/2/light/45.png
65
66
      FC Bayern München
                            https://cdn.sofifa.org/teams/2/light/21.png
67
      FC Bayern München
                            https://cdn.sofifa.org/teams/2/light/21.png
      Borussia Dortmund
                            https://cdn.sofifa.org/teams/2/light/22.png
68
                 Chelsea
69
                             https://cdn.sofifa.org/teams/2/light/5.png
      Value
               Wage
                     Special Preferred Foot
                                               International Reputation
                         2202
0
    €110.5M
              €565K
                                         Left
                                                                      5.0
1
       €77M
             €405K
                        2228
                                        Right
                                                                      5.0
2
    €118.5M
             €290K
                        2143
                                        Right
                                                                      5.0
3
                                       Right
       €72M
             €260K
                         1471
                                                                      4.0
4
      €102M
                        2281
                                        Right
                                                                      4.0
             €355K
. .
65
     €46.5M
                                        Left
                                                                      3.0
             €175K
                        2111
66
       €45M
             €135K
                        2097
                                       Right
                                                                      4.0
     €45.5M
                        2190
67
             €130K
                                       Right
                                                                      3.0
     €43.5M
                                       Right
                                                                      4.0
68
             €100K
                        2172
69
       €35M
             €175K
                         2114
                                        Right
                                                                      3.0
    Weak Foot
                Skill Moves
                                   Work Rate
                                                Body Type Real Face Position
0
          4.0
                        4.0
                              Medium/ Medium
                                                     Messi
                                                                  Yes
                                                                             RF
1
          4.0
                        5.0
                                   High/ Low
                                               C. Ronaldo
                                                                  Yes
                                                                             ST
2
          5.0
                        5.0
                                High/ Medium
                                                    Neymar
                                                                  Yes
                                                                             LW
3
          3.0
                         1.0
                              Medium/ Medium
                                                                            GK
                                                      Lean
                                                                  Yes
4
          5.0
                         4.0
                                  High/ High
                                                    Normal
                                                                  Yes
                                                                           RCM
          3.0
                        5.0
                                High/ Medium
                                                                            LM
65
                                                    Normal
                                                                  Yes
66
          4.0
                        3.0
                                  High/ High
                                                      Lean
                                                                  Yes
                                                                           CAM
          3.0
                              Medium/ Medium
                                                    Normal
                                                                  Yes
67
                        5.0
                                                                             CM
          4.0
                                High/ Medium
68
                        4.0
                                                      Lean
                                                                  Yes
                                                                             LM
69
          3.0
                        2.0
                              Medium/ Medium
                                                    Normal
                                                                  Yes
                                                                            RB
    Jersey Number
                           Joined Loaned From Contract Valid Until Height
                                                                         5'7
0
              10.0
                     Jul 1, 2004
                                           NaN
                                                                 2021
              7.0
                    Jul 10, 2018
                                                                 2022
                                                                         6'2
1
                                           NaN
2
              10.0
                     Aug 3, 2017
                                           NaN
                                                                 2022
                                                                         5'9
```

```
3
               1.0
                      Jul 1, 2011
                                            NaN
                                                                  2020
                                                                           6'4
                     Aug 30, 2015
                                            NaN
                                                                  2023
                                                                          5'11
4
               7.0
               •••
                      Jul 1, 2018
              11.0
                                                                  2022
                                                                           5'8
65
                                            NaN
66
              13.0
                    Aug 10, 2008
                                            NaN
                                                                  2021
                                                                           6'1
                     Jul 14, 2013
                                            NaN
                                                                  2021
67
              19.0
                                                                           5'9
              11.0
                      Jul 1, 2012
                                            NaN
                                                                  2023
                                                                          5'11
68
                     Aug 24, 2012
                                                                          5'10
69
              14.0
                                            NaN
                                                                  2022
    Weight
                                   LW
                                         LF
                                                CF
                                                       RF
                                                             RW
                                                                   LAM
                                                                          CAM
                                                                                RAM
               LS
                      ST
                            RS
    1591bs
                                 92+2
                                       93+2
                                              93+2
                                                     93+2
                                                           92+2
                                                                  93+2
                                                                         93+2
                                                                               93+2
0
             88+2
                   88+2
                          88+2
1
    1831bs
             91+3
                   91+3
                          91+3
                                 89+3
                                       90+3
                                              90+3
                                                     90+3
                                                           89+3
                                                                  88+3
                                                                         88+3
                                                                               88+3
2
    1501bs
             84+3
                   84+3
                          84+3
                                 89+3
                                       89+3
                                              89+3
                                                     89+3
                                                           89+3
                                                                  89+3
                                                                        89+3
                                                                               89+3
3
    1681bs
              NaN
                    NaN
                           NaN
                                  NaN
                                        NaN
                                               NaN
                                                      NaN
                                                            NaN
                                                                   NaN
                                                                          NaN
                                                                                NaN
4
    1541bs
            82+3
                                 87+3
                                       87+3
                                              87+3
                                                    87+3
                                                           87+3
                                                                  88+3
                                                                        88+3
                   82+3
                          82+3
                                                                               88+3
. .
                                                           85+3
                                                                  84+3
                                                                        84+3
    1541bs
             77+3
                   77+3
                          77+3
                                 85+3
                                       83+3
                                              83+3
                                                     83+3
                                                                               84+3
65
    1651bs
             82+3
                          82+3
                                 81+3
                                       82+3
                                              82+3
                                                     82+3
                                                           81+3
                                                                  82+3
                                                                        82+3
                                                                               82+3
66
                   82+3
                                                           82+3
                                                                  84+3
67
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	Volleys	Dribbling	Curve	FKAccu	ıracy	LongPas	sing	BallContro	1 \	
0	86.0	97.0	93.0		94.0		87.0	96.	0	
1	87.0	88.0	81.0		76.0		77.0	94.	0	
2	84.0	96.0	88.0		87.0		78.0	95.	0	
3	13.0	18.0	21.0		19.0		51.0	42.	0	
4	82.0	86.0	85.0		83.0		91.0	91.	0	
	•••	•••	•••	•••			•••			
65	76.0	92.0	84.0		78.0		68.0	91.	0	
66	84.0	75.0	81.0		59.0		72.0	82.	0	
67	90.0	90.0	85.0		77.0		87.0	90.	0	
68	90.0	87.0	89.0		84.0		75.0	86.	0	
69	51.0	69.0	68.0		58.0		80.0	77.	0	
	Accelerat	ion Chri	n+Cnood	∧~ili+	Doo	stions	Dalan	ce ShotPo	wer \	
0		1011 Spri 1.0	ntSpeed 86.0	91.	•	95.0			35.0	
		9.0	91.0	91. 87.		96.0			95.0	
1 2		9.0	90.0	96.		94.0			30.0	
3		57.0	58.0	90. 60.		90.0			31.0	
3 4		8.0	76.0	79.		91.0			91.0	
			70.0						71.0	
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66			75.0						36.0	
67				75.0 90.0		91.0 72.0 84.0 86.0			78.0 75.0	
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69				86.		87.0 81.0 88.0 73.0			88.0	
09	,	6.0	76.0	72.	U	00.0	73	0.0	88.0	
	Jumping	Stamina	Strength	LongS	Shots	Aggress	sion I	nterception	ons \	
0	68.0	72.0	59.0	_	94.0		8.0	_	2.0	
1	95.0	88.0	79.0		93.0		3.0		0.0	
2	61.0	81.0	49.0		82.0		6.0		6.0	
3	67.0	43.0	64.0		12.0		88.0		0.0	
4	63.0	90.0	75.0		91.0		6.0		.0	
	•••	•••	•••	•••			•••			
65	61.0	78.0	63.0		80.0	5	55.0	48	3.0	
66	81.0	87.0	68.0		80.0	5	7.0	58	3.0	
67	75.0	75.0	59.0		79.0	5	7.0	78	3.0	
68	70.0	73.0	67.0		86.0	4	9.0	50	0.0	
69	76.0	87.0	71.0		60.0	8	32.0	89	0.0	
	Positioni	ng Visio	n Penal	tion (	Composu	ıro Mər	king	StandingTa	ckl o	\
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       66
                  €74.3M
       67
                  €75.1M
       68
                    €74M
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                  €64.8M
       [70 rows x 89 columns]
[78]: df['Height'].unique()
[78]: array(["5'7", "6'2", "5'9", "6'4", "5'11", "5'8", "6'0", "5'6", "5'10",
              "6'6", "6'1", "5'4", "6'3", "5'5", "6'5", "6'7", "5'3", "5'2",
              "6'8", "5'1", "6'9", nan], dtype=object)
[103]: from collections import Counter
       import os
       import pandas as pd
       import numpy as np
       import csv
```

76.0

84.0

77.0

84.0

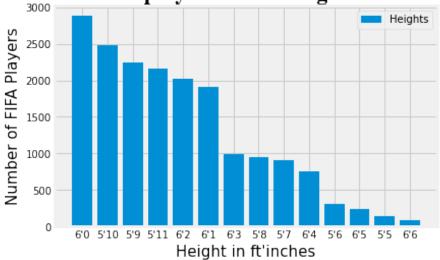
45.0

38.0

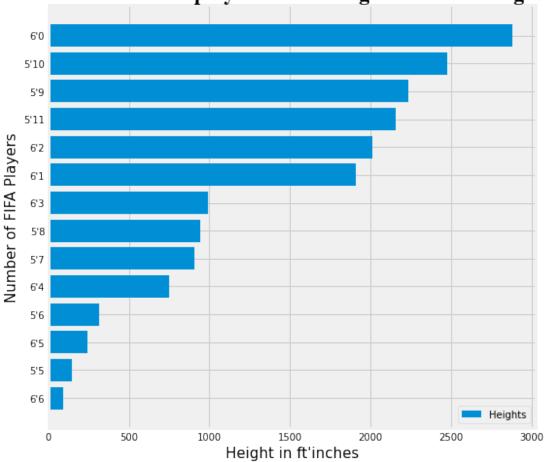
```
[104]: os.chdir('C:\\Users\\malowa\\Desktop\\R work\\matplotlib_tutorial-master')
       with open('fifa_data.csv',errors='ignore') as csv_file: #it worked from_
        \hookrightarrow stackoverflow
           csv reader = csv.DictReader(csv file)
           height_counter=Counter()
           for row in csv_reader:
               height_counter.update(row['Height'].split(';'))
       print(height_counter)
      Counter({"6'0": 2881, "5'10": 2479, "5'9": 2238, "5'11": 2159, "6'2": 2015,
      "6'1": 1908, "6'3": 990, "5'8": 946, "5'7": 905, "6'4": 749, "5'6": 316, "6'5":
      246, "5'5": 145, "6'6": 93, '': 48, "5'4": 30, "6'7": 21, "5'3": 18, "6'8": 10,
      "5'2": 5, "5'1": 3, "6'9": 2})
[105]: os.chdir('C:\\Users\\malowa\\Desktop\\R work\\matplotlib_tutorial-master')
       with open('fifa_data.csv',errors='ignore') as csv_file: #it worked from_
        \hookrightarrow stackoverflow
           csv_reader = csv.DictReader(csv_file)
           height_counter=Counter()
           for row in csv_reader:
               height_counter.update(row['Height'].split(';'))
       height=[]
       population=[]
       for item in height counter.most common(14):
           height.append(item[0])
           population.append(item[1])
       print(height)
       print(population)
      ["6'0", "5'10", "5'9", "5'11", "6'2", "6'1", "6'3", "5'8", "5'7", "6'4", "5'6",
      "6'5", "5'5", "6'6"]
      [2881, 2479, 2238, 2159, 2015, 1908, 990, 946, 905, 749, 316, 246, 145, 93]
[106]: plt.bar(height, population, label='Heights')
       plt.xlabel("Height in ft'inches",fontdict={'fontsize':15})
       plt.ylabel("Number of FIFA Players",fontdict={'fontsize':15})
       plt.title("Number of FIFA players in 2018 Against Their
        → Heights", fontdict={'fontname': 'Times New Roman', 'fontsize': 23, 'fontweight':

¬'bold'})
       plt.legend()
       plt.show()
```

# Number of FIFA players in 2018 Against Their Heights





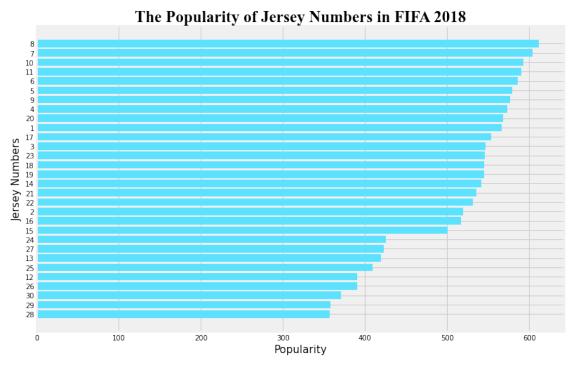


```
[108]: df.head(1)
[108]:
         Unnamed: 0
                         ID
                                 Name
                                       Age
                     158023 L. Messi
       0
                                                  Photo Nationality \
       0 https://cdn.sofifa.org/players/4/19/158023.png
                                        Flag Overall Potential
                                                                          Club \
       0 https://cdn.sofifa.org/flags/52.png
                                                   94
                                                              94 FC Barcelona
                                            Club Logo
                                                         Value
                                                                 Wage
                                                                       Special \
      0 https://cdn.sofifa.org/teams/2/light/241.png €110.5M €565K
                                                                          2202
        Preferred Foot International Reputation Weak Foot Skill Moves \
       0
                  Left
                                             5.0
                                                        4.0
                                                                     4.0
```

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O Medium/ Medium
                            Messi
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                                        Yes
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                                            5'7 1591bs 88+2 88+2
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                                                                CM
                                                                     R.CM
           I.F
                       RF
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      0 93+2 93+2
                           92+2 93+2 93+2 93+2 91+2 84+2 84+2
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                                             LCB
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                                                                        84.0
         Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
                                                     86.0
      0
              95.0
                               70.0
                                             90.0
                                                                97.0
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         FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
      0
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         Reactions Balance ShotPower Jumping Stamina Strength LongShots \
                       95.0
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                                           68.0
                                                             59.0
              95.0
                                                   72.0
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         Aggression Interceptions Positioning Vision Penalties Composure \
               48.0
                              22.0
                                           94.0
                                                  94.0
                                                             75.0
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         Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
                            28.0
            33.0
                                           26.0
                                                     6.0
                                                                11.0
                                                                           15.0
         GKPositioning GKReflexes Release Clause
      0
                  14.0
                               8.0
                                          €226.5M
[109]: import csv
      from collections import Counter
      import numpy as np
[110]: with open('fifa_data.csv',errors='ignore') as csv_file:
          csv_reader = csv.DictReader(csv_file)
          jersey_counter=Counter()
          for row in csv_reader:
              jersey_counter.update(row['Jersey Number'].split(';'))
      jersey_number=[]
      popularity=[]
      for item in jersey_counter.most_common(30):
          jersey_number.append(item[0])
```

Work Rate Body Type Real Face Position Jersey Number

```
popularity.append(item[1])
      print(jersey_number)
      print(popularity)
      ['8', '7', '10', '11', '6', '5', '9', '4', '20', '1', '17', '3', '23', '18',
      '19', '14', '21', '22', '2', '16', '15', '24', '27', '13', '25', '12', '26',
      '30', '29', '28']
      [612, 604, 593, 590, 586, 579, 577, 573, 568, 566, 554, 547, 546, 545, 545, 542,
     536, 531, 519, 517, 501, 425, 423, 419, 409, 390, 390, 371, 358, 357]
[111]: plt.figure(figsize=[12,8])
      jersey_number.reverse()
      popularity.reverse()
      plt.barh(jersey_number,popularity,color='#5ce1ff')
      plt.ylabel('Jersey Numbers',fontdict={'fontsize':15})
      plt.xlabel('Popularity',fontdict={'fontsize':15})
      plt.title('The Popularity of Jersey Numbers in FIFA 2018',fontdict={'fontname':
       plt.savefig('The Popularity of Jersey Numbers in FIFA 2018.png')
      plt.grid(True)
      plt.show()
```



```
[112]: import os
       os.getcwd()
[112]: 'C:\\Users\\malowa\\Desktop\\R work\\matplotlib_tutorial-master'
[113]: os.chdir('C:\\Users\\malowa\\Desktop\\R work')
[114]: data=pd.read_csv('datadev.csv')
[115]: data.head()
[115]:
         Responder_id
                                                LanguagesWorkedWith
                                    HTML/CSS; Java; JavaScript; Python
                     1
                     2
                                                C++; HTML/CSS; Python
       1
                     3
                                                           HTML/CSS
       2
       3
                     4
                                                C;C++;C#;Python;SQL
                     5 C++; HTML/CSS; Java; JavaScript; Python; SQL; VBA
[116]: data.shape
[116]: (87569, 2)
[117]: ids=data['Responder id']
       lang_responses=data['LanguagesWorkedWith']
       language_counter=Counter() #counts the number of languages
       for response in lang_responses:
                                         #this command iterates through all the
        → languages and picks each of them
           language_counter.update(response.split(';'))
                                                         #we split the response
        ⇒because the loop will read everything in the row
       languages=[] #setting as an empty list
       popularity=[] #setting as an empty list
       for item in language_counter.most_common(16): #this loops over the list of
        →tuples and the first value of the tuple will be language and second value is
        ⇔going to be popularity
           languages.append(item[0]) #languages will first be listed out, index of
        ⇒zero to grab the first item
           popularity.append(item[1]) #popularity will secondly be listed out, index_
        ⇔of one to grab the second item
[118]: print(language_counter.most_common(16))
      [('JavaScript', 59219), ('HTML/CSS', 55466), ('SQL', 47544), ('Python', 36443),
```

('Java', 35917), ('Bash/Shell/PowerShell', 31991), ('C#', 27097), ('PHP',

23030), ('C++', 20524), ('TypeScript', 18523), ('C', 18017), ('Other(s):', 7920), ('Ruby', 7331), ('Go', 7201), ('Assembly', 5833), ('Swift', 5744)]

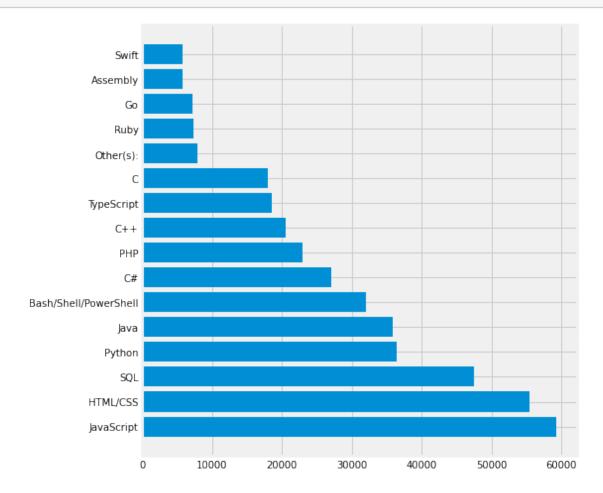
## [119]: print(languages)

['JavaScript', 'HTML/CSS', 'SQL', 'Python', 'Java', 'Bash/Shell/PowerShell', 'C#', 'PHP', 'C++', 'TypeScript', 'C', 'Other(s):', 'Ruby', 'Go', 'Assembly', 'Swift']

## [120]: print(popularity)

[59219, 55466, 47544, 36443, 35917, 31991, 27097, 23030, 20524, 18523, 18017, 7920, 7331, 7201, 5833, 5744]

[121]: plt.figure(figsize=[7,8])
 plt.barh(languages,popularity)
 plt.show()

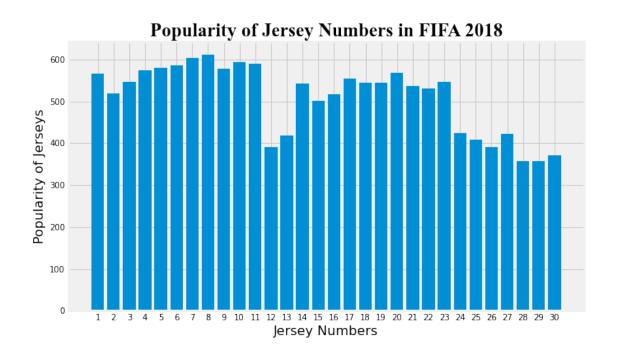


## [177]: print(jerseyno)

```
27, 13, 25, 12, 26, 30, 29, 28]
[178]: print(popularity)
      [612, 604, 593, 590, 586, 579, 577, 573, 568, 566, 554, 547, 546, 545, 545, 542,
      536, 531, 519, 517, 501, 425, 423, 419, 409, 390, 390, 371, 358, 357]
[202]: os.chdir('C:\\Users\\malowa\\Desktop\\R work\\matplotlib_tutorial-master')
[203]: import pandas
      fifaa=pd.read csv('fifa data.csv')
       #pd.set_option('display.max_columns')
[204]: fifaa.head(1)
[204]:
         Unnamed: 0
                                       Age \
                         ID
                                 Name
                    158023 L. Messi
                  0
                                                  Photo Nationality \
      0 https://cdn.sofifa.org/players/4/19/158023.png
                                                          Argentina
                                        Flag Overall Potential
                                                                          Club \
      0 https://cdn.sofifa.org/flags/52.png
                                                   94
                                                              94 FC Barcelona
                                            Club Logo
                                                         Value
                                                                 Wage Special \
      0 https://cdn.sofifa.org/teams/2/light/241.png €110.5M €565K
        Preferred Foot International Reputation Weak Foot Skill Moves \
                  Left
                                             5.0
                                                        4.0
                                                                     4.0
              Work Rate Body Type Real Face Position Jersey Number
                                                                          Joined \
      O Medium/ Medium
                            Messi
                                        Yes
                                                  RF
                                                               10.0
                                                                     Jul 1, 2004
        Loaned From Contract Valid Until Height Weight
                                                           LS
                                                                 ST
                                                                       RS
                                                                             LW
                                            5'7 1591bs 88+2
                                    2021
                                                              88+2
                                                                     88+2
           LF
                 CF
                       RF
                             RW
                                  LAM
                                        CAM
                                              RAM
                                                     LM
                                                          LCM
                                                                 CM
                                                                      RCM
                                                                             RM \
                                       93+2 93+2 91+2 84+2 84+2
                                                                          91+2
      0 93+2 93+2
                     93+2
                           92+2
                                 93+2
                                                                     84+2
          LWB
                LDM
                      CDM
                            RDM
                                  RWB
                                         LB
                                              LCB
                                                     CB
                                                          RCB
                                                                 RB
                                                                     Crossing \
      0 64+2 61+2
                     61+2
                           61+2 64+2
                                       59+2 47+2 47+2 47+2
                                                               59+2
                                                                         84.0
         Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
              95.0
                                             90.0
                                                      86.0
                                                                 97.0
                                                                        93.0
      0
                               70.0
         FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
               94.0
                                                       91.0
                                                                    86.0
                                                                             91.0
      0
                            87.0
                                         96.0
```

[8, 7, 10, 11, 6, 5, 9, 4, 20, 1, 17, 3, 23, 18, 19, 14, 21, 22, 2, 16, 15, 24,

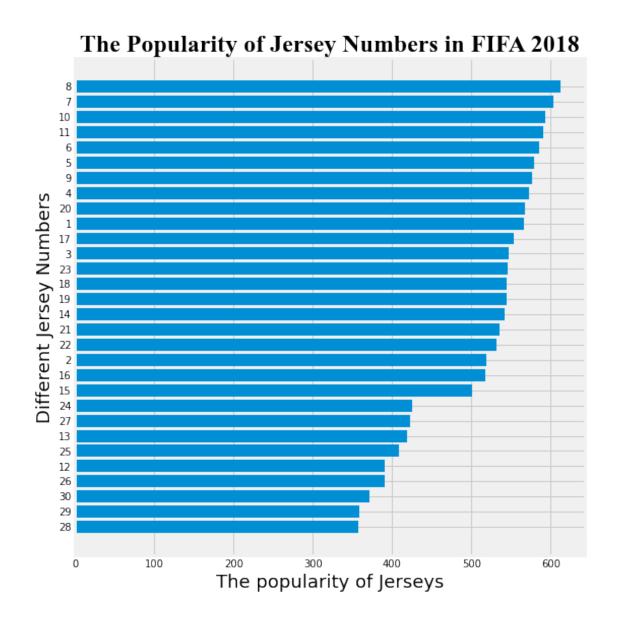
```
Reactions Balance
                            ShotPower
                                      Jumping Stamina Strength LongShots \
              95.0
                      95.0
                                 85.0
                                                            59.0
      0
                                          68.0
                                                  72.0
                                                                      94.0
         Aggression Interceptions Positioning Vision Penalties Composure
               48.0
                             22.0
                                          94.0
                                                 94.0
                                                            75.0
                                                                      96.0
      0
         Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
      0
            33.0
                           28.0
                                          26.0
                                                    6.0
                                                               11.0
                                                                         15.0
         GKPositioning GKReflexes Release Clause
      0
                  14.0
                              8.0
[205]: #we can use the .fillna for a column:
      #columns_fillna=['column1', 'column2', 'column3']
      #for col in columns_fillna:
          #df['col'].fillna(0,inplace=True)
          #df['col'].fillna(0,inplace=True)
      fifaa=fifaa.fillna(0) #replaces null values with zeroes in the entire dataframe
[206]: from collections import Counter
      from collections import OrderedDict
[207]: from matplotlib import pyplot as plt
[208]: plt.figure(figsize=[10,6])
      plt.bar(jerseyno,popularity)
      plt.xticks(jerseyno)
      plt.xlabel('Jersey Numbers',fontdict={'fontsize':16})
      plt.ylabel('Popularity of Jerseys',fontdict={'fontsize':16})
      plt.title('Popularity of Jersey Numbers in FIFA 2018',fontdict={'fontname':
       plt.show()
```



[209]:

#for key in student:

```
for i in counter:
           jerseyno.append(i[0])
           popularity.append(i[1])
[231]: print(jerseyno)
      ['8', '7', '10', '11', '6', '5', '9', '4', '20', '1', '17', '3', '23', '18',
      '19', '14', '21', '22', '2', '16', '15', '24', '27', '13', '25', '12', '26',
      '30', '29', '28']
[232]: print(popularity)
      [612, 604, 593, 590, 586, 579, 577, 573, 568, 566, 554, 547, 546, 545, 545, 542,
      536, 531, 519, 517, 501, 425, 423, 419, 409, 390, 390, 371, 358, 357]
[241]: import os
       from collections import Counter
[234]: os.getcwd()
[234]: 'C:\\Users\\malowa\\Desktop\\R work\\matplotlib_tutorial-master'
[257]: fif=pd.read_csv('fifa_data.csv')
       fif=fif.fillna(0)
       fif['Jersey Number']=fif['Jersey Number'].astype(int)
       fif['Jersey Number']=fif['Jersey Number'].astype(str)
       jerseys=fif['Jersey Number']
       counter=Counter(jerseys).most_common(30)
       jerseyno=[]
       liked=[]
       for i in counter:
           jerseyno.append(i[0])
           liked.append(i[1])
[259]: print(jerseyno)
       print(liked)
      ['8', '7', '10', '11', '6', '5', '9', '4', '20', '1', '17', '3', '23', '18',
```



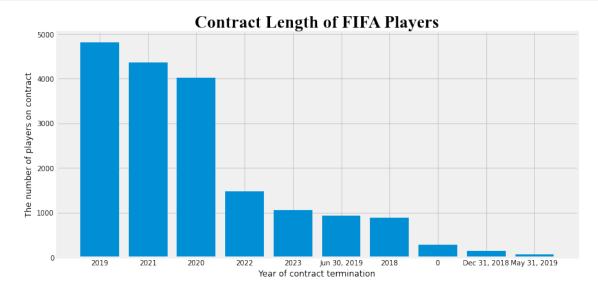
```
[274]: fif.head(1)
[274]:
         Unnamed: 0
                         ID
                                 Name
                                       Age
                     158023 L. Messi
      0
                                                  Photo Nationality \
      0 https://cdn.sofifa.org/players/4/19/158023.png
                                                          Argentina
                                        Flag Overall Potential
                                                                          Club \
      0 https://cdn.sofifa.org/flags/52.png
                                                              94 FC Barcelona
                                            Club Logo
                                                        Value
                                                                 Wage Special \
```

```
Preferred Foot International Reputation Weak Foot Skill Moves \
                                            5.0
                                                       4.0
                  Left
              Work Rate Body Type Real Face Position Jersey Number
                                                                       Joined \
      O Medium/ Medium
                           Messi
                                       Yes
                                                 RF
                                                              10 Jul 1, 2004
        Loaned From Contract Valid Until Height Weight
                                                         LS
                                                               ST
                                                                     RS
                                   2021
                                           5'7 1591bs 88+2 88+2
                                                                   88+2
           LF
                 CF
                      RF
                            RW
                                 LAM
                                       CAM
                                             RAM
                                                   LM
                                                        LCM
                                                                    RCM
      0 93+2 93+2 93+2 92+2 93+2 93+2 93+2 91+2 84+2 84+2 84+2 91+2
                LDM
                      CDM
                           RDM
                                 RWB
                                        LB
                                            LCB
          LWB
                                                    CB
                                                        RCB
                                                               RB
                                                                   Crossing \
      0 64+2 61+2 61+2 61+2 64+2 59+2 47+2 47+2 59+2
                                                                       84.0
         Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \
                                                    86.0
              95.0
                              70.0
                                            90.0
                                                               97.0
      0
         FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \
      0
               94.0
                           87.0
                                        96.0
                                                     91.0
                                                                  86.0
                                                                           91.0
         Reactions Balance ShotPower Jumping Stamina Strength LongShots \
      0
              95.0
                       95.0
                                 85.0
                                          68.0
                                                   72.0
                                                            59.0
                                                                       94.0
         Aggression Interceptions Positioning Vision Penalties Composure \
               48.0
                             22.0
                                          94.0
                                                  94.0
                                                            75.0
                                                                       96.0
         Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \
      0
            33.0
                           28.0
                                          26.0
                                                     6.0
                                                               11.0
                                                                          15.0
         GKPositioning GKReflexes Release Clause
      0
                  14.0
                                         €226.5M
                              8.0
[275]: |fif['Contract Valid Until']=fif['Contract Valid Until'].astype(str)
[307]: contract=fif['Contract Valid Until']
      counter_contract=Counter(contract).most_common(10)
      year=[]
      population=[]
      print(counter_contract)
```

0 https://cdn.sofifa.org/teams/2/light/241.png €110.5M €565K

2202

```
for i in counter_contract:
           year.append(i[0])
           population.append(i[1])
      [('2019', 4819), ('2021', 4360), ('2020', 4027), ('2022', 1477), ('2023', 1053),
      ('Jun 30, 2019', 931), ('2018', 886), ('0', 289), ('Dec 31, 2018', 144), ('May
      31, 2019', 60)]
[308]: print(year)
       print(population)
      ['2019', '2021', '2020', '2022', '2023', 'Jun 30, 2019', '2018', '0', 'Dec 31,
      2018', 'May 31, 2019']
      [4819, 4360, 4027, 1477, 1053, 931, 886, 289, 144, 60]
[311]: plt.figure(figsize=[12,6])
       plt.bar(year,population)
       plt.ylabel('The number of players on contract')
       plt.xlabel('Year of contract termination')
       plt.title('Contract Length of FIFA Players',fontdict={'fontname':'Times New_
        →Roman', 'fontsize':25, 'fontweight': 'bold'})
       plt.xticks(year)
       plt.show()
```



```
[314]: fif.loc[fif['Contract Valid Until']=='May 31, 2019'].count()[0]
```

```
[314]: 60
[315]:
      counter_contract2=Counter(contract)
[317]: print(counter_contract2)
      Counter({'2019': 4819, '2021': 4360, '2020': 4027, '2022': 1477, '2023': 1053,
      'Jun 30, 2019': 931, '2018': 886, '0': 289, 'Dec 31, 2018': 144, 'May 31, 2019':
      60, 'Jan 1, 2019': 51, '2024': 23, 'Jun 30, 2020': 14, 'Jan 31, 2019': 13,
      '2025': 7, 'Jan 2, 2019': 6, 'Jan 5, 2019': 6, 'Oct 14, 2019': 5, 'Jan 12,
      2019': 5, 'Jan 6, 2019': 4, 'Dec 31, 2019': 3, 'Jan 7, 2019': 3, 'Jan 25, 2019':
      3, '2026': 2, 'May 31, 2020': 2, 'Dec 1, 2019': 2, 'Nov 30, 2018': 2, 'Jun 1,
      2019': 1, 'Jan 4, 2019': 1, 'Jan 3, 2019': 1, 'May 4, 2019': 1, 'Jan 18, 2019':
      1, 'Feb 27, 2020': 1, 'Jan 15, 2019': 1, 'Jan 30, 2019': 1, 'Jan 11, 2019': 1,
      'Jan 20, 2019': 1})
[322]: jan 2019=fif.loc[(fif['Contract Valid Until']=='Jan 30, 2019')]
      jan_2019
[322]:
             Unnamed: 0
                                        Name
                                             Age \
                             ID
      16376
                  16376 233804 T. Bakinson
                                               19
                                                      Photo Nationality \
      16376 https://cdn.sofifa.org/players/4/19/233804.png
                                                                England
                                            Flag Overall Potential \
      16376 https://cdn.sofifa.org/flags/14.png
                                                                  74
                                                       57
                       Club
                                                                   Club Logo Value \
      16376 Newport County https://cdn.sofifa.org/teams/2/light/112254.png €220K
                  Special Preferred Foot International Reputation Weak Foot \
            Wage
      16376 €3K
                     1508
                                   Right
                                                               1.0
                                                                          3.0
                             Work Rate Body Type Real Face Position Jersey Number \
             Skill Moves
      16376
                     2.0 Medium/ High
                                            Lean
                                                        No
                                                                RCM
            Joined
                     Loaned From Contract Valid Until Height Weight
                                                                        LS
                 O Bristol City
                                         Jan 30, 2019
                                                         6'3
                                                             1811bs 53+2 53+2
      16376
                                                                          LCM
               RS
                     LW
                           LF
                                 CF
                                       RF
                                             RW
                                                  LAM
                                                        CAM
                                                              RAM
                                                                     LM
                                                                                 CM \
      16376 53+2 54+2 54+2 54+2 54+2 55+2 55+2
                                                                         55+2
                                                             55+2
                                                                  55+2
                                                                              55+2
              RCM
                     RM
                          LWB
                                LDM
                                      CDM
                                            RDM
                                                  RWB
                                                         LB
                                                              LCB
                                                                     CB
                                                                          RCB
                                                                                 RB
      16376
             55+2
                   55+2 52+2 53+2 53+2 53+2 52+2 52+2 51+2 51+2 51+2
             Crossing Finishing HeadingAccuracy ShortPassing Volleys Dribbling \
      16376
                 39.0
                            49.0
                                             51.0
                                                           63.0
                                                                    42.0
                                                                               59.0
```

```
FKAccuracy LongPassing BallControl Acceleration SprintSpeed \
       16376
               41.0
                            34.0
                                         58.0
                                                      63.0
                                                                     63.0
                                                                                  65.0
              Agility Reactions
                                  Balance
                                            ShotPower
                                                       Jumping
                                                                Stamina
                                                                          Strength \
                 62.0
                                      64.0
                                                 52.0
                                                           62.0
       16376
                            50.0
                                                                    63.0
                                                                              73.0
              LongShots
                         Aggression Interceptions Positioning
                                                                   Vision Penalties \
       16376
                   47.0
                                41.0
                                               43.0
                                                             40.0
                                                                     50.0
                                                                                44.0
                         Marking StandingTackle SlidingTackle
              Composure
                                                                   GKDiving \
       16376
                   61.0
                            39.0
                                             54.0
                                                             49.0
                                                                        8.0
              GKHandling
                          GKKicking GKPositioning GKReflexes Release Clause
       16376
                     8.0
                                11.0
                                               13.0
                                                             8.0
                                                                              0
[325]: fif.loc[(fif['Contract Valid Until']=='Jan 1, 2019')].count()[0]
[325]: 51
[330]:
[330]: '2019'
[331]:
       fif
[331]:
              Unnamed: 0
                               ID
                                                 Name
                                                        Age
                                                            \
       0
                       0
                          158023
                                             L. Messi
                                                         31
                           20801
                                    Cristiano Ronaldo
       1
                       1
                                                        33
       2
                       2
                          190871
                                            Neymar Jr
                                                        26
       3
                       3
                          193080
                                               De Gea
                                                         27
       4
                          192985
                                         K. De Bruvne
                                                         27
       18202
                   18202 238813
                                         J. Lundstram
                                                         19
       18203
                   18203 243165
                                  N. Christoffersson
                                                         19
       18204
                   18204
                          241638
                                            B. Worman
                                                         16
       18205
                                       D. Walker-Rice
                   18205
                          246268
                                                         17
       18206
                   18206
                         246269
                                            G. Nugent
                                                         16
                                                        Photo Nationality \
       0
              https://cdn.sofifa.org/players/4/19/158023.png
                                                                 Argentina
               https://cdn.sofifa.org/players/4/19/20801.png
       1
                                                                  Portugal
       2
              https://cdn.sofifa.org/players/4/19/190871.png
                                                                    Brazil
       3
              https://cdn.sofifa.org/players/4/19/193080.png
                                                                     Spain
       4
              https://cdn.sofifa.org/players/4/19/192985.png
                                                                   Belgium
       18202 https://cdn.sofifa.org/players/4/19/238813.png
                                                                   England
```

```
18203
       https://cdn.sofifa.org/players/4/19/243165.png
                                                              Sweden
       https://cdn.sofifa.org/players/4/19/241638.png
18204
                                                             England
18205
       https://cdn.sofifa.org/players/4/19/246268.png
                                                             England
18206
       https://cdn.sofifa.org/players/4/19/246269.png
                                                             England
                                                        Potential
                                        Flag
                                              Overall
0
       https://cdn.sofifa.org/flags/52.png
                                                    94
                                                               94
1
       https://cdn.sofifa.org/flags/38.png
                                                    94
                                                               94
2
       https://cdn.sofifa.org/flags/54.png
                                                    92
                                                               93
3
       https://cdn.sofifa.org/flags/45.png
                                                    91
                                                               93
4
        https://cdn.sofifa.org/flags/7.png
                                                    91
                                                               92
18202
       https://cdn.sofifa.org/flags/14.png
                                                    47
                                                               65
18203
       https://cdn.sofifa.org/flags/46.png
                                                    47
                                                               63
       https://cdn.sofifa.org/flags/14.png
18204
                                                    47
                                                               67
18205
       https://cdn.sofifa.org/flags/14.png
                                                    47
                                                               66
       https://cdn.sofifa.org/flags/14.png
                                                    46
18206
                                                               66
                       Club
                                                                    Club Logo
0
              FC Barcelona
                               https://cdn.sofifa.org/teams/2/light/241.png
                                https://cdn.sofifa.org/teams/2/light/45.png
1
                   Juventus
2
       Paris Saint-Germain
                                https://cdn.sofifa.org/teams/2/light/73.png
3
         Manchester United
                                https://cdn.sofifa.org/teams/2/light/11.png
4
                                https://cdn.sofifa.org/teams/2/light/10.png
           Manchester City
18202
           Crewe Alexandra
                               https://cdn.sofifa.org/teams/2/light/121.png
                               https://cdn.sofifa.org/teams/2/light/703.png
18203
            Trelleborgs FF
18204
                              https://cdn.sofifa.org/teams/2/light/1944.png
          Cambridge United
18205
           Tranmere Rovers
                             https://cdn.sofifa.org/teams/2/light/15048.png
18206
                             https://cdn.sofifa.org/teams/2/light/15048.png
           Tranmere Rovers
                        Special Preferred Foot
                                                 International Reputation
         Value
                  Wage
0
                €565K
                           2202
                                                                        5.0
       €110.5M
                                           Left
                                                                        5.0
1
          €77M
                €405K
                           2228
                                          Right
2
       €118.5M
                €290K
                           2143
                                                                        5.0
                                          Right
3
          €72M
                €260K
                           1471
                                          Right
                                                                        4.0
4
                €355K
                                                                        4.0
         €102M
                           2281
                                          Right
18202
          €60K
                   €1K
                           1307
                                          Right
                                                                        1.0
                   €1K
                                          Right
                                                                        1.0
18203
          €60K
                           1098
                                          Right
18204
          €60K
                   €1K
                           1189
                                                                        1.0
18205
          €60K
                   €1K
                           1228
                                          Right
                                                                        1.0
18206
          €60K
                                          Right
                                                                        1.0
                   €1K
                           1321
       Weak Foot
                  Skill Moves
                                      Work Rate
                                                   Body Type Real Face Position
0
             4.0
                           4.0
                                Medium/ Medium
                                                       Messi
                                                                   Yes
                                                                              RF
1
             4.0
                           5.0
                                      High/ Low
                                                 C. Ronaldo
                                                                   Yes
                                                                              ST
```

2		5.0 3.0		5.0 1.0	High Medium	n/ Med:		Ney	mar ean	Ye Ye		LW GK	
4		5.0		4.0		igh/ H		Nor		Ye		RCM	
•••			•••		••				<b></b>				
18202		2.0		2.0	Medium	n/ Med:	ium	L	ean	N	0	CM	
18203		2.0		2.0	Medium	n/ Med:	ium	Nor	mal	N	0	ST	
18204		3.0		2.0	Medium	n/ Med:	ium	Nor	${\tt mal}$	N	0	ST	
18205		3.0		2.0	Medium			L	ean	N	0	RW	
18206		3.0		2.0	Medium	n/ Med:	ium	L	ean	N	0	CM	
	Jersey	Numbe	r	Joi	ned Loa	aned Fi	rom Coi	ntract	Valid	Until	Heigh	t \	
0	00200			1 1, 2			0			2021	5'		
1		_		10, 2			0			2022			
2		1		g 3, 2			0			2022			
3				1 1, 2			0			2020			
4				30, 2			0			2023			
•••		•••	O		•					•••			
18202		2	22 Ma	у 3, 2	017		0			2019	5'	9	
18203		2	1 Mar	19, 2	018		0			2020	6'	3	
18204		3	3 Ju	1 1, 2	017		0			2021	5'	8	
18205		3	4 Apr	24, 2	018		0			2019	5'1	0	
18206		3	3 Oct	30, 2	018		0			2019	5'1	0	
	Weigh	t I	S S		S LV	J L	F CI	F R	F R	W LA	M CA	M \	
0	1591b	s 88+	2 88+	2 88+							2 93+	2	
1	1831b												
2	1501b												
3	1681b				0 (							0	
4	1541b	s 82+	3 82+	3 82+	3 87+3	3 87+3	3 87+3	3 87+	3 87+	3 88+	3 88+	3	
10000		 s 42+		 2 42+				 	2 44+	2 45+	0 451	2	
18202 18203	1341b 1701b												
18203	1481b												
					2  45+2								
					2 45+2								
10200	11010	5 10.	2 10.	2 10	2 10.2	. 11.	2 11.2	_ 11.	2 10.	2 10	2 10.	_	
	RAM	LM	LCM	CM	RCM	RM	LWB	LDM	CDM	RDM	RWB	LB	\
0	93+2	91+2	84+2	84+2	84+2	91+2	64+2	61+2	61+2	61+2	64+2	59+2	
1	88+3	88+3	81+3	81+3	81+3	88+3	65+3	61+3	61+3	61+3	65+3	61+3	
2	89+3	88+3	81+3	81+3	81+3	88+3	65+3	60+3	60+3	60+3	65+3	60+3	
3	0	0	0	0	0	0	0	0	0	0	0	0	
4	88+3	88+3	87+3	87+3	87+3	88+3	77+3	77+3	77+3	77+3	77+3	73+3	
								•••					
					45+2						44+2	45+2	
18203			35+2				30+2	31+2	31+2		30+2	29+2	
18204			38+2				34+2		30+2		34+2	33+2	
18205	45+2	46+2	39+2	39+2	39+2	46+2	36+2	32+2	32+2	32+2	36+2	35+2	

18206	45+2	46+2	45+2	45+2	45+2	2 46+	2 46+	2 46	5+2 4	6+2	46+2	46+2	46-	+2
	LCB	СВ	RCB	RB	Cros	ssing	Finis	hing	Head	ling/	Accurac	.v \		
0	47+2	47+2	47+2	59+2		84.0		95.0		0	70.	-		
1	53+3		53+3	61+3		84.0		94.0			89.	0		
2	47+3	47+3	47+3	60+3		79.0		87.0			62.	0		
3	0	0	0	0		17.0		13.0			21.	0		
4	66+3	66+3	66+3	73+3		93.0		82.0			55.	0		
		•••				•••		•••	•					
18202	45+2	45+2	45+2	45+2		34.0		38.0			40.	0		
18203	32+2	32+2	32+2	29+2		23.0		52.0			52.	0		
18204	28+2	28+2	28+2	33+2		25.0		40.0			46.	0		
18205	31+2	31+2	31+2	35+2		44.0		50.0			39.	0		
18206	47+2	47+2	47+2	46+2		41.0		34.0			46.	0		
	Short	Passin	g Vol	levs	Dribb	oling	Curve	FKA	ccura	ıcv	LongPa	ssing	\	
0		90.	_	86.0		97.0	93.0			.0		87.0	•	
1		81.		87.0		88.0	81.0			3.0		77.0		
2		84.		84.0		96.0	88.0		87	.0		78.0		
3		50.		13.0		18.0	21.0		19	0.0		51.0		
4		92.	0	82.0		86.0	85.0	)	83	3.0		91.0		
		•••	•••		•••		•••	•						
18202		49.	0	25.0		42.0	30.0	)	34	.0		45.0		
18203		43.	0	36.0		39.0	32.0	)	20	0.0		25.0		
18204		38.	0	38.0		45.0	38.0	)	27	.0		28.0		
18205		42.	0	40.0		51.0	34.0	)	32	2.0		32.0		
18206		48.	0	30.0		43.0	40.0	)	34	.0		44.0		
	BallC	ontrol	Acce	lerat	ion S	Sprint	Speed	Aoil	itv	Read	ctions	Ralar	CE	\
0	Dullo	96.0			1.0	) P1 1110	86.0	_	-	Tuou	95.0		.0	`
1		94.0			9.0		91.0		37.0		96.0		.0	
2		95.0			1.0		90.0		6.0		94.0		. 0	
3		42.0			7.0		58.0						3.0	
4		91.0			3.0		76.0		9.0		91.0		.0	
•••		•••		•••			•••		•••		•			
18202		43.0	)	54	4.0		57.0	6	0.0		49.0	76	.0	
18203		40.0	)	4:	1.0		39.0	3	8.0		40.0	52	2.0	
18204		44.0	)	70	0.0		69.0	5	0.0		47.0	58	3.0	
18205		52.0	)	6:	1.0		60.0	5	2.0		21.0	71	.0	
18206		51.0	)	57	7.0		55.0	5	55.0		51.0	63	3.0	
	ShotP	ower	Jumpin	ø Sta	amina	Stre	nøt.h	Longs	Shots	Δσα	gressio	n \		
0		85.0	68.	_	72.0		59.0	_	94.0	68	48.			
1		95.0	95.		88.0		79.0		93.0		63.			
2		80.0	61.		81.0		49.0		82.0		56.			
3		31.0	67.		43.0		64.0		12.0		38.			
4		91.0	63.		90.0		75.0		91.0		76.			
-				-			•					-		

					•••					
18202	43.0	55.0	40.0	47		38			6.0	
18203	41.0	47.0	43.0	67		42			7.0	
18204	45.0	60.0	55.0	32		45		32.0		
18205	64.0	42.0	40.0		48.0		.0	33.0		
18206	43.0	62.0	47.0	60	.0	32.0		56.0		
	Interceptions	Positi	ioning	Vision	Pana <sup>-</sup>	ltias	Compo	gura	Markir	nor \
0	22.0		94.0	94.0	ı cııa.	75.0	oompo	96.0	33.	_
1	29.0		95.0	82.0		85.0		95.0	28.	
2	36.0		89.0	87.0		81.0		94.0	27.	
3	30.0		12.0	68.0		40.0		68.0	15.	
4	61.0		87.0	94.0		79.0		88.0	68.	
<u>-</u>								00.0	00.	
18202	46.0	•••	39.0	52.0		43.0		45.0	40.	.0
18203	16.0		46.0	33.0		43.0		42.0	22.	
18204	15.0		48.0	43.0		55.0		41.0	32.	
18205	22.0		44.0	47.0		50.0		46.0	20.	
18206	42.0		34.0	49.0			43.0		40.0	
	StandingTackl	e Slidi	ingTackl	Le GKDi	ving	GKHan	dling	GKKi	cking	\
0	28.	0	26	. 0	6.0		11.0		15.0	
1	31.	0	23	. 0	7.0		11.0		15.0	
2	24.	0	33	. 0	9.0		9.0		15.0	
3	21.	0	13	. 0	90.0		85.0		87.0	
4	58.	0	51	. 0	15.0		13.0		5.0	
•••	•••		•••			<b></b>	•••			
18202	48.	0	47	. 0	10.0		13.0		7.0	
18203	15.	0	19	. 0	10.0		9.0		9.0	
18204	13.	0	11.		6.0		5.0		10.0	
18205	25.		27		14.0		6.0		14.0	
18206	43.	0	50	. 0	10.0		15.0		9.0	
	GKPositioning	CKRAfi	leves Pa	elease C	lance					
0	14.0		8.0		26.5M					
1	14.0		11.0		27.1M					
2	15.0		11.0		28.1M					
3	88.0		94.0		38.6M					
4	10.0		13.0		96.4M					
<del></del>			10.0	 £T	JU. <del>T</del> I'l					
18202	8.0		9.0		€143K					
18203	5.0		12.0		€113K					
18204	6.0		13.0		€165K					
18205	8.0		9.0		€143K					
18206	12.0		9.0		€165K					

[18207 rows x 89 columns]

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[334]:
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                                           Age
                           ID
                                     Name
       2
                    2
                       190871
                               Neymar Jr
                                            26
       3
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                       193080
                                  De Gea
                                            27
                                                     Photo Nationality \
       2 https://cdn.sofifa.org/players/4/19/190871.png
                                                                 Brazil
       3 https://cdn.sofifa.org/players/4/19/193080.png
                                                                  Spain
                                           Flag Overall
                                                          Potential
       2 https://cdn.sofifa.org/flags/54.png
                                                       92
                                                                  93
       3 https://cdn.sofifa.org/flags/45.png
                                                       91
                                                                  93
                          Club
                                                                    Club Logo
                                                                                  Value \
          Paris Saint-Germain https://cdn.sofifa.org/teams/2/light/73.png
            Manchester United https://cdn.sofifa.org/teams/2/light/11.png
                                                                                   €72M
                 Special Preferred Foot International Reputation Weak Foot \
       2 €290K
                     2143
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                     1471
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                                                                             3.0
          Skill Moves
                             Work Rate Body Type Real Face Position Jersey Number
       2
                          High/ Medium
                                           Neymar
                                                         Yes
                                                                   LW
       3
                   1.0
                       Medium/ Medium
                                             Lean
                                                         Yes
                                                                   GK
                                                                                   1
               Joined Loaned From Contract Valid Until Height Weight
                                                                             LS
                                                                                   ST
          Aug 3, 2017
                                 0
                                                    2022
                                                             5'9
                                                                  1501bs
                                                                           84+3
                                                                                 84+3
          Jul 1, 2011
                                 0
                                                    2020
                                                                              0
                                                             6'4
                                                                  1681bs
                                                                                    0
            RS
                  LW
                         LF
                               CF
                                      RF
                                            RW
                                                 LAM
                                                        CAM
                                                              RAM
                                                                     LM
                                                                           LCM
                                                                                  CM
          84+3
                       89+3
                                                                   88+3
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                                                                           RCB
           RCM
                  RM
                        LWB
                              LDM
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                                           RDM
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                                                         LB
                                                              LCB
                                                                     CB
                                                                                  RB
                                                65+3
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                                                             47+3
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          Crossing Finishing HeadingAccuracy
                                                  ShortPassing Volleys
       2
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                                            {\tt BallControl}
          Curve FKAccuracy LongPassing
                                                         Acceleration SprintSpeed
                                                                  94.0
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                                                                  57.0
                                                                                58.0
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Agility Reactions Balance ShotPower Jumping Stamina Strength \

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2
             96.0
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                                  84.0
                                             80.0
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          LongShots
                     Aggression
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                                                               Vision
                                                                      Penalties
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       3
          Composure
                     Marking StandingTackle SlidingTackle
                                                               GKDiving
                                                                         GKHandling \
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          GKKicking
                     GKPositioning GKReflexes Release Clause
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               87.0
                               88.0
                                           94.0
                                                        €138.6M
       3
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                   2
                      190871
                               Neymar Jr
                                           26
       3
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                                           27
                                                     Photo Nationality \
       2 https://cdn.sofifa.org/players/4/19/190871.png
                                                                Brazil
       3 https://cdn.sofifa.org/players/4/19/193080.png
                                                                 Spain
                                          Flag
                                               Overall Potential
       2 https://cdn.sofifa.org/flags/54.png
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       3 https://cdn.sofifa.org/flags/45.png
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                                                                 93
                         Club
                                                                   Club Logo
                                                                                 Value \
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                                                                              €118.5M
            Manchester United https://cdn.sofifa.org/teams/2/light/11.png
                                                                                  €72M
                 Special Preferred Foot
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                                                                     Weak Foot \
           Wage
          €290K
                    2143
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       2
                                   Right
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                                                                4.0
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                                   Right
                             Work Rate Body Type Real Face Position Jersey Number
          Skill Moves
       2
                  5.0
                         High/ Medium
                                          Neymar
                                                                                 10
                                                        Yes
                                                                  LW
       3
                  1.0
                       Medium/ Medium
                                                                  GK
                                                                                  1
                                            Lean
                                                        Yes
               Joined Loaned From Contract Valid Until Height Weight
                                                                                  ST
                                                                           LS
                                                    2022
                                                            5'9
                                                                 1501bs
       2 Aug 3, 2017
                                 0
                                                                         84+3
                                                                                84+3
       3 Jul 1, 2011
                                                    2020
                                                            6'4
                                                                 1681bs
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                               CF
                                                LAM
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                                                                                 CM \
            RS
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                        LF
                                     RF
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                                                             RAM
                                                                    LM
                                               89+3 89+3 89+3
          84+3 89+3
                      89+3
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                                   89+3
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                                                                        81+3
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3
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           RCM
                  RM
                        LWB
                              LDM
                                    CDM
                                          RDM
                                                 RWB
                                                        LB
                                                             LCB
                                                                     CB
                                                                          RCB
                                                                                 RB
                                                            47+3
          81+3
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                       65+3
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          Crossing Finishing HeadingAccuracy ShortPassing Volleys
                                                                         Dribbling \
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                                                                    84.0
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          Curve FKAccuracy LongPassing BallControl Acceleration SprintSpeed
       2
           88.0
                       87.0
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                                                   95.0
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           21.0
                        19.0
                                     51.0
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                                                                               58.0
                              Balance
                                        ShotPower
                                                             Stamina
          Agility Reactions
                                                    Jumping
                                                                      Strength \
             96.0
       2
                                  84.0
                                                       61.0
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                         94.0
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       3
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          LongShots
                     Aggression Interceptions Positioning Vision Penalties \
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          Composure
                     Marking StandingTackle SlidingTackle GKDiving
                                                                         GKHandling \
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                     GKPositioning GKReflexes Release Clause
          GKKicking
       2
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                                           11.0
                                                        €228.1M
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                               88.0
                                           94.0
                                                        €138.6M
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                                        Name
                                              Age
                                                   \
       2
                    2
                       190871
                                   Neymar Jr
                                                26
       5
                    5
                       183277
                                   E. Hazard
                                                27
       7
                    7
                       176580
                                   L. Suárez
                                                31
       8
                    8
                       155862
                                Sergio Ramos
                                                32
       90
                   90
                       189513
                                      Parejo
                                                29
                                                      Photo Nationality \
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                                                                  Spain
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                                                                  Spain
                                           Flag Overall Potential \
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7
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                                                              91
    https://cdn.sofifa.org/flags/45.png
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8
                                                  91
    https://cdn.sofifa.org/flags/45.png
                                                  85
                                                              85
                    Club
                                                                 Club Logo \
2
    Paris Saint-Germain
                            https://cdn.sofifa.org/teams/2/light/73.png
5
                 Chelsea
                             https://cdn.sofifa.org/teams/2/light/5.png
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             Real Madrid
                           https://cdn.sofifa.org/teams/2/light/243.png
90
             Valencia CF
                           https://cdn.sofifa.org/teams/2/light/461.png
                                                International Reputation
      Value
               Wage
                     Special Preferred Foot
2
    €118.5M
              €290K
                         2143
                                                                       5.0
                                        Right
5
                                                                       4.0
       €93M
              €340K
                         2142
                                        Right
7
                         2346
                                        Right
                                                                       5.0
       €80M
              €455K
8
       €51M
              €380K
                         2201
                                        Right
                                                                      4.0
       €37M
90
               €66K
                         2119
                                        Right
                                                                       2.0
    Weak Foot
                Skill Moves
                                 Work Rate Body Type Real Face Position
2
           5.0
                         5.0
                              High/ Medium
                                                Neymar
                                                              Yes
                                                                         LW
5
           4.0
                         4.0
                              High/ Medium
                                               Normal
                                                              Yes
                                                                         LF
7
           4.0
                         3.0
                              High/ Medium
                                               Normal
                                                              Yes
                                                                         RS
8
           3.0
                         3.0
                              High/ Medium
                                               Normal
                                                              Yes
                                                                        RCB
           4.0
                         3.0
90
                               Medium/ Low
                                                  Lean
                                                              Yes
                                                                        RCM
    Jersey Number
                           Joined Loaned From Contract Valid Until Height
2
              10.0
                     Aug 3, 2017
                                           NaN
                                                                 2022
                                                                          5'9
5
              10.0
                     Jul 1, 2012
                                           NaN
                                                                 2020
                                                                          5'8
7
               9.0
                     Jul 11, 2014
                                           NaN
                                                                 2021
                                                                          6'0
8
              15.0
                     Aug 1, 2005
                                           NaN
                                                                 2020
                                                                          6'0
90
              10.0
                     Jul 1, 2011
                                           NaN
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    Weight
               LS
                     ST
                            RS
                                  LW
                                         LF
                                                CF
                                                      RF
                                                             R.W
                                                                  LAM
                                                                         CAM
                                                                               RAM
2
    1501bs
             84+3
                   84+3
                          84+3
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5
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7
    1901bs
             87+5
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8
    1811bs
             73+3
                   73+3
                          73+3
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                                       71+3
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                                             77+2
90
    1631bs
            74+2
                   74+2
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      LM
           LCM
                   CM
                         RCM
                                RM
                                      LWB
                                            LDM
                                                   CDM
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                                                                             LCB
                                     65+3
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                              88+3
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          82+3
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                              89+3
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                                           63+3
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                                                               66+3
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                                                                            49+3
7
    84+5
          79+5
                 79+5
                       79+5
                              84+5
                                     69+5
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                                                               69+5
                                                                     66+5
                                                                            63+5
          75+3
                        75+3
8
    72+3
                 75+3
                              72+3
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                                                        84+3
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                                                                            87+3
          83+2
                 83+2
                       83+2
                              78+2
                                    74+2
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90
    78+2
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                                                        77+2
                                                               74+2
                                                                     71+2
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CB
           RCB
                     Crossing Finishing HeadingAccuracy ShortPassing \
    47+3
         47+3
               60+3
                           79.0
                                      87.0
                                                        62.0
                                                                      84.0
2
    49+3
         49+3
                60+3
                          81.0
                                      84.0
                                                        61.0
                                                                      89.0
5
                                                                      82.0
7
    63+5
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                          77.0
                                      93.0
                                                        77.0
8
    87+3
         87+3 84+3
                          66.0
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                                                                      78.0
90
    69+2 69+2 71+2
                          84.0
                                      79.0
                                                        61.0
                                                                      90.0
    Volleys Dribbling Curve FKAccuracy LongPassing BallControl \
2
       84.0
                  96.0
                         88.0
                                      87.0
                                                   78.0
                                                                 95.0
5
       80.0
                  95.0
                         83.0
                                      79.0
                                                   83.0
                                                                 94.0
7
       88.0
                          86.0
                                      84.0
                                                                 90.0
                  87.0
                                                   64.0
                         74.0
       66.0
                  63.0
                                      72.0
                                                                 84.0
                                                   77.0
90
       72.0
                  78.0
                         89.0
                                      90.0
                                                   87.0
                                                                 84.0
    Acceleration SprintSpeed Agility Reactions Balance ShotPower \
                                   96.0
2
            94.0
                          90.0
                                              94.0
                                                        84.0
                                                                   80.0
            94.0
                                   95.0
                                              90.0
                                                        94.0
                                                                   82.0
5
                          88.0
7
            86.0
                          75.0
                                   82.0
                                              92.0
                                                        83.0
                                                                   86.0
8
            76.0
                          75.0
                                   78.0
                                              85.0
                                                        66.0
                                                                   79.0
90
            51.0
                          43.0
                                  66.0
                                              78.0
                                                       72.0
                                                                   78.0
    Jumping Stamina Strength LongShots Aggression Interceptions
                81.0
                           49.0
                                      82.0
                                                  56.0
                                                                  36.0
2
       61.0
       56.0
                                      80.0
                                                                  41.0
5
                83.0
                           66.0
                                                  54.0
7
                                      85.0
       69.0
                90.0
                          83.0
                                                  87.0
                                                                  41.0
       93.0
                84.0
                          83.0
                                      59.0
                                                  88.0
                                                                  90.0
90
       51.0
                78.0
                          72.0
                                      82.0
                                                  58.0
                                                                  81.0
    Positioning Vision Penalties Composure Marking StandingTackle
2
           89.0
                   87.0
                               81.0
                                          94.0
                                                   27.0
                                                                    24.0
           87.0
                   89.0
                               86.0
                                          91.0
                                                   34.0
                                                                    27.0
5
7
           92.0
                   84.0
                               85.0
                                          85.0
                                                   62.0
                                                                    45.0
           60.0
                               75.0
                                                   87.0
8
                   63.0
                                          82.0
                                                                    92.0
           81.0
90
                   86.0
                               83.0
                                          78.0
                                                   69.0
                                                                    68.0
                                          GKKicking GKPositioning GKReflexes \
    SlidingTackle GKDiving GKHandling
2
             33.0
                        9.0
                                     9.0
                                               15.0
                                                               15.0
                                                                           11.0
             22.0
                        11.0
                                    12.0
                                                6.0
                                                                8.0
                                                                            8.0
5
7
             38.0
                       27.0
                                    25.0
                                               31.0
                                                               33.0
                                                                           37.0
8
             91.0
                       11.0
                                     8.0
                                                9.0
                                                                7.0
                                                                           11.0
90
             60.0
                        5.0
                                     9.0
                                               12.0
                                                               14.0
                                                                            8.0
   Release Clause
2
          €228.1M
          €172.1M
5
7
            €164M
```

```
8
                 €104.6M
       90
                  €77.7M
[338]: df.iloc[[2,4,5],2:5]
                               #identifies the rows
                                                      to be extracted then secondly you
        ⇔specify the rows
[338]:
                  Name
                         Age
                                                                         Photo
                              https://cdn.sofifa.org/players/4/19/190871.png
       2
             Neymar Jr
                          26
       4
          K. De Bruyne
                              https://cdn.sofifa.org/players/4/19/192985.png
                          27
                              https://cdn.sofifa.org/players/4/19/183277.png
             E. Hazard
                          27
       5
[339]: df.loc[[4,78,900,456,67]]
                                   #Accesses the 4th, seventy eighth, 900th and 456th and
        → the sixty seventh row
[339]:
            Unnamed: 0
                             ID
                                                 Name
                                                       Age
                                                           \
       4
                      4
                         192985
                                        K. De Bruyne
                                                        27
       78
                         223848
                                 S. Milinković-Savić
                    78
                                                        23
       900
                                          F. Johnson
                   900
                        177159
                                                        30
       456
                   456
                         205693
                                            S. Haller
                                                        24
       67
                    67
                         189509
                                               Thiago
                                                        27
                                                       Photo
                                                                Nationality
       4
            https://cdn.sofifa.org/players/4/19/192985.png
                                                                     Belgium
       78
            https://cdn.sofifa.org/players/4/19/223848.png
                                                                      Serbia
       900
            https://cdn.sofifa.org/players/4/19/177159.png
                                                              United States
       456
            https://cdn.sofifa.org/players/4/19/205693.png
                                                                      France
       67
            https://cdn.sofifa.org/players/4/19/189509.png
                                                                       Spain
                                                   Overall
                                                            Potential
                                             Flag
       4
             https://cdn.sofifa.org/flags/7.png
                                                                    92
                                                        91
       78
            https://cdn.sofifa.org/flags/51.png
                                                        85
                                                                    90
                                                                    77
       900
            https://cdn.sofifa.org/flags/95.png
                                                        77
       456
            https://cdn.sofifa.org/flags/18.png
                                                        80
                                                                    83
            https://cdn.sofifa.org/flags/45.png
       67
                                                        86
                                                                    86
                                 Club
                                                                             Club Logo \
       4
                     Manchester City
                                         https://cdn.sofifa.org/teams/2/light/10.png
       78
                                Lazio
                                         https://cdn.sofifa.org/teams/2/light/46.png
                                         https://cdn.sofifa.org/teams/2/light/23.png
       900
            Borussia Mönchengladbach
       456
                 Eintracht Frankfurt
                                       https://cdn.sofifa.org/teams/2/light/1824.png
                                         https://cdn.sofifa.org/teams/2/light/21.png
       67
                   FC Bayern München
             Value
                            Special Preferred Foot
                                                     International Reputation
                      Wage
       4
             €102M
                    €355K
                               2281
                                              Right
                                                                           4.0
       78
            €50.5M
                      €73K
                                              Right
                               2206
                                                                           2.0
       900
             €8.5M
                      €29K
                               2007
                                              Right
                                                                           2.0
       456
              €19M
                      €41K
                                              Right
                               1889
                                                                           1.0
```

67	€45.5M €130	K 2190	Rig	ht		3.0			
	Weak Foot S	kill Moves	Work R	ate Bodv Tvp	e Real Face 1	Position \			
4	5.0	4.0	High/ H			RCM			
78	4.0	4.0	High/ Med	ium Norma	l Yes	CM			
900	4.0	3.0	Medium/ Med	ium Norma	l Yes	LM			
456	2.0	3.0	High/ Med	ium Norma	l No	RS			
67	3.0	5.0	Medium/ Med	ium Norma	l Yes	CM			
	Jersey Number	r Joi	ned Loaned	From Contrac	t Valid Until	l Height \			
4	7.0	0 Aug 30, 2	2015	NaN	2023	3 5'11			
78	21.0	0 Aug 6, 2	2015	NaN	2023	3 6'3			
900	19.	0 Jul 1, 2	2014	NaN	2020	0 6'0			
456	9.0	•		NaN	202				
67	19.0	0 Jul 14, 2	2013	NaN	202	1 5'9			
	Weight LS	ST RS	S LW L	F CF R	F RW LAI	M CAM RAM \			
4	1541bs 82+3	82+3 82+3	8 87+3 87+	3 87+3 87+	3 87+3 88+3	88+3 88+3			
78	1681bs 81+2	81+2 81+2	2 79+2 81+	2 81+2 81+	2 79+2 82+3	2 82+2 82+2			
900	1631bs 71+2								
456	2011bs 79+2								
67	1541bs 75+3	75+3 75+3	8 82+3 81+	3 81+3 81+	3 82+3 84+3	3 84+3 84+3			
	LM LCM	CM RCM	RM LWB	LDM CDM	RDM RWB	LB LCB \			
4	88+3 87+3		88+3 77+3	77+3 77+3	77+3 77+3	73+3 66+3			
78	80+2 83+2	83+2 83+2	80+2 77+2	80+2 80+2	80+2 77+2	76+2 79+2			
900	75+2 73+2	73+2 73+2	75+2 73+2	71+2 71+2	71+2 73+2	72+2 68+2			
456			69+2 57+2	57+2 57+2	57+2 57+2	56+2 59+2			
67	82+3 84+3	84+3 84+3	82+3 76+3	77+3 77+3	77+3 76+3	73+3 67+3			
	CB RCB	RB Crossi	ng Finishi	ng HeadingA	ccuracy Sho	rtPassing \			
4			•	2.0	55.0	92.0			
78	79+2 79+2	76+2 64	1.0 80	.0	86.0	85.0			
900	68+2 68+2	72+2 76	3.0 70	.0	60.0	76.0			
456	59+2 59+2	56+2 40	0.0 84	0	80.0	70.0			
67	67+3 67+3	73+3 72	2.0 69	.0	54.0	90.0			
	Volleys Dri	bbling Curv	ve FKAccura	cv LongPass	ing BallCon	trol \			
4	82.0	86.0 85.			-	91.0			
- 78	74.0	86.0 78.				37.0			
900	66.0	79.0 72.				76.0			
456	79.0	72.0 52.				79.0			
67	90.0	90.0 85.	0 77	.0 8	7.0	90.0			
	Accoloration	Cnrin+Cncc	nd Agili+	Ponetions	Ralance Char	-Power \			
4	Acceleration 78.0			Reactions 91.0	Balance Sho <sup>r</sup> 77.0	tPower \ 91.0			
4 78	68.0			80.0	59.0	83.0			
10	00.0	70.	00.0	00.0	00.0	00.0			

```
900
                     78.0
                                   79.0
                                                                              69.0
                                             73.0
                                                        75.0
                                                                  72.0
       456
                     68.0
                                   76.0
                                             68.0
                                                         82.0
                                                                  53.0
                                                                              77.0
                     78.0
                                   69.0
                                             90.0
                                                         84.0
                                                                  86.0
       67
                                                                              75.0
            Jumping
                      Stamina
                                Strength
                                         LongShots
                                                      Aggression
                                                                  Interceptions \
       4
               63.0
                         90.0
                                    75.0
                                                91.0
                                                             76.0
                                                                             61.0
       78
               85.0
                         85.0
                                                80.0
                                                             73.0
                                                                             78.0
                                    88.0
       900
               69.0
                         76.0
                                    60.0
                                                58.0
                                                             71.0
                                                                             65.0
       456
                                    91.0
                                                64.0
               80.0
                         72.0
                                                             74.0
                                                                             30.0
       67
               75.0
                         75.0
                                    59.0
                                                79.0
                                                             57.0
                                                                             78.0
            Positioning
                         Vision Penalties
                                               Composure
                                                          Marking
                                                                    StandingTackle
                                        79.0
       4
                    87.0
                             94.0
                                                    88.0
                                                              68.0
                                                                               58.0
       78
                    79.0
                            85.0
                                        56.0
                                                    82.0
                                                              75.0
                                                                               77.0
       900
                    74.0
                            73.0
                                        53.0
                                                    70.0
                                                              62.0
                                                                               75.0
       456
                            72.0
                                        88.0
                                                    74.0
                                                              36.0
                    84.0
                                                                               51.0
       67
                    79.0
                            86.0
                                        75.0
                                                    85.0
                                                              67.0
                                                                               63.0
                            GKDiving
                                                    GKKicking
                                                                GKPositioning
            SlidingTackle
                                       GKHandling
       4
                      51.0
                                 15.0
                                              13.0
                                                           5.0
                                                                          10.0
       78
                      72.0
                                  7.0
                                              10.0
                                                           7.0
                                                                          16.0
       900
                      73.0
                                  7.0
                                               7.0
                                                          10.0
                                                                          12.0
       456
                      46.0
                                  6.0
                                               7.0
                                                          14.0
                                                                           7.0
                      65.0
       67
                                  6.0
                                              11.0
                                                           7.0
                                                                           9.0
            GKReflexes Release Clause
       4
                   13.0
                                €196.4M
       78
                    7.0
                                 €89.6M
       900
                   15.0
                                 €14.5M
       456
                    6.0
                                 €33.7M
       67
                   13.0
                                 €75.1M
[340]: df.loc[[2,56,789,4557,589],['Name','Jersey Number','Body Type']]
                                                                               #Accessses
        the name, jersey number and body type of the selected columns
[340]:
                          Name
                                 Jersey Number Body Type
       2
                     Neymar Jr
                                           10.0
                                                   Neymar
       56
               Bernardo Silva
                                                     Lean
                                           11.0
       789
                      A. Iwobi
                                          17.0
                                                   Normal
       4557
                      R. López
                                            6.0
                                                     Lean
       589
             A. Saint-Maximin
                                            7.0
                                                   Normal
```

 $\rightarrow$ where the preferred foot of a player is right, then selects all the columns $_{\sqcup}$ 

[346]: |fif.loc[fif['Preferred Foot'] == 'Right', 'Body Type': 'Weight'] #selects rows

⇔from the Body Type to Weight of right-footed players

```
[346]:
               Body Type Real Face Position Jersey Number
                                                                   Joined Loaned From \
              C. Ronaldo
                                                             Jul 10, 2018
       1
                                Yes
                                          ST
                                                          7
                                                                                     0
       2
                                                              Aug 3, 2017
                  Neymar
                                Yes
                                          LW
                                                         10
                                                                                     0
       3
                    Lean
                                Yes
                                          GK
                                                          1
                                                              Jul 1, 2011
                                                                                     0
       4
                  Normal
                                Yes
                                         RCM
                                                             Aug 30, 2015
                                                                                     0
                                                              Jul 1, 2012
       5
                  Normal
                                Yes
                                          LF
                                                                                     0
                                                         10
                                                              May 3, 2017
       18202
                    Lean
                                 No
                                          CM
                                                         22
                                                                                     0
       18203
                                          ST
                                                         21 Mar 19, 2018
                                                                                     0
                  Normal
                                 No
                                                              Jul 1, 2017
       18204
                  Normal
                                 No
                                          ST
                                                         33
                                                                                     0
                                                         34 Apr 24, 2018
       18205
                    Lean
                                 No
                                                                                     0
                                          RW
       18206
                    Lean
                                 No
                                          CM
                                                         33 Oct 30, 2018
                                                                                     0
             Contract Valid Until Height Weight
       1
                              2022
                                      6'2
                                           1831bs
       2
                              2022
                                      5'9 1501bs
       3
                              2020
                                      6'4 1681bs
       4
                              2023
                                     5'11 1541bs
       5
                              2020
                                      5'8 1631bs
                                      5'9 1341bs
       18202
                              2019
       18203
                              2020
                                      6'3 1701bs
       18204
                              2021
                                      5'8 1481bs
       18205
                              2019
                                     5'10 1541bs
       18206
                              2019
                                     5'10 1761bs
```

[13948 rows x 9 columns]

[]: #when you are passing an index in iloc the last index will be exclusive while win loc, the last index is inclusive

[347]: fif.loc[90:100,:] #it selects all rows from ninety to 100,with 100 inclusive while listing all the columns

\	Age	Name	ID	Unnamed: 0	[347]:
	29	Parejo	189513	90	90
	29	Paulinho	187961	91	91
	28	W. Szczęsny	186153	92	92
	29	A. Sánchez	184941	93	93
	28	Y. Brahimi	184267	94	94
	29	J. Boateng	183907	95	95
	31	A. Vidal	181872	96	96
	29	I. Perišić	181458	97	97
	32	E. Džeko	180930	98	98
	31	S. Khedira	179846	99	99
	29	Diego Costa	179844	100	100

```
Photo
                                                              Nationality
90
     https://cdn.sofifa.org/players/4/19/189513.png
                                                                     Spain
91
     https://cdn.sofifa.org/players/4/19/187961.png
                                                                    Brazil
92
     https://cdn.sofifa.org/players/4/19/186153.png
                                                                    Poland
93
     https://cdn.sofifa.org/players/4/19/184941.png
                                                                     Chile
     https://cdn.sofifa.org/players/4/19/184267.png
94
                                                                   Algeria
95
     https://cdn.sofifa.org/players/4/19/183907.png
                                                                   Germany
     https://cdn.sofifa.org/players/4/19/181872.png
96
                                                                     Chile
97
     https://cdn.sofifa.org/players/4/19/181458.png
                                                                   Croatia
98
     https://cdn.sofifa.org/players/4/19/180930.png
                                                       Bosnia Herzegovina
99
     https://cdn.sofifa.org/players/4/19/179846.png
                                                                   Germany
100
     https://cdn.sofifa.org/players/4/19/179844.png
                                                                     Spain
                                            Overall
                                                     Potential
                                     Flag
90
     https://cdn.sofifa.org/flags/45.png
                                                 85
                                                            85
91
     https://cdn.sofifa.org/flags/54.png
                                                 85
                                                            85
92
     https://cdn.sofifa.org/flags/37.png
                                                 85
                                                            87
93
     https://cdn.sofifa.org/flags/55.png
                                                 85
                                                            85
94
     https://cdn.sofifa.org/flags/97.png
                                                 85
                                                            85
95
     https://cdn.sofifa.org/flags/21.png
                                                            85
                                                 85
96
     https://cdn.sofifa.org/flags/55.png
                                                 85
                                                            85
97
     https://cdn.sofifa.org/flags/10.png
                                                 85
                                                            85
98
      https://cdn.sofifa.org/flags/8.png
                                                            85
                                                 85
99
     https://cdn.sofifa.org/flags/21.png
                                                            85
                                                 85
100
     https://cdn.sofifa.org/flags/45.png
                                                            85
                                                 85
                                Club
90
                         Valencia CF
     Guangzhou Evergrande Taobao FC
91
92
                            Juventus
93
                  Manchester United
94
                            FC Porto
95
                  FC Bayern München
96
                        FC Barcelona
97
                               Inter
98
                                Roma
99
                            Juventus
100
                     Atlético Madrid
                                                                        Special
                                             Club Logo
                                                         Value
                                                                  Wage
90
        https://cdn.sofifa.org/teams/2/light/461.png
                                                                           2119
                                                          €37M
                                                                  €66K
     https://cdn.sofifa.org/teams/2/light/111839.png
91
                                                          €37M
                                                                 €235K
                                                                           2245
92
         https://cdn.sofifa.org/teams/2/light/45.png
                                                          €32M
                                                                 €125K
                                                                           1270
93
         https://cdn.sofifa.org/teams/2/light/11.png
                                                        €37.5M
                                                                 €215K
                                                                           2172
94
        https://cdn.sofifa.org/teams/2/light/236.png
                                                          €39M
                                                                  €28K
                                                                           2030
         https://cdn.sofifa.org/teams/2/light/21.png
95
                                                                 €115K
                                                          €30M
                                                                           1948
        https://cdn.sofifa.org/teams/2/light/241.png
96
                                                          €26M
                                                                 €205K
                                                                           2230
```

```
97
         https://cdn.sofifa.org/teams/2/light/44.png
                                                            €37.5M
                                                                     €110K
                                                                                2199
         https://cdn.sofifa.org/teams/2/light/52.png
98
                                                            €30.5M
                                                                     €115K
                                                                                1931
99
         https://cdn.sofifa.org/teams/2/light/45.png
                                                              €33M
                                                                     €160K
                                                                                2154
        https://cdn.sofifa.org/teams/2/light/240.png
100
                                                            €38.5M
                                                                     €100K
                                                                                2003
    Preferred Foot
                      International Reputation
                                                   Weak Foot
                                                               Skill Moves
90
                                                          4.0
              Right
                                             2.0
                                                                        3.0
              Right
91
                                             3.0
                                                          3.0
                                                                        3.0
              Right
                                                          3.0
                                                                        1.0
92
                                             3.0
93
              Right
                                             4.0
                                                          3.0
                                                                        4.0
              Right
                                             3.0
                                                          3.0
                                                                        4.0
94
95
              Right
                                             4.0
                                                          4.0
                                                                        2.0
96
              Right
                                             4.0
                                                          4.0
                                                                        3.0
97
              Right
                                             3.0
                                                          5.0
                                                                        4.0
              Right
                                             3.0
98
                                                          5.0
                                                                        2.0
99
              Right
                                             3.0
                                                          4.0
                                                                        2.0
100
              Right
                                             4.0
                                                          4.0
                                                                        2.0
           Work Rate Body Type Real Face Position Jersey Number
                                                                              Joined
90
        Medium/ Low
                           Lean
                                        Yes
                                                  RCM
                                                                   10
                                                                        Jul 1, 2011
91
                                                                    9
         High/ High
                           Lean
                                        Yes
                                                  LDM
92
     Medium/ Medium
                                                   GK
                                                                    1
                                                                       Jul 19, 2017
                           Lean
                                        Yes
93
         High/ High
                                                   RW
                                                                    7
                                                                       Jan 22, 2018
                         Normal
                                        Yes
94
       High/ Medium
                         Normal
                                                                       Jul 22, 2014
                                         No
                                                   LM
                                                                    8
95
     Medium/ Medium
                         Stocky
                                                  RCB
                                                                   17
                                                                       Jul 14, 2011
                                        Yes
96
     Medium/ Medium
                         Normal
                                        Yes
                                                  CAM
                                                                    8
                                                                        Aug 6, 2018
                           Lean
                                                                        Sep 1, 2015
97
     Medium/ Medium
                                        Yes
                                                   LM
                                                                   44
98
     Medium/ Medium
                                        Yes
                                                   ST
                                                                    9
                                                                        Jul 1, 2015
                           Lean
99
         High/ High
                         Normal
                                        Yes
                                                  RCM
                                                                    6
                                                                        Jul 1, 2015
100
       High/ Medium
                                                                        Jan 1, 2018
                         Normal
                                        Yes
                                                   LS
                                                                   19
      Loaned From Contract Valid Until Height
                                                    Weight
                                                                      ST
                                                                             RS
                                                                                   LW
                                                               LS
                                                                                 77+2
90
                 0
                                      2020
                                               6'0
                                                    1631bs
                                                             74 + 2
                                                                    74+2
                                                                          74 + 2
91
                             Jun 30, 2019
                                                                                 79+3
     FC Barcelona
                                               6'0
                                                    1571bs
                                                             81+3
                                                                    81+3
                                                                          81+3
92
                 0
                                      2021
                                               6'5
                                                    1981bs
                                                                0
                                                                              0
93
                 0
                                      2022
                                               5'7
                                                    1631bs
                                                             81+3
                                                                    81+3
                                                                          81+3
                                                                                 82+3
94
                 0
                                     2019
                                               5'9
                                                    1461bs
                                                             75+3
                                                                          75+3
                                                                                 83+3
                                                                    75+3
95
                 0
                                     2021
                                               6'4
                                                    1981bs
                                                             63+3
                                                                    63+3
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                                                                                 63+3
96
                 0
                                     2021
                                             5'11
                                                    1651bs
                                                             78+3
                                                                    78+3
                                                                          78+3
                                                                                 76+3
97
                 0
                                     2022
                                               6'1
                                                    1761bs
                                                             82+3
                                                                    82+3
                                                                          82+3
                                                                                 82+3
                 0
                                      2020
                                               6'4
                                                    1851bs
                                                                          82+3
                                                                                 77+3
98
                                                             82+3
                                                                    82+3
99
                 0
                                     2021
                                               6'2
                                                    1981bs
                                                             77+3
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100
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                                      2021
                                               6'2
                                                    1901bs
                                                             82+3
                                                                    82+3
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       LF
              CF
                                                            LCM
                                                                    CM
                                                                         RCM
                     RF
                           RW
                                 LAM
                                        CAM
                                               RAM
                                                      LM
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90
     77+2
            77+2
                         77+2
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91
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92
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93
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97
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      LWB
            LDM
                   CDM
                          RDM
                                RWB
                                        LB
                                             LCB
                                                     CB
                                                          RCB
                                                                  RB
                                                                      Crossing \
90
     74+2
           77+2
                  77+2
                         77+2
                               74+2
                                      71+2
                                            69+2
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                                                         69+2
                                                                71+2
                                                                           84.0
           81+3
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                                            80+3
                                                   80+3
                                                                           64.0
91
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92
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93
     65+3
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100
     61+3
                                                                59+3
                                                                           65.0
     Finishing
                 HeadingAccuracy
                                   ShortPassing
                                                  Volleys Dribbling Curve \
                             61.0
                                                                          89.0
90
           79.0
                                            90.0
                                                      72.0
                                                                  78.0
          81.0
                             85.0
                                            84.0
                                                      75.0
                                                                  82.0
                                                                          66.0
91
92
           12.0
                             16.0
                                            32.0
                                                      14.0
                                                                  11.0
                                                                          16.0
93
           80.0
                             73.0
                                            77.0
                                                      83.0
                                                                  87.0
                                                                          79.0
94
          76.0
                             46.0
                                            79.0
                                                      73.0
                                                                  93.0
                                                                          84.0
95
           34.0
                             85.0
                                            75.0
                                                      52.0
                                                                  64.0
                                                                          53.0
96
          75.0
                             82.0
                                            83.0
                                                      78.0
                                                                  76.0
                                                                          76.0
           79.0
                                                      81.0
                                                                         73.0
97
                             80.0
                                            81.0
                                                                  84.0
          89.0
                             84.0
                                            77.0
                                                      77.0
                                                                          65.0
98
                                                                  76.0
           72.0
99
                             76.0
                                            85.0
                                                      78.0
                                                                  81.0
                                                                          68.0
           87.0
                                                      81.0
                                                                  77.0
                                                                          62.0
100
                             82.0
                                            65.0
                  LongPassing BallControl Acceleration SprintSpeed Agility \
     FKAccuracy
90
           90.0
                          87.0
                                        84.0
                                                       51.0
                                                                     43.0
                                                                               66.0
           72.0
                          80.0
                                        84.0
                                                       73.0
                                                                               69.0
91
                                                                     73.0
92
            14.0
                          36.0
                                        22.0
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                                                                     47.0
                                                                               55.0
93
            78.0
                          75.0
                                        86.0
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94
           78.0
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                                                       87.0
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                                                       67.0
95
           31.0
                          83.0
                                        70.0
                                                                     72.0
                                                                               56.0
96
           68.0
                          79.0
                                        82.0
                                                       60.0
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97
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           54.0
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98
                                        84.0
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99
            68.0
                          82.0
                                        84.0
                                                       54.0
                                                                     60.0
                                                                               55.0
```

100	59.0	59.0 5		83.0	74	1.0	76.0	58.0
	Reactions	Balance	ShotPow	ver Jumping	Stamina	Strength	LongShot	s \
90	78.0	72.0	78	3.0 51.0	78.0	72.0	82.	0
91	84.0	66.0	83	3.0 90.0	92.0	81.0	80.	0
92	82.0	51.0	15	5.0 71.0	45.0	65.0	14.	0
93	83.0	87.0	84	1.0 87.0	83.0	72.0	81.	0
94	84.0	87.0	69	9.0 72.0	85.0	49.0	76.	0
95	82.0	52.0	78	3.0 74.0	69.0	91.0	58.	0
96	84.0	75.0	86	85.0	83.0	79.0	85.	0
97	81.0	74.0	84	1.0 84.0	89.0	78.0	79.	0
98	83.0	36.0	86	66.0	76.0	80.0	79.	0
99	87.0	54.0	82	2.0 68.0	78.0	87.0	78.	0
100	85.0	53.0	83	3.0 64.0	76.0	92.0	74.0	0
	Aggression	ı Interce	ptions	Positioning	Vision	Penalties	Composur	e \
90	58.0	)	81.0	81.0	86.0	83.0	78.	0
91	81.0	)	81.0	84.0	78.0	71.0	80.	0
92	40.0	)	15.0	14.0	48.0	18.0	65.	0
93	79.0	)	46.0	84.0	82.0	77.0	84.	0
94	46.0	)	38.0	83.0	79.0	75.0	90.	0
95	81.0	)	81.0	47.0	75.0	46.0	84.	0
96	93.0	)	84.0	80.0	80.0	81.0	81.	0
97	65.0	)	69.0	85.0	79.0	76.0	80.	0
98	51.0	)	50.0	89.0	74.0	67.0	83.	0
99	82.0	)	86.0	79.0	82.0	69.0	84.	0
100	93.0	)	40.0	87.0	74.0	75.0	83.	0
	Marking S	StandingTa	ckle Sl	LidingTackle	GKDiving	g GKHandli	ng GKKic	king \
90	69.0		68.0	60.0	5.0	9	.0	12.0
91	75.0		81.0	73.0	16.0	16	.0	11.0
92	20.0		13.0	12.0	85.0	81	.0	71.0
93	38.0		44.0	35.0	10.0	10	.0	15.0
94	51.0		36.0	25.0	13.0	) 16	.0	12.0
95	84.0		87.0	87.0	7.0	) 12	.0	15.0
96	82.0		87.0	86.0	4.0	) 2	.0	4.0
97	64.0		52.0	54.0	6.0	7	.0	10.0
98	58.0		28.0	16.0	9.0	) 11	.0	13.0
99	80.0		83.0	76.0	11.0	) 9	.0	5.0
100	58.0		39.0	34.0	11.0	13	.0	12.0
	GKPosition	ing GKRe	flexes R	Release Clau	se			
90	1	4.0	8.0	€77.	7M			
91		6.0	8.0		0			
92	8	35.0	87.0	€55.	2M			
93	1	2.0	13.0	€69.	4M			
94		7.0	7.0	€7	8M			

```
95
               6.0
                           5.0
                                       €49.5M
96
               2.0
                           4.0
                                       €53.3M
97
               9.0
                           6.0
                                       €63.8M
98
              15.0
                          15.0
                                       €51.9M
99
              15.0
                           8.0
                                       €54.5M
100
              8.0
                          11.0
                                       €78.9M
```

[353]: #for loc you can search for a number or a string for example: #the index can be a string for instance a name

[353]:		Unnamed: 0	ID	Name Age \
	0	0	158023	L. Messi 31
	1	1	20801	Cristiano Ronaldo 33
	2	2	190871	Neymar Jr 26
	3	3	193080	De Gea 27
	4	4	192985	K. De Bruyne 27
	•••	•••	•••	
	18202	18202	238813	J. Lundstram 19
	18203	18203	243165	N. Christoffersson 19
	18204	18204	241638	B. Worman 16
	18205	18205	246268	D. Walker-Rice 17
	18206	18206	246269	G. Nugent 16
				Photo Nationality
	0	_		.org/players/4/19/158023.png Argentina
	1	_		a.org/players/4/19/20801.png Portugal
	2	<del>-</del>		.org/players/4/19/190871.png Brazil
	3	<del>-</del>		.org/players/4/19/193080.png Spain
	4	https://cdn	.sofifa.	.org/players/4/19/192985.png Belgium
	•••			<b></b>
	18202	_		.org/players/4/19/238813.png England
	18203	-		.org/players/4/19/243165.png Sweden
	18204	<del>-</del>		.org/players/4/19/241638.png England
	18205	<del>-</del>		.org/players/4/19/246268.png England
	18206	https://cdn	.sofifa.	.org/players/4/19/246269.png England
	•			Flag Overall Potential \
	0	-		.org/flags/52.png 94 94
	1	-		.org/flags/38.png 94 94
	2	_		org/flags/54.png 92 93
	3	<del>-</del>		.org/flags/45.png 91 93
	4	https://cd	n.sofifa	a.org/flags/7.png 91 92
		1 // 1	c · c	
	18202	<del>-</del>		org/flags/14.png 47 65
	18203	<del>-</del>		org/flags/46.png 47 63
	18204	-		org/flags/14.png 47 67
	18205	https://cdn	.sofifa.	org/flags/14.png 47 66

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0	П.	a D	Club		,	c /.		ıb Logo	\
0	F (	C Barce		-		fa.org/teams	_		
1			entus	_		ifa.org/tear	_		
2	Paris Sa			-		ifa.org/tear	_		
3	Manche			-		ifa.org/tear	•	- 0	
4	Mancl	hester	City	https://	cdn.sof	ifa.org/tear	ns/2/light,	/10.png	
•••		••	••					••	
18202		e Alexa		-		fa.org/teams	•	- 0	
18203	Tre	lleborg	gs FF ]	https://d	cdn.sofi	fa.org/teams	s/2/light/7	703.png	
18204	Cambr	idge Ur	nited h	ttps://co	dn.sofif	a.org/teams/	/2/light/19	944.png	
18205	Tranmere Rovers https://cdn.sofifa.org/teams/2/light/15048.png								
18206	Trans	mere Ro	overs ht	tps://cdr	n.sofifa	org/teams/2	2/light/150	048.png	
	Value	Wage	Special	Preferre	ed Foot	Internation	nal Reputat	tion \	
0	€110.5M	€565K	2202		Left			5.0	
1	€77M	€405K	2228		Right			5.0	
2	€118.5M	€290K	2143		Right			5.0	
3	€72M	€260K	1471		Right			4.0	
4	€102M	€355K	2281		Right			4.0	
•••		•		•••	O		•••		
18202	€60K	€1K	1307		Right			1.0	
18203	€60K	€1K	1098		Right			1.0	
18204	€60K	€1K	1189		Right			1.0	
18205	€60K	€1K	1228		Right			1.0	
18206	€60K	€1K	1321		Right			1.0	
10200	GOOM	GIII	1021		1018110			1.0	
	Weak Foot	t Skil	ll Moves	Wor	ck Rate	Body Type	Real Face	Positio	on \
0	4.0		4.0	Medium/		Messi	Yes		RF
1	4.0		5.0		gh/ Low	C. Ronaldo	Yes		ST
2	5.0		5.0		Medium	Neymar	Yes		_W
3	3.0		1.0	Medium/		Lean	Yes		GK
4	5.0		4.0		n/ High	Normal	Yes	RO	
-	0.	o .	1.0	6-	1, 111811	Wormar	100	100	J11
 18202	2.0	0	2.0	Medium/	Medium	Lean	 No	(	CM
18203	2.0		2.0	Medium/					ST
18204	3.0		2.0			Normal			ST
18205	3.0		2.0			Lean			RW
18206	3.0	J	2.0	Mearum/	Mearum	Lean	No	(	CM
	Jersey Nur	mhor	Joi	nod Ioon	d Erom	Contract Val	lid Until I	Joiah+	\
0	sersey Nu		Jul 1, 20		0	Contract va.	2021	5'7	`
			Jul 1, 20 Jul 10, 20		_		2021		
1					0			5'9	
2			Aug 3, 20		0		2022		
3			Jul 1, 20		0			6'4	
4		7 <i>I</i>	Aug 30, 20	J15	0		2023	5'11	

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22
                        May 3, 2017
                                                                               5'9
18202
                                                                      2019
                                                 0
18203
                   21
                       Mar 19, 2018
                                                                      2020
                                                                               6'3
18204
                   33
                        Jul 1, 2017
                                                                      2021
                                                                               5'8
                                                 0
18205
                       Apr 24, 2018
                                                                      2019
                                                                              5'10
                   34
                                                 0
                       Oct 30, 2018
18206
                   33
                                                 0
                                                                      2019
                                                                              5'10
       Weight
                  LS
                         ST
                                RS
                                       LW
                                              LF
                                                     CF
                                                           RF
                                                                  RW
                                                                        LAM
                                                                               CAM
0
       1591bs
                                                                       93+2
                88+2
                       88+2
                              88+2
                                     92+2
                                           93+2
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                                                         93+2
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       1831bs
                                     89+3
2
                              84+3
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                                                  89+3
                                                         89+3
                                                                89+3
                                                                       89+3
       1501bs
                84+3
                       84+3
                                                                              89+3
3
       1681bs
                    0
                           0
                                 0
                                        0
                                               0
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                                                             0
                                           87+3
       1541bs
                82+3
                       82+3
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                                     87+3
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                                                                             88+3
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18202
       1341bs
                 42+2
                              42+2
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                                           44+2
                       42+2
       1701bs
                                                         42+2
18203
                45+2
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18204
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18205
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18206
       1761bs
                43+2
                       43+2
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                                                                       45+2
                                                                              45+2
                      LCM
        RAM
                LM
                              CM
                                    RCM
                                           RM
                                                 LWB
                                                        LDM
                                                               CDM
                                                                      RDM
                                                                            RWB
                                                                                    LB
                                                       61+2
0
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18202
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18204
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18205
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18206
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        LCB
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       47+2
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                                       84.0
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                                                                       70.0
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                                       17.0
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18205
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18206
       47+2
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ShortPassing Volleys Dribbling Curve FKAccuracy LongPassing \

0	90	.0 86	5.0	97.0	93.0	)	94.0	87.0	
1	81	.0 87	7.0	88.0	81.0	)	76.0	77.0	
2	84	.0 84	1.0	96.0	88.0	)	87.0	78.0	
3	50	.0 13	3.0	18.0	21.0	)	19.0	51.0	
4	92	.0 82	2.0	86.0	85.0	)	83.0	91.0	
•••	•••	•••	•••		••	•	•••		
1820	)2 49	.0 25	5.0	42.0	30.0	)	34.0	45.0	
1820	)3 43	.0 36	5.0	39.0	32.0	)	20.0	25.0	
1820			3.0	45.0	38.0		27.0	28.0	
1820	)5 42	.0 40	0.0	51.0	34.0	)	32.0	32.0	
1820			0.0	43.0	40.0		34.0	44.0	
	BallContro	l Accele	eration	Sprint	Speed	Agility	Reactions	Balanc	:e \
0	96.		91.0	•	86.0	91.0			
1	94.		89.0		91.0	87.0			
2	95.		94.0		90.0	96.0			
3	42.		57.0		58.0	60.0			
4	91.		78.0		76.0	79.0			
	•••				•••	•••	•••		
1820	)2 43.	0	54.0		57.0	60.0	49.0	76.	0
1820			41.0		39.0	38.0			
1820			70.0		69.0	50.0			
1820			61.0		60.0	52.0			
1820			57.0		55.0	55.0			
			0.10			00.0	02.1		
	ShotPower	Jumping	Stamina	a Stre	ngth	LongShot	s Aggressi	ion \	
0	85.0	68.0	72.0		59.0	94.		3.0	
1	95.0	95.0	88.0		79.0	93.		3.0	
2	80.0	61.0	81.0		49.0	82.		5.0	
3	31.0	67.0	43.0		64.0	12.		3.0	
4	91.0	63.0	90.0		75.0	91.		5.0	
				••		•••			
1820	2 43.0	55.0	40.0		47.0	38.	0 46	3.0	
1820		47.0	43.0	)	67.0	42.	0 47	7.0	
1820		60.0	55.0		32.0	45.		2.0	
1820		42.0	40.0		48.0	34.		3.0	
1820		62.0	47.0		60.0	32.		3.0	
	2010	0				0		,	
	Intercepti	ons Posi	tioning	Visio	n Pen	alties	Composure	Marking	\
0	-	2.0	94.0	94.		75.0	96.0	33.0	•
1		9.0	95.0	82.		85.0	95.0	28.0	
2		6.0	89.0	87.		81.0	94.0	27.0	
3		0.0	12.0	68.		40.0	68.0	15.0	
4		1.0	87.0	94.		79.0	88.0	68.0	
	· ·	- · •		01.				30.0	
 1820	)2 4	6.0	39.0	52.		43.0	 45.0	40.0	
1820		6.0	46.0	33.		43.0	42.0	22.0	
	-	- · ·	10.0		_	-0.0	12.0	,	

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18204
                        15.0
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       18205
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       18206
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              StandingTackle
                               SlidingTackle GKDiving
                                                          GKHandling
                                                                      GKKicking \
                                                                11.0
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              GKPositioning
                              GKReflexes Release Clause
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       0 https://cdn.sofifa.org/players/4/19/158023.png
                                           Flag Overall Potential
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       0 https://cdn.sofifa.org/flags/52.png
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                                               Club Logo
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       0 https://cdn.sofifa.org/teams/2/light/241.png
                                                          €110.5M
                                                                    €565K
                                                                               2202
         Preferred Foot International Reputation Weak Foot Skill Moves \
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0 Left 5.0 4.0 4.0

Work Rate Body Type Real Face Position Jersey Number Joined \ Messi RF O Medium/ Medium Yes 10 Jul 1, 2004 Loaned From Contract Valid Until Height Weight LS ST RS 2021 5'7 1591bs 88+2 88+2 88+2 92+2 CF CAM RAM LM LCM CM RCM LF RF RW LAM 0 93+2 93+2 93+2 92+2 93+2 93+2 91+2 84+2 84+2 84+2 91+2 LDM CDM RDM RWB LB LCB CB RCB RB Crossing \ 0 64+2 61+2 61+2 61+2 64+2 59+2 47+2 47+2 59+2 Finishing HeadingAccuracy ShortPassing Volleys Dribbling Curve \ 0 95.0 70.0 90.0 86.0 97.0 93.0 FKAccuracy LongPassing BallControl Acceleration SprintSpeed Agility \ 87.0 96.0 91.0 86.0 91.0 94.0 Reactions Balance ShotPower Jumping Stamina Strength LongShots \ 95.0 85.0 68.0 72.0 59.0 0 95.0 94.0 Aggression Interceptions Positioning Vision Penalties Composure \ 22.0 94.0 94.0 75.0 0 48.0 96.0 Marking StandingTackle SlidingTackle GKDiving GKHandling GKKicking \ 0 33.0 28.0 26.0 6.0 11.0 GKPositioning GKReflexes Release Clause 14.0 8.0 €226.5M

[]: