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           0  158023          L. Messi   31
      1           1   20801  Cristiano Ronaldo   33
      2           2  190871         Neymar Jr   26

                                              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

                                      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
      1            Juventus   https://cdn.sofifa.org/teams/2/light/45.png     €77M
      2  Paris Saint-Germain   https://cdn.sofifa.org/teams/2/light/73.png  €118.5M

          Wage  Special Preferred Foot  International Reputation  Weak Foot  \
      0  €565K     2202           Left                      5.0        4.0
      1  €405K     2228          Right                      5.0        4.0
      2  €290K     2143          Right                      5.0        5.0

          Skill Moves      Work Rate  Body Type Real Face Position  Jersey Number  \
      0          4.0  Medium/ Medium      Messi       Yes       RF           10.0
      1          5.0     High/ Low  C. Ronaldo       Yes       ST            7.0
      2          5.0  High/ Medium      Neymar       Yes       LW           10.0
```

	Joined	Loaned From	Contract Valid Until	Height	Weight	LS	ST
0	Jul 1, 2004	NaN	2021	5'7	159lbs	88+2	88+2
1	Jul 10, 2018	NaN	2022	6'2	183lbs	91+3	91+3
2	Aug 3, 2017	NaN	2022	5'9	150lbs	84+3	84+3

	RS	LW	LF	CF	RF	RW	LAM	CAM	RAM	LM	LCM	CM
0	88+2	92+2	93+2	93+2	93+2	92+2	93+2	93+2	93+2	91+2	84+2	84+2
1	91+3	89+3	90+3	90+3	90+3	89+3	88+3	88+3	88+3	88+3	81+3	81+3
2	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
0	84+2	91+2	64+2	61+2	61+2	61+2	64+2	59+2	47+2	47+2	47+2	59+2
1	81+3	88+3	65+3	61+3	61+3	61+3	65+3	61+3	53+3	53+3	53+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
1	84.0	94.0	89.0	81.0	87.0	88.0
2	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
1	81.0	76.0	77.0	94.0	89.0	91.0
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
1	87.0	96.0	70.0	95.0	95.0	88.0	79.0
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
1	93.0	63.0	29.0	95.0	82.0	85.0
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
1	95.0	28.0	31.0	23.0	7.0	11.0
2	94.0	27.0	24.0	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
       ↪Roman'})

      plt.show()
```
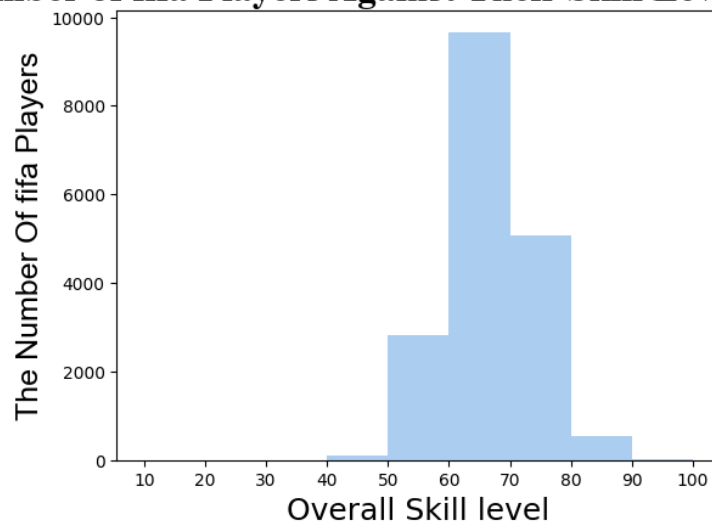
The Number of fifa Players Against Their Skill Level in FIFA 2018

[15]: `fifa.head(3)`

[15]:
```
   Unnamed: 0      ID               Name  Age  \
0           0  158023           L. Messi   31
1           1   20801  Cristiano Ronaldo   33
2           2  190871          Neymar Jr   26


                                          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


                               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
1             Juventus   https://cdn.sofifa.org/teams/2/light/45.png     €77M
2  Paris Saint-Germain   https://cdn.sofifa.org/teams/2/light/73.png  €118.5M


     Wage  Special Preferred Foot  International Reputation  Weak Foot  \
0  €565K     2202          Left                        5.0        4.0
1  €405K     2228         Right                        5.0        4.0
2  €290K     2143         Right                        5.0        5.0


     Skill Moves        Work Rate   Body Type Real Face Position  Jersey Number  \
```

```
   0        4.0  Medium/ Medium      Messi      Yes        RF        10.0
   1        5.0      High/ Low  C. Ronaldo      Yes        ST         7.0
   2        5.0   High/ Medium      Neymar      Yes        LW        10.0


          Joined Loaned From Contract Valid Until Height  Weight     LS    ST  \
0   Jul 1, 2004         NaN                   2021    5'7  159lbs  88+2  88+2
1  Jul 10, 2018         NaN                   2022    6'2  183lbs  91+3  91+3
2   Aug 3, 2017         NaN                   2022    5'9  150lbs  84+3  84+3


     RS    LW    LF    CF    RF    RW   LAM   CAM   RAM    LM   LCM    CM  \
0  88+2  92+2  93+2  93+2  93+2  92+2  93+2  93+2  93+2  91+2  84+2  84+2
1  91+3  89+3  90+3  90+3  90+3  89+3  88+3  88+3  88+3  88+3  81+3  81+3
2  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  \
0  84+2  91+2  64+2  61+2  61+2  61+2  64+2  59+2  47+2  47+2  47+2  59+2
1  81+3  88+3  65+3  61+3  61+3  61+3  65+3  61+3  53+3  53+3  53+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
1      84.0       94.0             89.0          81.0     87.0       88.0
2      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
1   81.0        76.0         77.0         94.0          89.0         91.0
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
1     87.0       96.0     70.0       95.0     95.0     88.0      79.0
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
1       93.0        63.0           29.0         95.0    82.0       85.0
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
1       95.0     28.0            31.0           23.0       7.0        11.0
2       94.0     27.0            24.0           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
```

[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]:
```python
bins=(80,90,100) #there is no data for potential levels between zero and fifty
 ↪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()
```
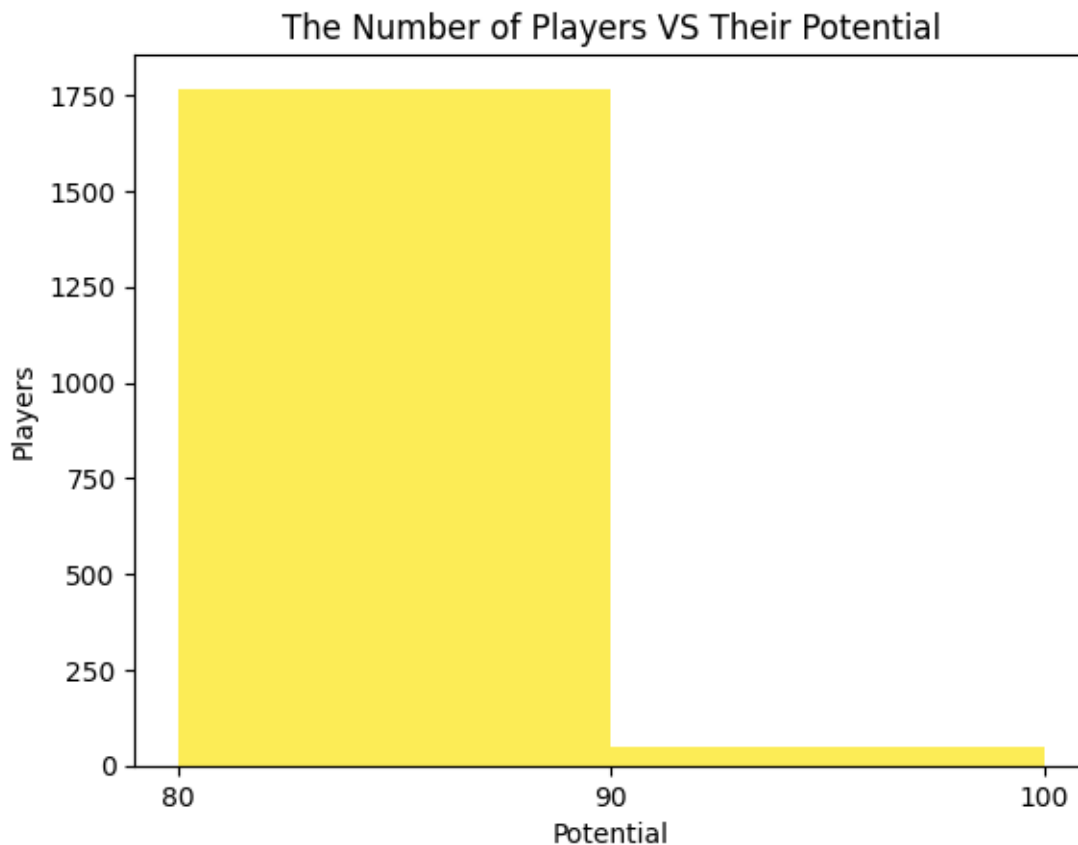
The Number of Players VS Their Potential

```
[18]: fifa['Preferred Foot']
```

```
[18]: 0          Left
      1          Right
      2          Right
      3          Right
      4          Right
                 …
      18202      Right
      18203      Right
      18204      Right
      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

```
[20]: left=(fifa.loc[fifa['Preferred Foot']=='Left'])
```

```
[21]: left
```

```
[21]:        Unnamed: 0      ID                 Name   Age  \
       0               0  158023            L. Messi    31
       13             13  168542          David Silva   32
       15             15  211110           P. Dybala    24
       17             17  194765        A. Griezmann   27
       19             19  192119        T. Courtois    26
       ...           ...     ...                 ...   ...
       18172       18172  243636          C. Hawkins   18
       18175       18175  243649           E. Clarke   19
       18191       18191  245570  J. Norville-Williams  18
       18200       18200  231381           J. Young    18
       18201       18201  243413            D. Walsh   18

                                               Photo           Nationality  \
       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
       18175    https://cdn.sofifa.org/players/4/19/243649.png          England
       18191    https://cdn.sofifa.org/players/4/19/245570.png          England
       18200    https://cdn.sofifa.org/players/4/19/231381.png         Scotland
       18201    https://cdn.sofifa.org/players/4/19/243413.png  Republic of Ireland

                                  Flag  Overall  Potential  \
       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       89         90
       19        https://cdn.sofifa.org/flags/7.png       89         90
       ...                               ...              ...        ...
       18172    https://cdn.sofifa.org/flags/14.png       48         65
       18175    https://cdn.sofifa.org/flags/14.png       48         59
       18191    https://cdn.sofifa.org/flags/14.png       47         65
       18200    https://cdn.sofifa.org/flags/42.png       47         62
       18201    https://cdn.sofifa.org/flags/25.png       47         68

                       Club                             Club Logo  \
       0        FC Barcelona     https://cdn.sofifa.org/teams/2/light/241.png
```

```
13         Manchester City       https://cdn.sofifa.org/teams/2/light/10.png
15               Juventus        https://cdn.sofifa.org/teams/2/light/45.png
17        Atlético Madrid        https://cdn.sofifa.org/teams/2/light/240.png
19            Real Madrid        https://cdn.sofifa.org/teams/2/light/243.png
...                   ...                                                 ...
18172      Burton Albion   https://cdn.sofifa.org/teams/2/light/15015.png
18175    Fleetwood Town   https://cdn.sofifa.org/teams/2/light/112260.png
18191  Cambridge United    https://cdn.sofifa.org/teams/2/light/1944.png
18200      Swindon Town    https://cdn.sofifa.org/teams/2/light/1934.png
18201      Waterford FC     https://cdn.sofifa.org/teams/2/light/753.png

         Value    Wage   Special Preferred Foot   International Reputation  \
0       €110.5M   €565K     2202           Left                       5.0
13        €60M   €285K     2115           Left                       4.0
15        €89M   €205K     2092           Left                       3.0
17        €78M   €145K     2246           Left                       4.0
19      €53.5M   €240K     1311           Left                       4.0
...        ...     ...      ...            ...                       ...
18172     €50K    €1K      778           Left                       1.0
18175     €40K    €1K     1225           Left                       1.0
18191     €50K    €1K     1250           Left                       1.0
18200     €60K    €1K     1203           Left                       1.0
18201     €60K    €1K     1098           Left                       1.0

        Weak Foot   Skill Moves     Work Rate Body Type Real Face Position  \
0            4.0           4.0  Medium/ Medium     Messi      Yes       RF
13           2.0           4.0    High/ Medium    Normal      Yes      LCM
15           3.0           4.0    High/ Medium    Normal      Yes       LF
17           3.0           4.0     High/ High      Lean      Yes      CAM
19           2.0           1.0  Medium/ Medium  Courtois      Yes       GK
...          ...           ...             ...       ...       ...      ...
18172        3.0           1.0  Medium/ Medium    Stocky       No       GK
18175        2.0           2.0  Medium/ Medium      Lean       No       LB
18191        3.0           2.0   Medium/ High      Lean       No       LB
18200        2.0           2.0  Medium/ Medium      Lean       No       ST
18201        3.0           2.0  Medium/ Medium      Lean       No       RB

        Jersey Number        Joined Loaned From Contract Valid Until Height  \
0               10.0   Jul 1, 2004        NaN                   2021    5'7
13              21.0  Jul 14, 2010        NaN                   2020    5'8
15              21.0   Jul 1, 2015        NaN                   2022   5'10
17               7.0  Jul 28, 2014        NaN                   2023    5'9
19               1.0   Aug 9, 2018        NaN                   2024    6'6
...              ...           ...        ...                    ...    ...
18172           13.0   May 9, 2018        NaN                   2019    6'2
18175            3.0  May 23, 2018        NaN                   2019    5'8
18191           24.0   Jul 1, 2018        NaN                   2021   5'11
```

18200	21.0	Oct 17, 2015	NaN		2019	5'9
18201	29.0	Apr 20, 2018	NaN		2018	6'1

	Weight	LS	ST	RS	LW	LF	CF	RF	RW	LAM	CAM \
0	159lbs	88+2	88+2	88+2	92+2	93+2	93+2	93+2	92+2	93+2	93+2
13	148lbs	77+3	77+3	77+3	85+3	84+3	84+3	84+3	85+3	87+3	87+3
15	165lbs	83+3	83+3	83+3	87+3	86+3	86+3	86+3	87+3	87+3	87+3
17	161lbs	86+3	86+3	86+3	87+3	87+3	87+3	87+3	87+3	86+3	86+3
19	212lbs	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
…	…	…	…	…	…	…	…	…	…	…	
18172	165lbs	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
18175	154lbs	37+2	37+2	37+2	40+2	38+2	38+2	38+2	40+2	37+2	37+2
18191	168lbs	39+2	39+2	39+2	43+2	40+2	40+2	40+2	43+2	41+2	41+2
18200	157lbs	45+2	45+2	45+2	44+2	45+2	45+2	45+2	44+2	44+2	44+2
18201	168lbs	32+2	32+2	32+2	29+2	30+2	30+2	30+2	29+2	28+2	28+2

	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
13	87+3	85+3	85+3	85+3	85+3	85+3	69+3	70+3	70+3	70+3	69+3	64+3
15	87+3	86+3	79+3	79+3	79+3	86+3	62+3	58+3	58+3	58+3	62+3	56+3
17	86+3	86+3	80+3	80+3	80+3	86+3	70+3	67+3	67+3	67+3	70+3	67+3
19	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
…	…	…	…	…	…	…	…	…	…	…	…	
18172	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
18175	37+2	41+2	36+2	36+2	36+2	41+2	46+2	41+2	41+2	41+2	46+2	46+2
18191	41+2	43+2	40+2	40+2	40+2	43+2	45+2	44+2	44+2	44+2	45+2	45+2
18200	44+2	41+2	37+2	37+2	37+2	41+2	31+2	28+2	28+2	28+2	31+2	30+2
18201	28+2	30+2	30+2	30+2	30+2	30+2	39+2	38+2	38+2	38+2	39+2	42+2

	LCB	CB	RCB	RB	Crossing	Finishing	HeadingAccuracy \
0	47+2	47+2	47+2	59+2	84.0	95.0	70.0
13	57+3	57+3	57+3	64+3	84.0	76.0	54.0
15	45+3	45+3	45+3	56+3	82.0	84.0	68.0
17	61+3	61+3	61+3	67+3	82.0	90.0	84.0
19	NaN	NaN	NaN	NaN	14.0	14.0	13.0
…	…	…	…	…	…		
18172	NaN	NaN	NaN	NaN	13.0	9.0	10.0
18175	46+2	46+2	46+2	46+2	40.0	25.0	38.0
18191	47+2	47+2	47+2	45+2	47.0	26.0	39.0
18200	27+2	27+2	27+2	30+2	28.0	47.0	47.0
18201	46+2	46+2	46+2	42+2	22.0	23.0	45.0

	ShortPassing	Volleys	Dribbling	Curve	FKAccuracy	LongPassing \
0	90.0	86.0	97.0	93.0	94.0	87.0
13	93.0	82.0	89.0	82.0	77.0	87.0
15	87.0	88.0	92.0	88.0	88.0	75.0
17	83.0	87.0	88.0	84.0	78.0	76.0

19	33.0	12.0	13.0	19.0	20.0	35.0
...	...	...	...	...	...	...
18172	24.0	6.0	14.0	13.0	11.0	15.0
18175	29.0	21.0	48.0	34.0	32.0	21.0
18191	39.0	27.0	45.0	29.0	21.0	41.0
18200	42.0	37.0	39.0	32.0	25.0	30.0
18201	25.0	27.0	21.0	21.0	27.0	27.0

	BallControl	Acceleration	SprintSpeed	Agility	Reactions	Balance \
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	39.0	43.0	48.0

	ShotPower	Jumping	Stamina	Strength	LongShots	Aggression \
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	69.0
19	36.0	68.0	38.0	70.0	17.0	23.0
...	...	...	...	...	...	...
18172	20.0	47.0	22.0	41.0	5.0	18.0
18175	26.0	62.0	62.0	52.0	26.0	54.0
18191	26.0	61.0	38.0	55.0	25.0	55.0
18200	44.0	77.0	31.0	31.0	51.0	26.0
18201	39.0	74.0	39.0	52.0	16.0	44.0

	Interceptions	Positioning	Vision	Penalties	Composure	Marking \
0	22.0	94.0	94.0	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	46.0	37.0	58.0	50.0	15.0
18201	45.0	20.0	31.0	38.0	43.0	44.0

```
       StandingTackle  SlidingTackle  GKDiving  GKHandling  GKKicking  \
0               28.0           26.0       6.0        11.0       15.0
13              53.0           29.0       6.0        15.0        7.0
15              20.0           20.0       5.0         4.0        4.0
17              47.0           48.0      14.0         8.0       14.0
19              18.0           16.0      85.0        91.0       72.0
...              ...            ...       ...         ...        ...
18172           10.0           12.0      53.0        45.0       56.0
18175           52.0           49.0       9.0        12.0       15.0
18191           42.0           46.0      15.0        13.0        6.0
18200           17.0           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
18175           12.0         7.0            €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`

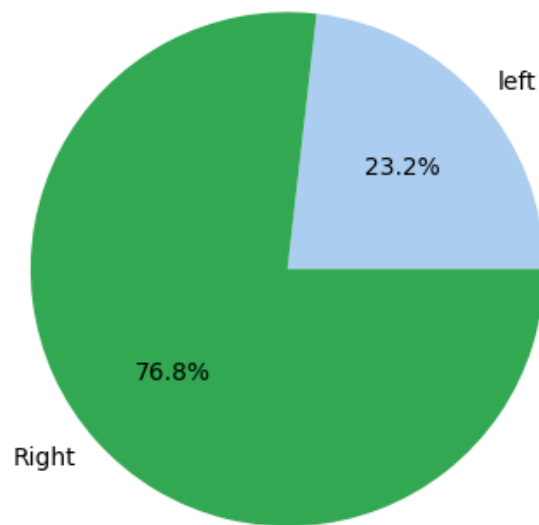[26]: 4211

[27]: `right`

[27]: 13948

```
[28]: labels=['left','Right']
      colors=['#abcdef','#32a852']

      plt.pie([left,right],labels=labels,colors=colors,autopct='%.1f%%')

      plt.title('The Distribution of left-foot and Right-foot␣
       ↪Players',fontdict={'fontname':'Times New Roman','fontsize':22})

      plt.show()
```

The Distribution of left-foot and Right-foot Players

left

23.2%

76.8%

Right

3 Pie Chart Number Two

```
[29]: fifa['Weight']
```

```
[29]: 0        159lbs
      1        183lbs
      2        150lbs
      3        168lbs
      4        154lbs
                 …
      18202    134lbs
      18203    170lbs
```

```
18204     148lbs
18205     154lbs
18206     176lbs
Name: Weight, Length: 18207, dtype: object
```

[30]: `fifa.head(2)`

[30]:
```
   Unnamed: 0      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    Argentina
1   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   Value   Wage  Special  \
0  https://cdn.sofifa.org/teams/2/light/241.png  €110.5M  €565K     2202
1   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  \
0  Medium/ Medium       Messi       Yes       RF           10.0    Jul 1, 2004
1       High/ Low  C. Ronaldo       Yes       ST            7.0   Jul 10, 2018


  Loaned From Contract Valid Until Height   Weight    LS    ST    RS    LW  \
0         NaN                2021    5'7  159lbs  88+2  88+2  88+2  92+2
1         NaN                2022    6'2  183lbs  91+3  91+3  91+3  89+3


     LF    CF    RF    RW   LAM   CAM   RAM    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  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
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
1       94.0             89.0          81.0     87.0       88.0   81.0
```

	FKAccuracy	LongPassing	BallControl	Acceleration	SprintSpeed	Agility \
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 \
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

[31]:
```python
fifa['Weight']
```

[31]:
```
0        159lbs
1        183lbs
2        150lbs
3        168lbs
4        154lbs
          ...
18202    134lbs
18203    170lbs
18204    148lbs
18205    154lbs
18206    176lbs
Name: Weight, Length: 18207, dtype: object
```

[32]:
```python
fifa['Weight']=[x.strip('lbs') if type(x)==str else x for x in fifa['Weight']]
```

[33]:
```python
fifa['Weight']
```

[33]:
```
0        159
1        183
2        150
3        168
4        154
         ...
18202    134
18203    170
```

```
18204    148
18205    154
18206    176
Name: Weight, Length: 18207, dtype: object
```

[34]:
```python
fifa['Weight'][0]
```

[34]:
```
'159'
```

[35]:
```python
fifa['Weight']=[int(x.strip('lbs')) if type(x)==str else x for x in↵
      ↪fifa['Weight']]
```

[36]:
```python
fifa['Weight'][0]
```

[36]:
```
159.0
```

[37]:
```python
light=(fifa.loc[fifa['Weight']<125]).count()[0]
```

[38]:
```python
light_medium=fifa.loc[(fifa['Weight']>=125) & (fifa['Weight']<150)].count()[0]
```

[39]:
```python
medium=fifa.loc[(fifa['Weight']>=150) & (fifa['Weight']<175)].count()[0]
```

[40]:
```python
medium_heavy=fifa.loc[(fifa['Weight']>=175) & (fifa['Weight']<200)].count()[0]
```

[41]:
```python
heavy=fifa.loc[(fifa['Weight']>=200)].count()[0]
```

[42]:
```python
heavy
```

[42]:
```
369
```

[43]:
```python
medium_heavy
```

[43]:
```
4583
```

[44]:
```python
medium
```

[44]:
```
10876
```

[45]:
```python
light_medium
```

[45]:
```
2290
```

[46]:
```python
light
```

[46]:
```
41
```

[47]:
```python
plt.style.use('fivethirtyeight')

weights=[light,light_medium,medium,medium_heavy,heavy]
```

```
labels=['under 125 lbs','125-150 lbs','150-175 lbs','175-200 lbs','Over 200␣
  ↪lbs']

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

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

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

plt.show()
```
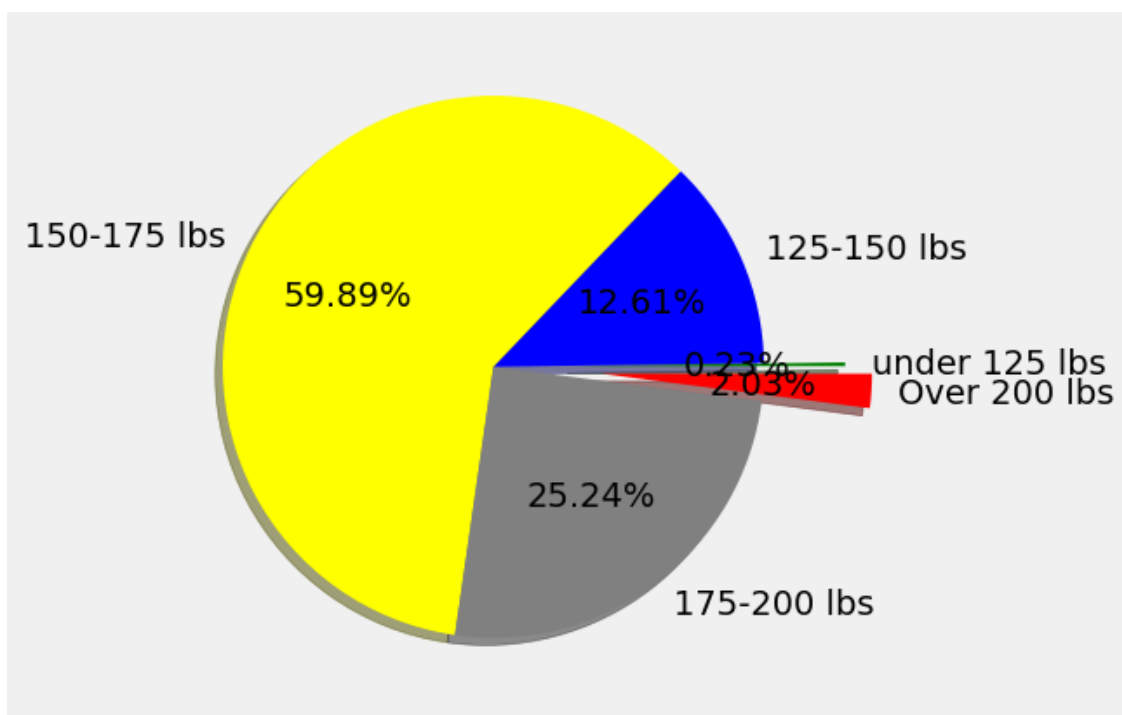

[48]: `fifa.head(3)`

```
[48]:    Unnamed: 0       ID                   Name  Age  \
      0           0   158023            L. Messi   31
      1           1    20801  Cristiano Ronaldo   33
      2           2   190871           Neymar Jr   26

                                        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


                                 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
1             Juventus   https://cdn.sofifa.org/teams/2/light/45.png     €77M
2  Paris Saint-Germain   https://cdn.sofifa.org/teams/2/light/73.png  €118.5M


   Wage  Special Preferred Foot  International Reputation  Weak Foot  \
0  €565K     2202          Left                      5.0        4.0
1  €405K     2228         Right                      5.0        4.0
2  €290K     2143         Right                      5.0        5.0


   Skill Moves        Work Rate   Body Type Real Face Position  Jersey Number  \
0          4.0  Medium/ Medium       Messi       Yes       RF           10.0
1          5.0     High/ Low   C. Ronaldo       Yes       ST            7.0
2          5.0    High/ Medium      Neymar       Yes       LW           10.0


          Joined Loaned From Contract Valid Until Height  Weight    LS    ST  \
0  Jul 1, 2004          NaN                   2021    5'7   159.0  88+2  88+2
1  Jul 10, 2018         NaN                   2022    6'2   183.0  91+3  91+3
2  Aug 3, 2017          NaN                   2022    5'9   150.0  84+3  84+3


     RS    LW    LF    CF    RF    RW   LAM   CAM   RAM    LM   LCM    CM  \
0  88+2  92+2  93+2  93+2  93+2  92+2  93+2  93+2  93+2  91+2  84+2  84+2
1  91+3  89+3  90+3  90+3  90+3  89+3  88+3  88+3  88+3  88+3  81+3  81+3
2  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  \
0  84+2  91+2  64+2  61+2  61+2  61+2  64+2  59+2  47+2  47+2  47+2  59+2
1  81+3  88+3  65+3  61+3  61+3  61+3  65+3  61+3  53+3  53+3  53+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
1      84.0       94.0             89.0          81.0     87.0       88.0
2      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
1   81.0        76.0         77.0         94.0          89.0         91.0
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
1     87.0       96.0     70.0       95.0     95.0     88.0      79.0
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
1       93.0        63.0           29.0         95.0    82.0       85.0
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
1       95.0     28.0            31.0           23.0       7.0        11.0
2       94.0     27.0            24.0           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
```

```
[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           1   20801  Cristiano Ronaldo   33

                                                Photo Nationality  \
      0  https://cdn.sofifa.org/players/4/19/158023.png    Argentina
      1   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   Value   Wage  Special  \
      0  https://cdn.sofifa.org/teams/2/light/241.png  €110.5M  €565K     2202
      1   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  \
```

```
   0  Medium/ Medium        Messi        Yes        RF            10.0  Jul 1, 2004
   1       High/ Low  C. Ronaldo        Yes        ST             7.0  Jul 10, 2018

     Loaned From Contract Valid Until Height  Weight     LS     ST     RS     LW  \
   0         NaN                2021     5'7  159lbs  88+2   88+2   88+2   92+2
   1         NaN                2022     6'2  183lbs  91+3   91+3   91+3   89+3

        LF     CF     RF     RW    LAM    CAM    RAM     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   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
   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
   1       94.0             89.0          81.0     87.0       88.0   81.0

     FKAccuracy  LongPassing  BallControl  Acceleration  SprintSpeed  Agility  \
   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  \
   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
```

```
[ ]:
```

```
[50]: very_expensive=df.loc[(df['Value']>='€70M')]
```

```
[51]: very_expensive.count()[0]
```

```
[51]: 2863
```

```
[52]: expensive=df.loc[(df['Value']>='€30M') & (df['Value']<'€70M')]
```

```
[53]: expensive.count()[0]
```

[53]: 6729

```
[54]: medium_expensive=df.loc[(df['Value']>='€1M') & (df['Value']<'€30M')]
```

```
[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']
```
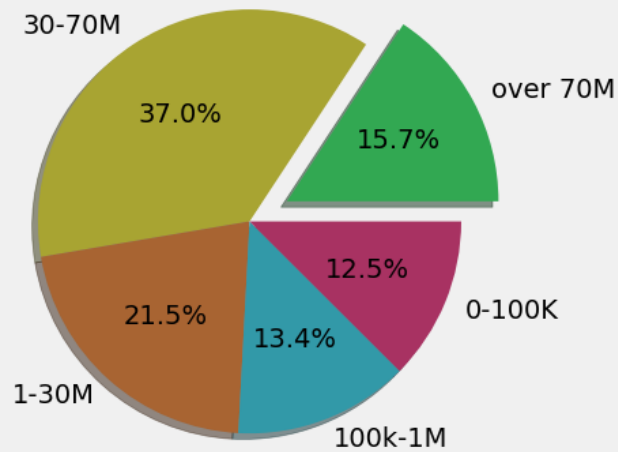
```
[61]: plt.pie(slices,labels=labels,explode=explode,autopct='%0.
      ↪1f%%',shadow=True,colors=colors)

      plt.title('The Distribution of Fifa Players According to their Value in␣
      ↪Euros',fontdict={'fontname':'Times New Roman','fontsize':22})

      plt.show()
```

The Distribution of Fifa Players According to their Value in Euros

[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           0  158023           L. Messi   31
1           1   20801  Cristiano Ronaldo   33

                                      Photo Nationality  \
0  https://cdn.sofifa.org/players/4/19/158023.png    Argentina
1   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   Value   Wage  Special  \
0  https://cdn.sofifa.org/teams/2/light/241.png  €110.5M  €565K     2202
1   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  \
```

```
0   Medium/ Medium       Messi        Yes       RF             10.0   Jul 1, 2004
1        High/ Low  C. Ronaldo        Yes       ST              7.0   Jul 10, 2018

   Loaned From Contract Valid Until Height  Weight    LS    ST    RS    LW  \
0          NaN                 2021    5'7  159lbs  88+2  88+2  88+2  92+2
1          NaN                 2022    6'2  183lbs  91+3  91+3  91+3  89+3

     LF    CF    RF    RW   LAM   CAM   RAM    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  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
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
1       94.0             89.0          81.0     87.0       88.0   81.0

   FKAccuracy  LongPassing  BallControl  Acceleration  SprintSpeed  Agility  \
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  \
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
```

[64]: `df['Finishing']`

[64]:
```
0       95.0
1       94.0
2       87.0
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]:
```python
bins=[50,60,70,80,90,100]

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

plt.xticks(bins)

plt.show()
```
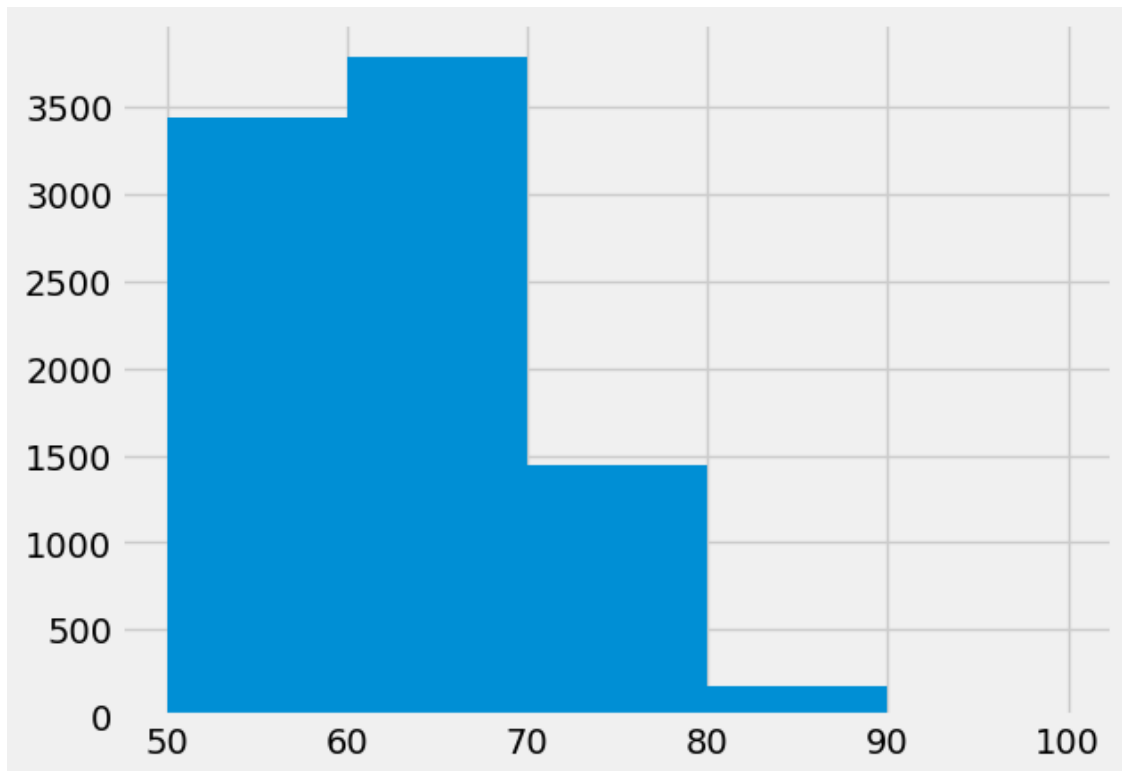

[66]:
```python
#From the plots above,there are only 11 people with a 90 to 100% finishing
 accuracy
```

[67]:
```python
df.head(2)
```

[67]:
```
   Unnamed: 0      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    Argentina
1   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   Value   Wage  Special  \
0  https://cdn.sofifa.org/teams/2/light/241.png  €110.5M  €565K     2202
1   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  \
0  Medium/ Medium      Messi       Yes       RF           10.0   Jul 1, 2004
1       High/ Low  C. Ronaldo      Yes       ST            7.0  Jul 10, 2018


  Loaned From Contract Valid Until Height  Weight     LS     ST     RS     LW  \
0         NaN                 2021    5'7  159lbs  88+2   88+2   88+2   92+2
1         NaN                 2022    6'2  183lbs  91+3   91+3   91+3   89+3


     LF     CF     RF     RW    LAM    CAM    RAM     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   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
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
1       94.0             89.0          81.0     87.0       88.0   81.0


   FKAccuracy  LongPassing  BallControl  Acceleration  SprintSpeed  Agility  \
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  \
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
```

[68]: `df['Contract Valid Until']`

[68]:
```
0        2021
1        2022
2        2022
3        2020
4        2023
         …
18202    2019
18203    2020
18204    2021
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)`

[70]:
```
   Unnamed: 0      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    Argentina
1   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    Value    Wage  Special  \
0  https://cdn.sofifa.org/teams/2/light/241.png  €110.5M  €565K     2202
1   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
```

```
        Right              5.0        4.0        5.0
```

```
        Work Rate     Body Type Real Face Position  Jersey Number      Joined  \
0  Medium/ Medium         Messi       Yes       RF           10.0  Jul 1, 2004
1      High/ Low   C. Ronaldo       Yes       ST            7.0  Jul 10, 2018
```

```
  Loaned From Contract Valid Until Height   Weight     LS     ST     RS    LW  \
0         NaN                 2021    5'7  159lbs  88+2   88+2   88+2  92+2
1         NaN                 2022    6'2  183lbs  91+3   91+3   91+3  89+3
```

```
     LF     CF     RF     RW    LAM    CAM    RAM     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   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
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
1       94.0             89.0          81.0     87.0       88.0   81.0
```

```
   FKAccuracy  LongPassing  BallControl  Acceleration  SprintSpeed  Agility  \
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  \
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
      1         2022
      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      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    Argentina
       1   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    Value   Wage  Special  \
       0  https://cdn.sofifa.org/teams/2/light/241.png  €110.5M  €565K     2202
       1   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
```

	Right			5.0	4.0	5.0

	Work Rate	Body Type	Real Face	Position	Jersey Number	Joined
0	Medium/ Medium	Messi	Yes	RF	10.0	Jul 1, 2004
1	High/ Low	C. Ronaldo	Yes	ST	7.0	Jul 10, 2018

	Loaned From	Contract Valid Until	Height	Weight	LS	ST	RS	LW
0	NaN	2021	5'7	159lbs	88+2	88+2	88+2	92+2
1	NaN	2022	6'2	183lbs	91+3	91+3	91+3	89+3

	LF	CF	RF	RW	LAM	CAM	RAM	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	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
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
1	94.0	89.0	81.0	87.0	88.0	81.0

	FKAccuracy	LongPassing	BallControl	Acceleration	SprintSpeed	Agility
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
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
      1      2022
      2      2022
```

```
3           2020
4           2023
            …
18202       2019
18203       2020
18204       2021
18205       2019
18206       2019
Name: Contract Valid Until, Length: 18207, dtype: object
```

[77]: `df.head(70)`

[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              4   192985        K. De Bruyne   27
..           …       …                   …   …
65            65   190483       Douglas Costa   27
66            66   189596           T. Müller   28
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
3    https://cdn.sofifa.org/players/4/19/193080.png        Spain
4    https://cdn.sofifa.org/players/4/19/192985.png      Belgium
..                                              …            …
65   https://cdn.sofifa.org/players/4/19/190483.png       Brazil
66   https://cdn.sofifa.org/players/4/19/189596.png      Germany
67   https://cdn.sofifa.org/players/4/19/189509.png        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
3    https://cdn.sofifa.org/flags/45.png       91         93
4     https://cdn.sofifa.org/flags/7.png       91         92
..                                     …        …          …
65   https://cdn.sofifa.org/flags/54.png       86         86
66   https://cdn.sofifa.org/flags/21.png       86         86
```

```
67  https://cdn.sofifa.org/flags/45.png          86          86
68  https://cdn.sofifa.org/flags/21.png          86          86
69  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                  Juventus   https://cdn.sofifa.org/teams/2/light/45.png
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           Manchester City   https://cdn.sofifa.org/teams/2/light/10.png
..                      ...                                           ...
65                 Juventus   https://cdn.sofifa.org/teams/2/light/45.png
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
68       Borussia Dortmund   https://cdn.sofifa.org/teams/2/light/22.png
69                  Chelsea    https://cdn.sofifa.org/teams/2/light/5.png


       Value    Wage   Special Preferred Foot  International Reputation  \
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
..       ...     ...       ...            ...                       ...
65    €46.5M   €175K      2111           Left                       3.0
66      €45M   €135K      2097          Right                       4.0
67    €45.5M   €130K      2190          Right                       3.0
68    €43.5M   €100K      2172          Right                       4.0
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       Lean       Yes       GK
4         5.0          4.0      High/ High     Normal       Yes      RCM
..        ...          ...             ...        ...       ...      ...
65        3.0          5.0    High/ Medium     Normal       Yes       LM
66        4.0          3.0      High/ High       Lean       Yes      CAM
67        3.0          5.0  Medium/ Medium     Normal       Yes       CM
68        4.0          4.0    High/ Medium       Lean       Yes       LM
69        3.0          2.0  Medium/ Medium     Normal       Yes       RB


    Jersey Number        Joined Loaned From Contract Valid Until Height  \
0            10.0   Jul 1, 2004         NaN                 2021    5'7
1             7.0  Jul 10, 2018         NaN                 2022    6'2
2            10.0   Aug 3, 2017         NaN                 2022    5'9
```

3	1.0	Jul 1, 2011	NaN	2020	6'4
4	7.0	Aug 30, 2015	NaN	2023	5'11
..	…	…	…	…	…
65	11.0	Jul 1, 2018	NaN	2022	5'8
66	13.0	Aug 10, 2008	NaN	2021	6'1
67	19.0	Jul 14, 2013	NaN	2021	5'9
68	11.0	Jul 1, 2012	NaN	2023	5'11
69	14.0	Aug 24, 2012	NaN	2022	5'10

	Weight	LS	ST	RS	LW	LF	CF	RF	RW	LAM	CAM	RAM \
0	159lbs	88+2	88+2	88+2	92+2	93+2	93+2	93+2	92+2	93+2	93+2	93+2
1	183lbs	91+3	91+3	91+3	89+3	90+3	90+3	90+3	89+3	88+3	88+3	88+3
2	150lbs	84+3	84+3	84+3	89+3	89+3	89+3	89+3	89+3	89+3	89+3	89+3
3	168lbs	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
4	154lbs	82+3	82+3	82+3	87+3	87+3	87+3	87+3	87+3	88+3	88+3	88+3
..	…	…	…	…	…	…	…	…	…	…	…	
65	154lbs	77+3	77+3	77+3	85+3	83+3	83+3	83+3	85+3	84+3	84+3	84+3
66	165lbs	82+3	82+3	82+3	81+3	82+3	82+3	82+3	81+3	82+3	82+3	82+3
67	154lbs	75+3	75+3	75+3	82+3	81+3	81+3	81+3	82+3	84+3	84+3	84+3
68	157lbs	82+3	82+3	82+3	85+3	85+3	85+3	85+3	85+3	85+3	85+3	85+3
69	168lbs	67+3	67+3	67+3	71+3	70+3	70+3	70+3	71+3	72+3	72+3	72+3

	LM	LCM	CM	RCM	RM	LWB	LDM	CDM	RDM	RWB	LB	LCB \
0	91+2	84+2	84+2	84+2	91+2	64+2	61+2	61+2	61+2	64+2	59+2	47+2
1	88+3	81+3	81+3	81+3	88+3	65+3	61+3	61+3	61+3	65+3	61+3	53+3
2	88+3	81+3	81+3	81+3	88+3	65+3	60+3	60+3	60+3	65+3	60+3	47+3
3	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
4	88+3	87+3	87+3	87+3	88+3	77+3	77+3	77+3	77+3	77+3	73+3	66+3
..	…	…	…	…	…	…	…	…	…	…	…	
65	84+3	78+3	78+3	78+3	84+3	69+3	63+3	63+3	63+3	69+3	64+3	53+3
66	81+3	79+3	79+3	79+3	81+3	68+3	66+3	66+3	66+3	68+3	66+3	59+3
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
68	84+3	79+3	79+3	79+3	84+3	68+3	64+3	64+3	64+3	68+3	64+3	54+3
69	74+3	77+3	77+3	77+3	74+3	83+3	83+3	83+3	83+3	83+3	84+3	83+3

	CB	RCB	RB	Crossing	Finishing	HeadingAccuracy	ShortPassing \
0	47+2	47+2	59+2	84.0	95.0	70.0	90.0
1	53+3	53+3	61+3	84.0	94.0	89.0	81.0
2	47+3	47+3	60+3	79.0	87.0	62.0	84.0
3	NaN	NaN	NaN	17.0	13.0	21.0	50.0
4	66+3	66+3	73+3	93.0	82.0	55.0	92.0
..	…	…	…	…	…	…	…
65	53+3	53+3	64+3	84.0	67.0	50.0	84.0
66	59+3	59+3	66+3	79.0	87.0	82.0	83.0
67	67+3	67+3	73+3	72.0	69.0	54.0	90.0
68	54+3	54+3	64+3	79.0	87.0	49.0	86.0
69	83+3	83+3	84+3	81.0	46.0	76.0	81.0

	Volleys	Dribbling	Curve	FKAccuracy	LongPassing	BallControl \
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

	Acceleration	SprintSpeed	Agility	Reactions	Balance	ShotPower \
0	91.0	86.0	91.0	95.0	95.0	85.0
1	89.0	91.0	87.0	96.0	70.0	95.0
2	94.0	90.0	96.0	94.0	84.0	80.0
3	57.0	58.0	60.0	90.0	43.0	31.0
4	78.0	76.0	79.0	91.0	77.0	91.0
..	…	…	…	…	…	…
65	97.0	93.0	93.0	84.0	91.0	86.0
66	73.0	75.0	75.0	91.0	72.0	78.0
67	78.0	69.0	90.0	84.0	86.0	75.0
68	86.0	85.0	86.0	87.0	81.0	88.0
69	76.0	76.0	72.0	88.0	73.0	68.0

	Jumping	Stamina	Strength	LongShots	Aggression	Interceptions \
0	68.0	72.0	59.0	94.0	48.0	22.0
1	95.0	88.0	79.0	93.0	63.0	29.0
2	61.0	81.0	49.0	82.0	56.0	36.0
3	67.0	43.0	64.0	12.0	38.0	30.0
4	63.0	90.0	75.0	91.0	76.0	61.0
..	…	…	…	…	…	…
65	61.0	78.0	63.0	80.0	55.0	48.0
66	81.0	87.0	68.0	80.0	57.0	58.0
67	75.0	75.0	59.0	79.0	57.0	78.0
68	70.0	73.0	67.0	86.0	49.0	50.0
69	76.0	87.0	71.0	60.0	82.0	89.0

	Positioning	Vision	Penalties	Composure	Marking	StandingTackle \
0	94.0	94.0	75.0	96.0	33.0	28.0
1	95.0	82.0	85.0	95.0	28.0	31.0
2	89.0	87.0	81.0	94.0	27.0	24.0
3	12.0	68.0	40.0	68.0	15.0	21.0
4	87.0	94.0	79.0	88.0	68.0	58.0
..	…	…	…	…	…	…

65	76.0	84.0	77.0	84.0	45.0	38.0
66	92.0	85.0	60.0	83.0	44.0	41.0
67	79.0	86.0	75.0	85.0	67.0	63.0
68	88.0	86.0	89.0	84.0	47.0	36.0
69	62.0	74.0	66.0	78.0	88.0	90.0

	SlidingTackle	GKDiving	GKHandling	GKKicking	GKPositioning	GKReflexes	\
0	26.0	6.0	11.0	15.0	14.0	8.0
1	23.0	7.0	11.0	15.0	14.0	11.0
2	33.0	9.0	9.0	15.0	15.0	11.0
3	13.0	90.0	85.0	87.0	88.0	94.0
4	51.0	15.0	13.0	5.0	10.0	13.0
..	…	…	…	…	…	…
65	34.0	13.0	15.0	9.0	12.0	5.0
66	44.0	6.0	7.0	11.0	14.0	14.0
67	65.0	6.0	11.0	7.0	9.0	13.0
68	45.0	12.0	12.0	13.0	13.0	11.0
69	86.0	13.0	9.0	10.0	6.0	5.0

	Release Clause
0	€226.5M
1	€127.1M
2	€228.1M
3	€138.6M
4	€196.4M
..	…
65	€76.7M
66	€74.3M
67	€75.1M
68	€74M
69	€64.8M

[70 rows x 89 columns]

```python
[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)
```

```python
[103]: from collections import Counter
       import os
       import pandas as pd
       import numpy as np
       import csv
```

```
[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␣
        ↪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␣
        ↪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
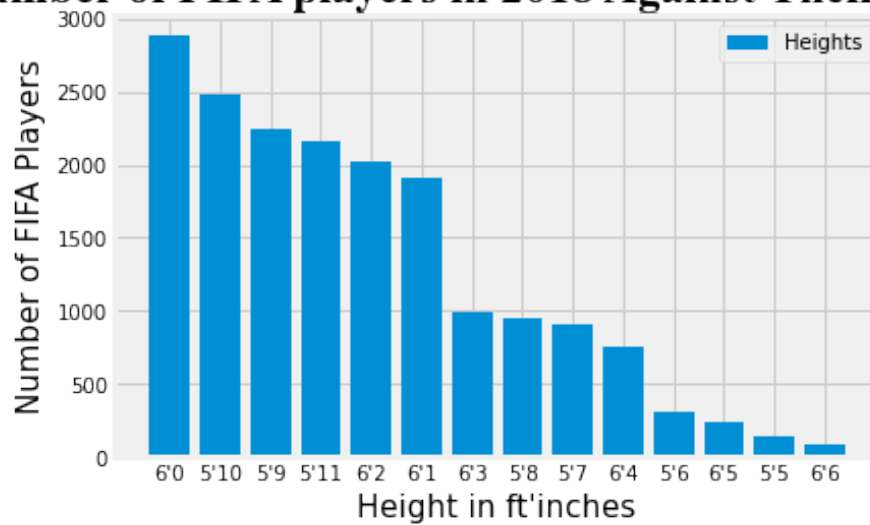


```
[107]:  plt.figure(figsize=[8,8])
        height.reverse()
        population.reverse()

        plt.barh(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.savefig('Heights of FIFA players.png')
        plt.show()
```

Number of FIFA players in 2018 Against Their Heights
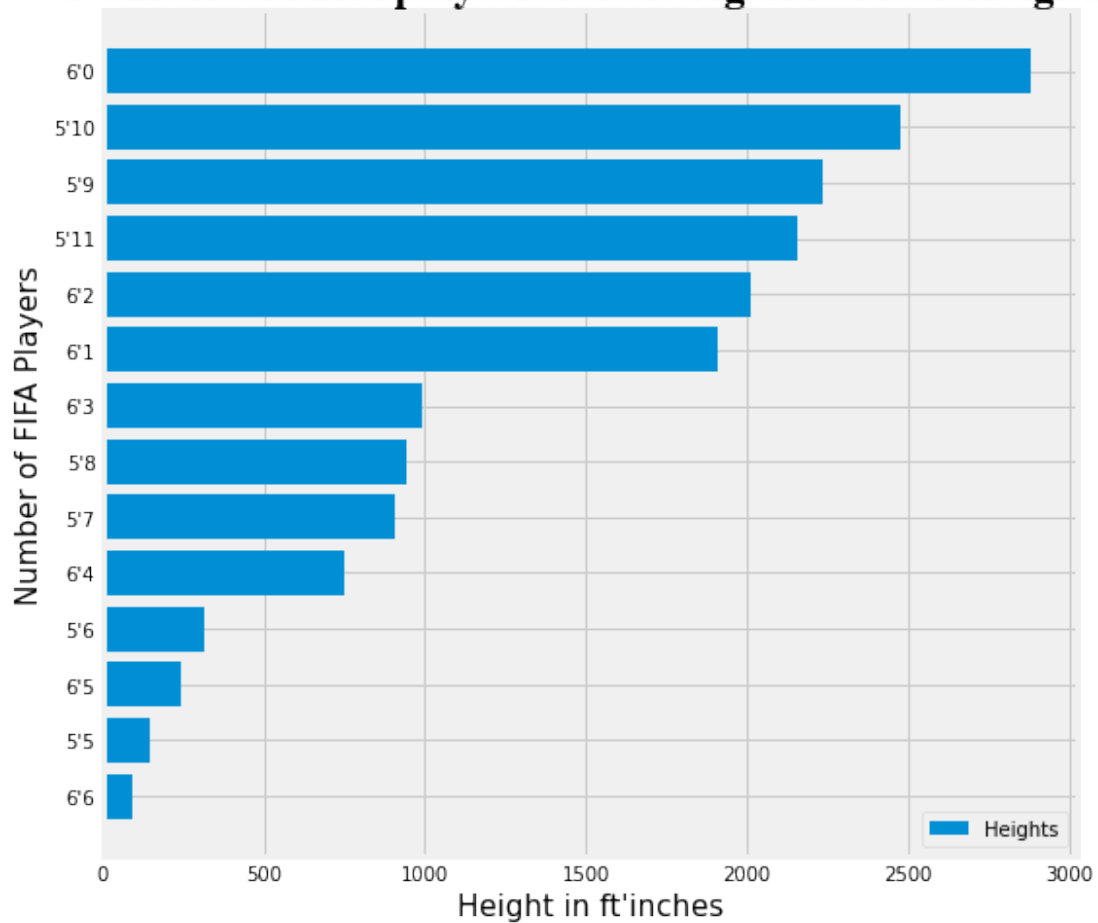
[108]: `df.head(1)`

[108]:
```
   Unnamed: 0      ID      Name  Age  \
0           0  158023  L. Messi   31

                                     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     2202

   Preferred Foot  International Reputation  Weak Foot  Skill Moves  \
0           Left                       5.0        4.0          4.0
```

	Work Rate	Body Type	Real Face	Position	Jersey Number	Joined
0	Medium/ Medium	Messi	Yes	RF	10.0	Jul 1, 2004

	Loaned From	Contract Valid Until	Height	Weight	LS	ST	RS	LW
0	NaN	2021	5'7	159lbs	88+2	88+2	88+2	92+2

	LF	CF	RF	RW	LAM	CAM	RAM	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

	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
0	95.0	70.0	90.0	86.0	97.0	93.0

	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
0	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	8.0	€226.5M

```python
[109]: import csv
       from collections import Counter
       import numpy as np
```

```python
[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])
```

```
    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':
        ↪'Times New Roman','fontsize':23,'fontweight':'bold'})
       plt.savefig('The Popularity of Jersey Numbers in FIFA 2018.png')
       plt.grid(True)
       plt.show()
```


The Popularity of Jersey Numbers in FIFA 2018
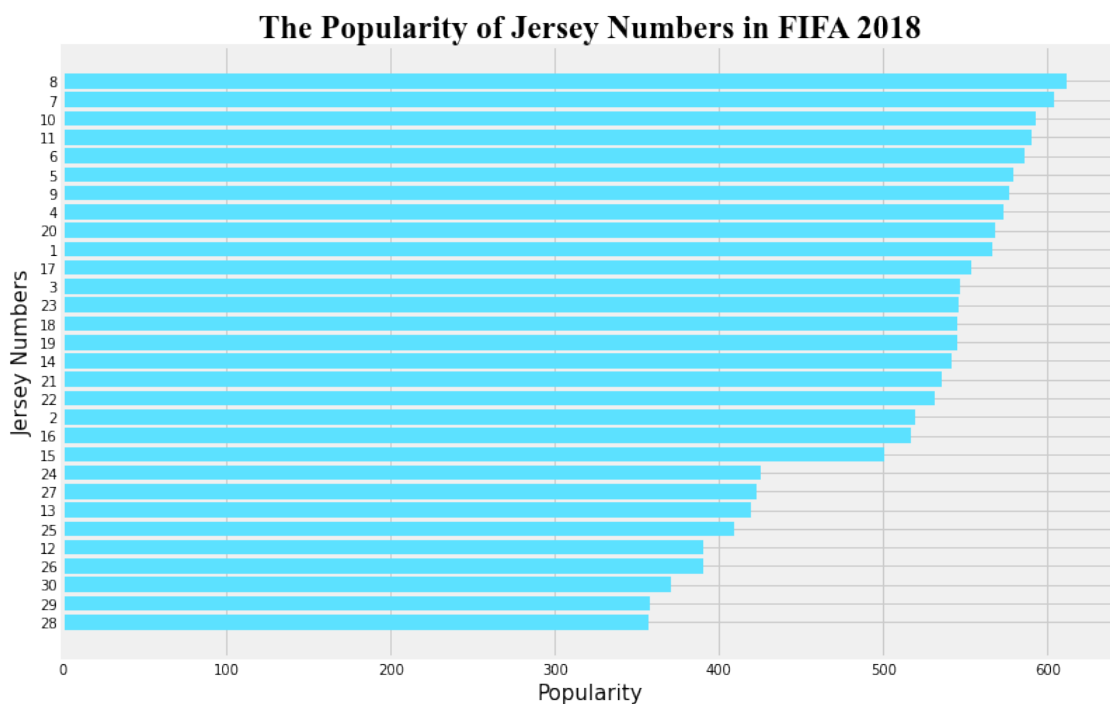
```
[112]: import os
       os.getcwd()
```

[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
       0             1              HTML/CSS;Java;JavaScript;Python
       1             2                      C++;HTML/CSS;Python
       2             3                                 HTML/CSS
       3             4                    C;C++;C#;Python;SQL
       4             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]:
```python
plt.figure(figsize=[7,8])
plt.barh(languages,popularity)
plt.show()
```
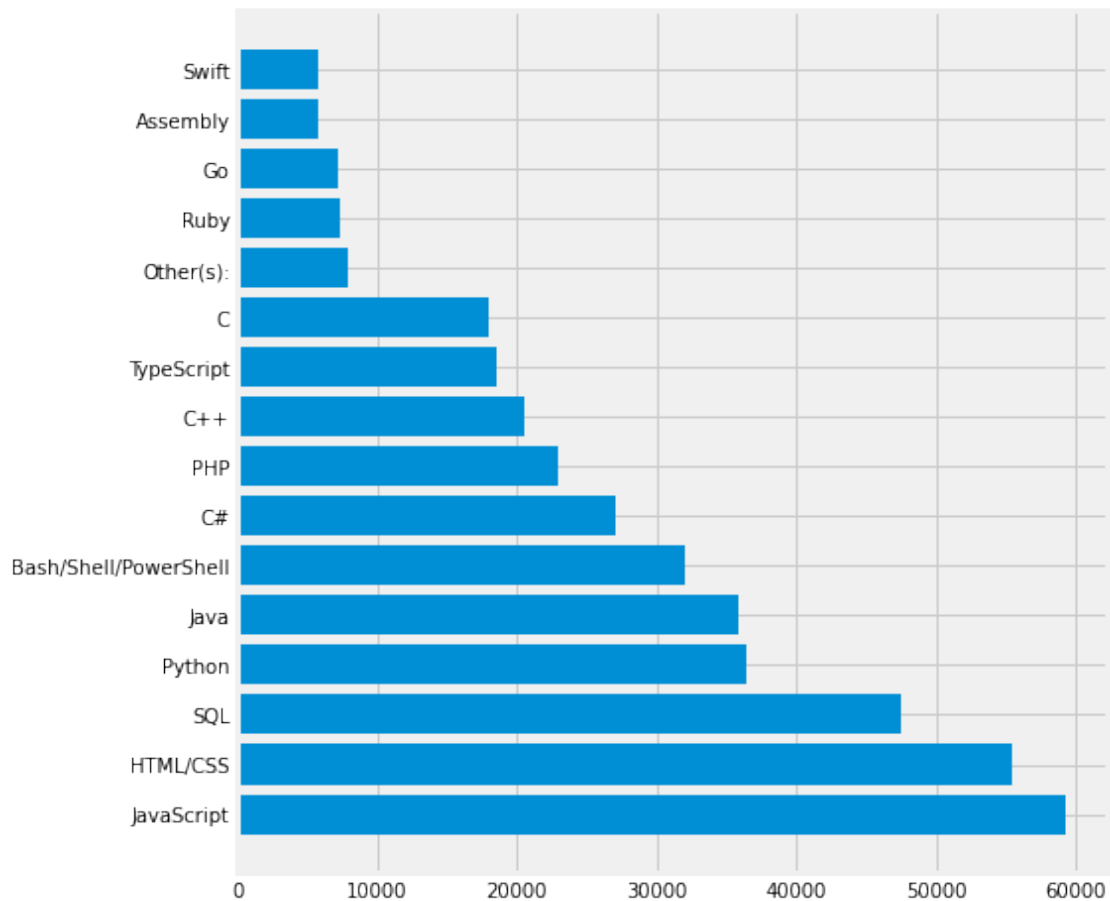

[177]: `print(jerseyno)`

```
[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]
```

[178]: ```python
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]: ```python
os.chdir('C:\\Users\\malowa\\Desktop\\R work\\matplotlib_tutorial-master')
```

[203]: ```python
import pandas
fifaa=pd.read_csv('fifa_data.csv')
#pd.set_option('display.max_columns')
```

[204]: ```python
fifaa.head(1)
```

[204]:
```
   Unnamed: 0      ID       Name  Age  \
0           0  158023  L. Messi   31

                                        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     2202

  Preferred Foot  International Reputation  Weak Foot  Skill Moves  \
0           Left                       5.0        4.0          4.0

       Work Rate Body Type Real Face Position  Jersey Number      Joined  \
0  Medium/ Medium     Messi       Yes       RF           10.0  Jul 1, 2004

  Loaned From Contract Valid Until Height  Weight    LS    ST    RS    LW  \
0         NaN                 2021    5'7  159lbs  88+2  88+2  88+2  92+2

     LF    CF    RF    RW   LAM   CAM   RAM    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

    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  \
0       95.0             70.0          90.0     86.0       97.0   93.0

   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	\
0	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	8.0	€226.5M

```python
[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
```

```python
[206]: from collections import Counter
       from collections import OrderedDict
```

```python
[207]: from matplotlib import pyplot as plt
```

```python
[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':
        ↪'Times New Roman','fontsize':23,'fontweight':'bold'})
       plt.show()
```

Popularity of Jersey Numbers in FIFA 2018
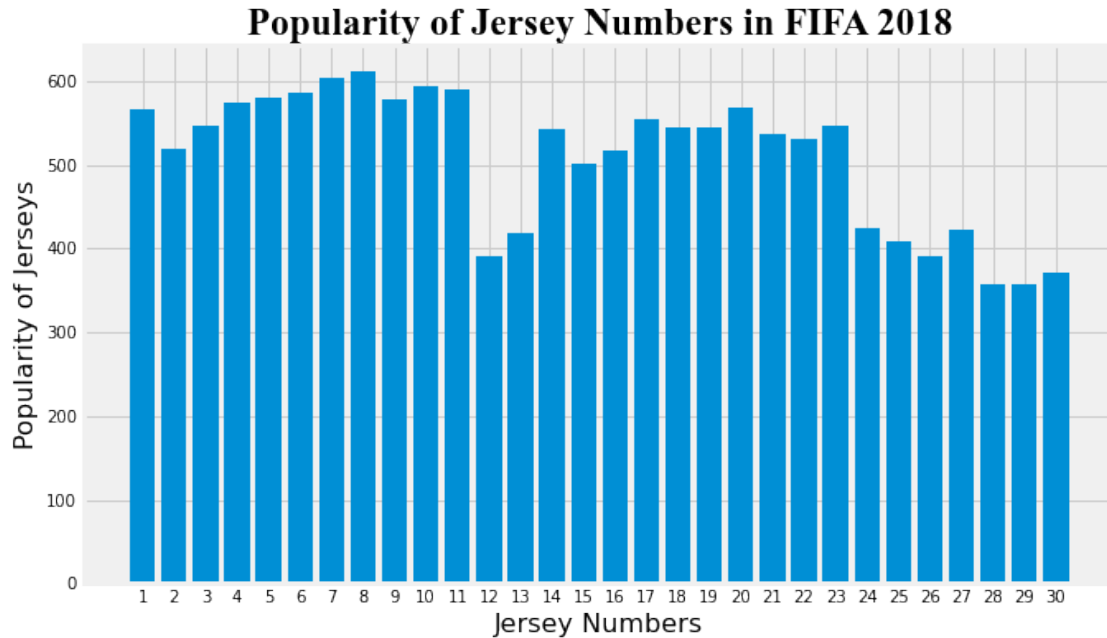
[209]:
```
#for key in student:
    #print(key)

#for key,value in student.items():
    # print(key,value)
```

[220]:
```
fifaa['Jersey Number']=fifaa['Jersey Number'].astype(str)

jerseys=fifaa['Jersey Number']


counter=Counter(jerseys).most_common(30)

ordered_dict=OrderedDict(counter)
```

[221]:
```
print(counter)
```

```
[('8', 612), ('7', 604), ('10', 593), ('11', 590), ('6', 586), ('5', 579), ('9',
577), ('4', 573), ('20', 568), ('1', 566), ('17', 554), ('3', 547), ('23', 546),
('18', 545), ('19', 545), ('14', 542), ('21', 536), ('22', 531), ('2', 519),
('16', 517), ('15', 501), ('24', 425), ('27', 423), ('13', 419), ('25', 409),
('12', 390), ('26', 390), ('30', 371), ('29', 358), ('28', 357)]
```

[230]:
```
jerseyno=[]
popularity=[]
```

```
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',
```

45

```
'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]
```

[260]:
```python
from matplotlib import pyplot as plt
```

[273]:
```python
plt.figure(figsize=[8,9])
jerseyno.reverse()
liked.reverse()
plt.barh(jerseyno,liked)
plt.xlabel('The popularity of Jerseys',fontdict={'fontsize':18})
plt.ylabel('Different Jersey Numbers',fontdict={'fontsize':18})
plt.title('The Popularity of Jersey Numbers in FIFA 2018',fontdict={'fontname':
 ↪'Times New Roman','fontweight':'bold','fontsize':24})
plt.show()
```

The Popularity of Jersey Numbers in FIFA 2018
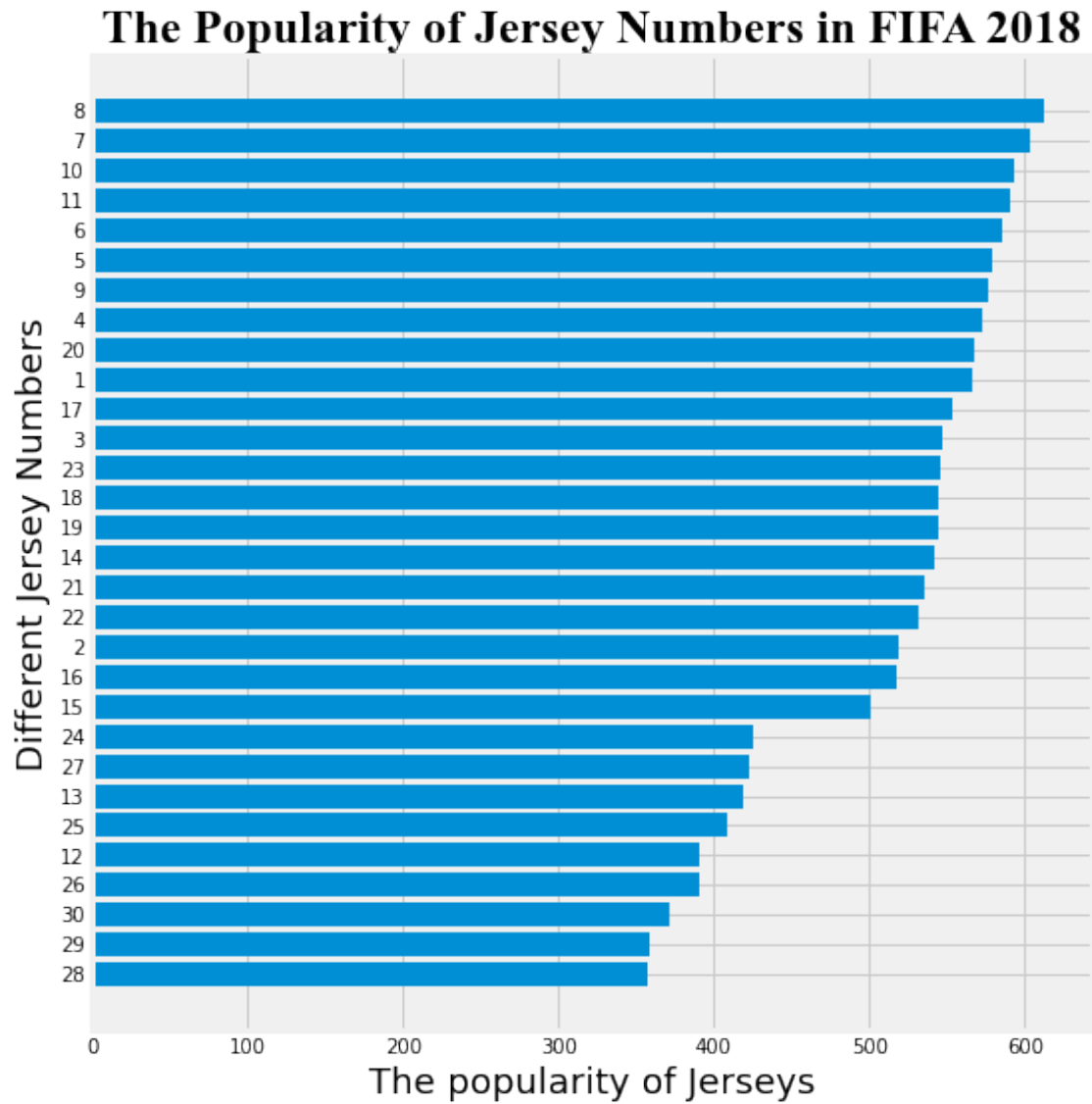

```
[274]: fif.head(1)
```

```
[274]:    Unnamed: 0      ID      Name  Age  \
       0          0  158023  L. Messi   31

                                          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       2202


   Preferred Foot  International Reputation  Weak Foot  Skill Moves  \
0           Left                       5.0        4.0          4.0


          Work Rate Body Type Real Face Position Jersey Number       Joined  \
0  Medium/ Medium      Messi       Yes        RF            10  Jul 1, 2004


  Loaned From Contract Valid Until Height  Weight    LS    ST    RS    LW  \
0           0                 2021    5'7  159lbs  88+2  88+2  88+2  92+2


     LF    CF    RF    RW   LAM   CAM   RAM    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


    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  \
0       95.0             70.0          90.0     86.0       97.0   93.0


   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  \
0        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         8.0        €226.5M
```

```python
fif['Contract Valid Until']=fif['Contract Valid Until'].astype(str)
```

```python
contract=fif['Contract Valid Until']

counter_contract=Counter(contract).most_common(10)

year=[]

population=[]

print(counter_contract)
```

```
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()
```
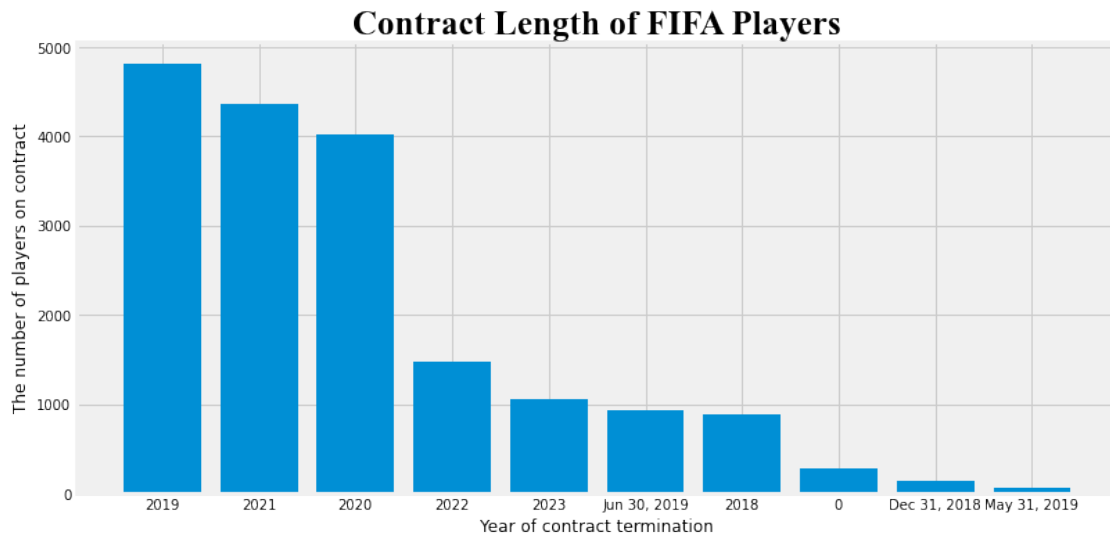

[314]:
```
fif.loc[fif['Contract Valid Until']=='May 31, 2019'].count()[0]
```

49

```
[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      ID        Name  Age  \
       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       57         74

                       Club                                 Club Logo  Value  \
       16376  Newport County  https://cdn.sofifa.org/teams/2/light/112254.png  €220K

            Wage  Special Preferred Foot  International Reputation  Weak Foot  \
       16376  €3K     1508          Right                      1.0        3.0

            Skill Moves     Work Rate Body Type Real Face Position Jersey Number  \
       16376         2.0  Medium/ High      Lean        No      RCM            15

            Joined   Loaned From Contract Valid Until Height  Weight     LS    ST  \
       16376      0  Bristol City        Jan 30, 2019    6'3  181lbs  53+2  53+2

              RS    LW    LF    CF    RF    RW   LAM   CAM   RAM    LM   LCM    CM  \
       16376  53+2  54+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  52+2

            Crossing  Finishing  HeadingAccuracy  ShortPassing  Volleys  Dribbling  \
       16376      39.0       49.0             51.0          63.0     42.0       59.0
```

```
          Curve  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  \
16376        62.0       50.0     64.0       52.0     62.0     63.0      73.0

          LongShots  Aggression  Interceptions  Positioning  Vision  Penalties  \
16376          47.0        41.0           43.0         40.0    50.0       44.0

          Composure  Marking  StandingTackle  SlidingTackle  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
       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      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
       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
18204  https://cdn.sofifa.org/players/4/19/241638.png        England
18205  https://cdn.sofifa.org/players/4/19/246268.png        England
18206  https://cdn.sofifa.org/players/4/19/246269.png        England


                                     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
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
18204      https://cdn.sofifa.org/flags/14.png       47         67
18205      https://cdn.sofifa.org/flags/14.png       47         66
18206      https://cdn.sofifa.org/flags/14.png       46         66


                    Club                                      Club Logo  \
0           FC Barcelona     https://cdn.sofifa.org/teams/2/light/241.png
1               Juventus      https://cdn.sofifa.org/teams/2/light/45.png
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          Manchester City    https://cdn.sofifa.org/teams/2/light/10.png
...                    ...                                           ...
18202      Crewe Alexandra   https://cdn.sofifa.org/teams/2/light/121.png
18203       Trelleborgs FF   https://cdn.sofifa.org/teams/2/light/703.png
18204      Cambridge United  https://cdn.sofifa.org/teams/2/light/1944.png
18205       Tranmere Rovers  https://cdn.sofifa.org/teams/2/light/15048.png
18206       Tranmere Rovers  https://cdn.sofifa.org/teams/2/light/15048.png


           Value    Wage  Special Preferred Foot  International Reputation  \
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
...          ...     ...      ...            ...                       ...
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


        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	Lean	Yes	GK
4	5.0	4.0	High/ High	Normal	Yes	RCM
...	...	...	...	...	...	...
18202	2.0	2.0	Medium/ Medium	Lean	No	CM
18203	2.0	2.0	Medium/ Medium	Normal	No	ST
18204	3.0	2.0	Medium/ Medium	Normal	No	ST
18205	3.0	2.0	Medium/ Medium	Lean	No	RW
18206	3.0	2.0	Medium/ Medium	Lean	No	CM

	Jersey Number	Joined	Loaned From	Contract Valid Until	Height
0	10	Jul 1, 2004	0	2021	5'7
1	7	Jul 10, 2018	0	2022	6'2
2	10	Aug 3, 2017	0	2022	5'9
3	1	Jul 1, 2011	0	2020	6'4
4	7	Aug 30, 2015	0	2023	5'11
...	...	...	...	...	...
18202	22	May 3, 2017	0	2019	5'9
18203	21	Mar 19, 2018	0	2020	6'3
18204	33	Jul 1, 2017	0	2021	5'8
18205	34	Apr 24, 2018	0	2019	5'10
18206	33	Oct 30, 2018	0	2019	5'10

	Weight	LS	ST	RS	LW	LF	CF	RF	RW	LAM	CAM
0	159lbs	88+2	88+2	88+2	92+2	93+2	93+2	93+2	92+2	93+2	93+2
1	183lbs	91+3	91+3	91+3	89+3	90+3	90+3	90+3	89+3	88+3	88+3
2	150lbs	84+3	84+3	84+3	89+3	89+3	89+3	89+3	89+3	89+3	89+3
3	168lbs	0	0	0	0	0	0	0	0	0	0
4	154lbs	82+3	82+3	82+3	87+3	87+3	87+3	87+3	87+3	88+3	88+3
...	...	...	...	...	...	...	...	...	...		
18202	134lbs	42+2	42+2	42+2	44+2	44+2	44+2	44+2	44+2	45+2	45+2
18203	170lbs	45+2	45+2	45+2	39+2	42+2	42+2	42+2	39+2	40+2	40+2
18204	148lbs	45+2	45+2	45+2	45+2	46+2	46+2	46+2	45+2	44+2	44+2
18205	154lbs	47+2	47+2	47+2	47+2	46+2	46+2	46+2	47+2	45+2	45+2
18206	176lbs	43+2	43+2	43+2	45+2	44+2	44+2	44+2	45+2	45+2	45+2

	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
...	...	...	...	...	...	...	...	...	...	...		
18202	45+2	44+2	45+2	45+2	45+2	44+2	44+2	45+2	45+2	45+2	44+2	45+2
18203	40+2	38+2	35+2	35+2	35+2	38+2	30+2	31+2	31+2	31+2	30+2	29+2
18204	44+2	44+2	38+2	38+2	38+2	44+2	34+2	30+2	30+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  46+2  46+2  46+2  46+2  46+2  46+2  46+2
```

	LCB	CB	RCB	RB	Crossing	Finishing	HeadingAccuracy	\
0	47+2	47+2	47+2	59+2	84.0	95.0	70.0	
1	53+3	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	

	ShortPassing	Volleys	Dribbling	Curve	FKAccuracy	LongPassing	\
0	90.0	86.0	97.0	93.0	94.0	87.0	
1	81.0	87.0	88.0	81.0	76.0	77.0	
2	84.0	84.0	96.0	88.0	87.0	78.0	
3	50.0	13.0	18.0	21.0	19.0	51.0	
4	92.0	82.0	86.0	85.0	83.0	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	25.0	
18204	38.0	38.0	45.0	38.0	27.0	28.0	
18205	42.0	40.0	51.0	34.0	32.0	32.0	
18206	48.0	30.0	43.0	40.0	34.0	44.0	

	BallControl	Acceleration	SprintSpeed	Agility	Reactions	Balance	\
0	96.0	91.0	86.0	91.0	95.0	95.0	
1	94.0	89.0	91.0	87.0	96.0	70.0	
2	95.0	94.0	90.0	96.0	94.0	84.0	
3	42.0	57.0	58.0	60.0	90.0	43.0	
4	91.0	78.0	76.0	79.0	91.0	77.0	
...	...	...	...	...	...	...	
18202	43.0	54.0	57.0	60.0	49.0	76.0	
18203	40.0	41.0	39.0	38.0	40.0	52.0	
18204	44.0	70.0	69.0	50.0	47.0	58.0	
18205	52.0	61.0	60.0	52.0	21.0	71.0	
18206	51.0	57.0	55.0	55.0	51.0	63.0	

	ShotPower	Jumping	Stamina	Strength	LongShots	Aggression	\
0	85.0	68.0	72.0	59.0	94.0	48.0	
1	95.0	95.0	88.0	79.0	93.0	63.0	
2	80.0	61.0	81.0	49.0	82.0	56.0	
3	31.0	67.0	43.0	64.0	12.0	38.0	
4	91.0	63.0	90.0	75.0	91.0	76.0	

```
        …          …        …        …          …        …          …
18202    43.0     55.0      40.0     47.0      38.0     46.0
18203    41.0     47.0      43.0     67.0      42.0     47.0
18204    45.0     60.0      55.0     32.0      45.0     32.0
18205    64.0     42.0      40.0     48.0      34.0     33.0
18206    43.0     62.0      47.0     60.0      32.0     56.0

        Interceptions  Positioning  Vision  Penalties  Composure  Marking  \
0                22.0         94.0    94.0       75.0       96.0     33.0
1                29.0         95.0    82.0       85.0       95.0     28.0
2                36.0         89.0    87.0       81.0       94.0     27.0
3                30.0         12.0    68.0       40.0       68.0     15.0
4                61.0         87.0    94.0       79.0       88.0     68.0
        …              …        …       …          …          …        …
18202            46.0         39.0    52.0       43.0       45.0     40.0
18203            16.0         46.0    33.0       43.0       42.0     22.0
18204            15.0         48.0    43.0       55.0       41.0     32.0
18205            22.0         44.0    47.0       50.0       46.0     20.0
18206            42.0         34.0    49.0       33.0       43.0     40.0

        StandingTackle  SlidingTackle  GKDiving  GKHandling  GKKicking  \
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
        …               …              …         …           …
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           11.0       6.0         5.0       10.0
18205             25.0           27.0      14.0         6.0       14.0
18206             43.0           50.0      10.0        15.0        9.0

        GKPositioning  GKReflexes Release Clause
0                14.0         8.0         €226.5M
1                14.0        11.0         €127.1M
2                15.0        11.0         €228.1M
3                88.0        94.0         €138.6M
4                10.0        13.0         €196.4M
        …              …                  …
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]
```

```
[334]: fif.iloc[[2,3]]    #extracts the second and third indexes or ro
```

```
[334]:    Unnamed: 0       ID       Name  Age  \
       2           2  190871  Neymar Jr   26
       3           3  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  \
2  Paris Saint-Germain  https://cdn.sofifa.org/teams/2/light/73.png  €118.5M
3    Manchester United  https://cdn.sofifa.org/teams/2/light/11.png     €72M
```

```
   Wage  Special Preferred Foot  International Reputation  Weak Foot  \
2  €290K     2143          Right                      5.0        5.0
3  €260K     1471          Right                      4.0        3.0
```

```
   Skill Moves      Work Rate Body Type Real Face Position Jersey Number  \
2          5.0    High/ Medium    Neymar       Yes       LW            10
3          1.0  Medium/ Medium      Lean       Yes       GK             1
```

```
        Joined Loaned From Contract Valid Until Height  Weight    LS    ST  \
2  Aug 3, 2017           0                 2022    5'9  150lbs  84+3  84+3
3  Jul 1, 2011           0                 2020    6'4  168lbs     0     0
```

```
     RS    LW    LF    CF    RF    RW   LAM   CAM   RAM    LM   LCM    CM  \
2  84+3  89+3  89+3  89+3  89+3  89+3  89+3  89+3  89+3  88+3  81+3  81+3
3     0     0     0     0     0     0     0     0     0     0     0     0
```

```
    RCM    RM   LWB   LDM   CDM   RDM   RWB    LB   LCB    CB   RCB    RB  \
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
3     0     0     0     0     0     0     0     0     0     0     0     0
```

```
   Crossing  Finishing  HeadingAccuracy  ShortPassing  Volleys  Dribbling  \
2      79.0       87.0             62.0          84.0     84.0       96.0
3      17.0       13.0             21.0          50.0     13.0       18.0
```

```
   Curve  FKAccuracy  LongPassing  BallControl  Acceleration  SprintSpeed  \
2  88.0        87.0         78.0         95.0          94.0         90.0
3  21.0        19.0         51.0         42.0          57.0         58.0
```

```
   Agility  Reactions  Balance  ShotPower  Jumping  Stamina  Strength  \
```

```
    2        96.0       94.0          84.0          80.0      61.0        81.0      49.0
    3        60.0       90.0          43.0          31.0      67.0        43.0      64.0


        LongShots  Aggression  Interceptions  Positioning  Vision  Penalties  \
    2        82.0        56.0           36.0         89.0    87.0       81.0
    3        12.0        38.0           30.0         12.0    68.0       40.0


        Composure  Marking  StandingTackle  SlidingTackle  GKDiving  GKHandling  \
    2        94.0     27.0            24.0           33.0       9.0         9.0
    3        68.0     15.0            21.0           13.0      90.0        85.0


        GKKicking  GKPositioning  GKReflexes Release Clause
    2        15.0           15.0        11.0        €228.1M
    3        87.0           88.0        94.0        €138.6M
```

[336]: `fif.iloc[2:4]`

[336]:
```
        Unnamed: 0      ID        Name  Age  \
    2            2  190871   Neymar Jr   26
    3            3  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  \
    2  Paris Saint-Germain  https://cdn.sofifa.org/teams/2/light/73.png  €118.5M
    3    Manchester United  https://cdn.sofifa.org/teams/2/light/11.png     €72M


       Wage  Special Preferred Foot  International Reputation  Weak Foot  \
    2  €290K     2143          Right                      5.0        5.0
    3  €260K     1471          Right                      4.0        3.0


       Skill Moves       Work Rate Body Type Real Face Position Jersey Number  \
    2          5.0    High/ Medium    Neymar       Yes       LW            10
    3          1.0  Medium/ Medium      Lean       Yes       GK             1


          Joined Loaned From Contract Valid Until Height  Weight    LS    ST  \
    2  Aug 3, 2017          0                  2022    5'9  150lbs  84+3  84+3
    3  Jul 1, 2011          0                  2020    6'4  168lbs     0     0


       RS   LW   LF   CF   RF   RW  LAM  CAM  RAM   LM  LCM   CM  \
    2  84+3  89+3  89+3  89+3  89+3  89+3  89+3  89+3  89+3  88+3  81+3  81+3
```

```
3       0       0       0       0       0       0       0       0       0       0       0       0
```

```
      RCM     RM   LWB    LDM    CDM    RDM    RWB     LB    LCB     CB    RCB     RB  \
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
3      0      0     0      0      0      0      0      0      0      0      0      0
```

```
    Crossing  Finishing  HeadingAccuracy  ShortPassing  Volleys  Dribbling  \
2       79.0       87.0             62.0          84.0     84.0       96.0
3       17.0       13.0             21.0          50.0     13.0       18.0
```

```
    Curve  FKAccuracy  LongPassing  BallControl  Acceleration  SprintSpeed  \
2   88.0        87.0         78.0         95.0          94.0         90.0
3   21.0        19.0         51.0         42.0          57.0         58.0
```

```
    Agility  Reactions  Balance  ShotPower  Jumping  Stamina  Strength  \
2      96.0       94.0     84.0       80.0     61.0     81.0      49.0
3      60.0       90.0     43.0       31.0     67.0     43.0      64.0
```

```
    LongShots  Aggression  Interceptions  Positioning  Vision  Penalties  \
2       82.0        56.0           36.0         89.0    87.0       81.0
3       12.0        38.0           30.0         12.0    68.0       40.0
```

```
    Composure  Marking  StandingTackle  SlidingTackle  GKDiving  GKHandling  \
2       94.0     27.0            24.0           33.0       9.0         9.0
3       68.0     15.0            21.0           13.0      90.0        85.0
```

```
    GKKicking  GKPositioning  GKReflexes Release Clause
2       15.0           15.0        11.0        €228.1M
3       87.0           88.0        94.0        €138.6M
```

```
[337]: df.iloc[[2,5,7,8,90]]    #extracting the rows mentioned
```

```
[337]:     Unnamed: 0      ID          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  \
2   https://cdn.sofifa.org/players/4/19/190871.png        Brazil
5   https://cdn.sofifa.org/players/4/19/183277.png       Belgium
7   https://cdn.sofifa.org/players/4/19/176580.png       Uruguay
8   https://cdn.sofifa.org/players/4/19/155862.png         Spain
90  https://cdn.sofifa.org/players/4/19/189513.png         Spain


                                      Flag  Overall  Potential  \
```

```
2   https://cdn.sofifa.org/flags/54.png        92          93
5    https://cdn.sofifa.org/flags/7.png        91          91
7   https://cdn.sofifa.org/flags/60.png        91          91
8   https://cdn.sofifa.org/flags/45.png        91          91
90  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
7          FC Barcelona  https://cdn.sofifa.org/teams/2/light/241.png
8           Real Madrid  https://cdn.sofifa.org/teams/2/light/243.png
90          Valencia CF  https://cdn.sofifa.org/teams/2/light/461.png


     Value    Wage   Special Preferred Foot  International Reputation  \
2   €118.5M  €290K      2143            Right                      5.0
5     €93M   €340K      2142            Right                      4.0
7     €80M   €455K      2346            Right                      5.0
8     €51M   €380K      2201            Right                      4.0
90    €37M    €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
90       4.0          3.0  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                   2020    6'0


    Weight     LS     ST     RS     LW     LF     CF     RF     RW    LAM    CAM    RAM  \
2   150lbs  84+3   84+3   84+3   89+3   89+3   89+3   89+3   89+3   89+3   89+3   89+3
5   163lbs  83+3   83+3   83+3   89+3   88+3   88+3   88+3   89+3   89+3   89+3   89+3
7   190lbs  87+5   87+5   87+5   86+5   87+5   87+5   87+5   86+5   85+5   85+5   85+5
8   181lbs  73+3   73+3   73+3   70+3   71+3   71+3   71+3   70+3   71+3   71+3   71+3
90  163lbs  74+2   74+2   74+2   77+2   77+2   77+2   77+2   77+2   80+2   80+2   80+2


      LM    LCM     CM    RCM     RM    LWB    LDM    CDM    RDM    RWB     LB    LCB  \
2   88+3   81+3   81+3   81+3   88+3   65+3   60+3   60+3   60+3   65+3   60+3   47+3
5   89+3   82+3   82+3   82+3   89+3   66+3   63+3   63+3   63+3   66+3   60+3   49+3
7   84+5   79+5   79+5   79+5   84+5   69+5   68+5   68+5   68+5   69+5   66+5   63+5
8   72+3   75+3   75+3   75+3   72+3   81+3   84+3   84+3   84+3   81+3   84+3   87+3
90  78+2   83+2   83+2   83+2   78+2   74+2   77+2   77+2   77+2   74+2   71+2   69+2
```

	CB	RCB	RB	Crossing	Finishing	HeadingAccuracy	ShortPassing	\
2	47+3	47+3	60+3	79.0	87.0	62.0	84.0	
5	49+3	49+3	60+3	81.0	84.0	61.0	89.0	
7	63+5	63+5	66+5	77.0	93.0	77.0	82.0	
8	87+3	87+3	84+3	66.0	60.0	91.0	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	87.0	86.0	84.0	64.0	90.0	
8	66.0	63.0	74.0	72.0	77.0	84.0	
90	72.0	78.0	89.0	90.0	87.0	84.0	

	Acceleration	SprintSpeed	Agility	Reactions	Balance	ShotPower	\
2	94.0	90.0	96.0	94.0	84.0	80.0	
5	94.0	88.0	95.0	90.0	94.0	82.0	
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	\
2	61.0	81.0	49.0	82.0	56.0	36.0	
5	56.0	83.0	66.0	80.0	54.0	41.0	
7	69.0	90.0	83.0	85.0	87.0	41.0	
8	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	
5	87.0	89.0	86.0	91.0	34.0	27.0	
7	92.0	84.0	85.0	85.0	62.0	45.0	
8	60.0	63.0	75.0	82.0	87.0	92.0	
90	81.0	86.0	83.0	78.0	69.0	68.0	

	SlidingTackle	GKDiving	GKHandling	GKKicking	GKPositioning	GKReflexes	\
2	33.0	9.0	9.0	15.0	15.0	11.0	
5	22.0	11.0	12.0	6.0	8.0	8.0	
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
5	€172.1M
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
2     Neymar Jr   26  https://cdn.sofifa.org/players/4/19/190871.png
4   K. De Bruyne   27  https://cdn.sofifa.org/players/4/19/192985.png
5     E. Hazard   27  https://cdn.sofifa.org/players/4/19/183277.png
```

[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	78	223848	S. Milinković-Savić	23	
900	900	177159	F. Johnson	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	

	Flag	Overall	Potential	
4	https://cdn.sofifa.org/flags/7.png	91	92	
78	https://cdn.sofifa.org/flags/51.png	85	90	
900	https://cdn.sofifa.org/flags/95.png	77	77	
456	https://cdn.sofifa.org/flags/18.png	80	83	
67	https://cdn.sofifa.org/flags/45.png	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	
900	Borussia Mönchengladbach	https://cdn.sofifa.org/teams/2/light/23.png	
456	Eintracht Frankfurt	https://cdn.sofifa.org/teams/2/light/1824.png	
67	FC Bayern München	https://cdn.sofifa.org/teams/2/light/21.png	

	Value	Wage	Special	Preferred Foot	International Reputation	
4	€102M	€355K	2281	Right	4.0	
78	€50.5M	€73K	2206	Right	2.0	
900	€8.5M	€29K	2007	Right	2.0	
456	€19M	€41K	1889	Right	1.0	

67	€45.5M	€130K	2190	Right		3.0

	Weak Foot	Skill Moves	Work Rate	Body Type	Real Face	Position \
4	5.0	4.0	High/ High	Normal	Yes	RCM
78	4.0	4.0	High/ Medium	Normal	Yes	CM
900	4.0	3.0	Medium/ Medium	Normal	Yes	LM
456	2.0	3.0	High/ Medium	Normal	No	RS
67	3.0	5.0	Medium/ Medium	Normal	Yes	CM

	Jersey Number	Joined	Loaned From	Contract Valid Until	Height \
4	7.0	Aug 30, 2015	NaN	2023	5'11
78	21.0	Aug 6, 2015	NaN	2023	6'3
900	19.0	Jul 1, 2014	NaN	2020	6'0
456	9.0	Jul 1, 2017	NaN	2021	6'3
67	19.0	Jul 14, 2013	NaN	2021	5'9

	Weight	LS	ST	RS	LW	LF	CF	RF	RW	LAM	CAM	RAM \
4	154lbs	82+3	82+3	82+3	87+3	87+3	87+3	87+3	87+3	88+3	88+3	88+3
78	168lbs	81+2	81+2	81+2	79+2	81+2	81+2	81+2	79+2	82+2	82+2	82+2
900	163lbs	71+2	71+2	71+2	74+2	74+2	74+2	74+2	74+2	74+2	74+2	74+2
456	201lbs	79+2	79+2	79+2	72+2	76+2	76+2	76+2	72+2	73+2	73+2	73+2
67	154lbs	75+3	75+3	75+3	82+3	81+3	81+3	81+3	82+3	84+3	84+3	84+3

	LM	LCM	CM	RCM	RM	LWB	LDM	CDM	RDM	RWB	LB	LCB \
4	88+3	87+3	87+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	66+2	66+2	66+2	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	Crossing	Finishing	HeadingAccuracy	ShortPassing \
4	66+3	66+3	73+3	93.0	82.0	55.0	92.0
78	79+2	79+2	76+2	64.0	80.0	86.0	85.0
900	68+2	68+2	72+2	76.0	70.0	60.0	76.0
456	59+2	59+2	56+2	40.0	84.0	80.0	70.0
67	67+3	67+3	73+3	72.0	69.0	54.0	90.0

	Volleys	Dribbling	Curve	FKAccuracy	LongPassing	BallControl \
4	82.0	86.0	85.0	83.0	91.0	91.0
78	74.0	86.0	78.0	75.0	85.0	87.0
900	66.0	79.0	72.0	57.0	69.0	76.0
456	79.0	72.0	52.0	46.0	35.0	79.0
67	90.0	90.0	85.0	77.0	87.0	90.0

	Acceleration	SprintSpeed	Agility	Reactions	Balance	ShotPower \
4	78.0	76.0	79.0	91.0	77.0	91.0
78	68.0	70.0	66.0	80.0	59.0	83.0

```
900          78.0      79.0      73.0      75.0      72.0      69.0
456          68.0      76.0      68.0      82.0      53.0      77.0
67           78.0      69.0      90.0      84.0      86.0      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      88.0       80.0        73.0           78.0
900       69.0     76.0      60.0       58.0        71.0           65.0
456       80.0     72.0      91.0       64.0        74.0           30.0
67        75.0     75.0      59.0       79.0        57.0           78.0

        Positioning  Vision  Penalties  Composure  Marking  StandingTackle  \
4            87.0    94.0       79.0       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          84.0    72.0       88.0       74.0     36.0            51.0
67           79.0    86.0       75.0       85.0     67.0            63.0

        SlidingTackle  GKDiving  GKHandling  GKKicking  GKPositioning  \
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
67              65.0       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           11.0      Lean
789             A. Iwobi           17.0    Normal
4557           R. López            6.0      Lean
589   A. Saint-Maximin            7.0    Normal
```

[346]: `fif.loc[fif['Preferred Foot']=='Right','Body Type':'Weight']` *#selects rows*
↪where the preferred foot of a player is right,then selects all the columns
↪from the Body Type to Weight of right-footed players

```
[346]:          Body Type Real Face Position Jersey Number         Joined Loaned From  \
        1      C. Ronaldo       Yes       ST              7  Jul 10, 2018           0
        2          Neymar       Yes       LW             10   Aug 3, 2017           0
        3            Lean       Yes       GK              1   Jul 1, 2011           0
        4          Normal       Yes      RCM              7  Aug 30, 2015           0
        5          Normal       Yes       LF             10   Jul 1, 2012           0
        ...           ...       ...      ...            ...           ...         ...
        18202        Lean        No       CM             22   May 3, 2017           0
        18203      Normal        No       ST             21  Mar 19, 2018           0
        18204      Normal        No       ST             33   Jul 1, 2017           0
        18205        Lean        No       RW             34  Apr 24, 2018           0
        18206        Lean        No       CM             33  Oct 30, 2018           0

              Contract Valid Until Height  Weight
        1                     2022    6'2  183lbs
        2                     2022    5'9  150lbs
        3                     2020    6'4  168lbs
        4                     2023   5'11  154lbs
        5                     2020    5'8  163lbs
        ...                    ...    ...     ...
        18202                 2019    5'9  134lbs
        18203                 2020    6'3  170lbs
        18204                 2021    5'8  148lbs
        18205                 2019   5'10  154lbs
        18206                 2019   5'10  176lbs

        [13948 rows x 9 columns]
```

[ ]: *#when you are passing an index in iloc the last index will be exclusive while*
      ↪in 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

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

	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
94	https://cdn.sofifa.org/players/4/19/184267.png	Algeria
95	https://cdn.sofifa.org/players/4/19/183907.png	Germany
96	https://cdn.sofifa.org/players/4/19/181872.png	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

	Flag	Overall	Potential
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
91	Guangzhou Evergrande Taobao FC
92	Juventus
93	Manchester United
94	FC Porto
95	FC Bayern München
96	FC Barcelona
97	Inter
98	Roma
99	Juventus
100	Atlético Madrid

	Club Logo	Value	Wage	Special
90	https://cdn.sofifa.org/teams/2/light/461.png	€37M	€66K	2119
91	https://cdn.sofifa.org/teams/2/light/111839.png	€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
95	https://cdn.sofifa.org/teams/2/light/21.png	€30M	€115K	1948
96	https://cdn.sofifa.org/teams/2/light/241.png	€26M	€205K	2230

```
97           https://cdn.sofifa.org/teams/2/light/44.png    €37.5M  €110K      2199
98           https://cdn.sofifa.org/teams/2/light/52.png    €30.5M  €115K      1931
99           https://cdn.sofifa.org/teams/2/light/45.png      €33M  €160K      2154
100          https://cdn.sofifa.org/teams/2/light/240.png   €38.5M  €100K      2003


     Preferred Foot  International Reputation  Weak Foot  Skill Moves  \
90           Right                       2.0        4.0          3.0
91           Right                       3.0        3.0          3.0
92           Right                       3.0        3.0          1.0
93           Right                       4.0        3.0          4.0
94           Right                       3.0        3.0          4.0
95           Right                       4.0        4.0          2.0
96           Right                       4.0        4.0          3.0
97           Right                       3.0        5.0          4.0
98           Right                       3.0        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       High/ High      Lean       Yes      LDM             9              0
92   Medium/ Medium      Lean       Yes       GK             1   Jul 19, 2017
93       High/ High    Normal       Yes       RW             7   Jan 22, 2018
94     High/ Medium    Normal        No       LM             8   Jul 22, 2014
95   Medium/ Medium    Stocky       Yes      RCB            17   Jul 14, 2011
96   Medium/ Medium    Normal       Yes      CAM             8    Aug 6, 2018
97   Medium/ Medium      Lean       Yes       LM            44    Sep 1, 2015
98   Medium/ Medium      Lean       Yes       ST             9    Jul 1, 2015
99       High/ High    Normal       Yes      RCM             6    Jul 1, 2015
100    High/ Medium    Normal       Yes       LS            19    Jan 1, 2018


      Loaned From Contract Valid Until Height  Weight    LS    ST    RS    LW  \
90              0                2020    6'0  163lbs  74+2  74+2  74+2  77+2
91    FC Barcelona    Jun 30, 2019    6'0  157lbs  81+3  81+3  81+3  79+3
92              0                2021    6'5  198lbs     0     0     0     0
93              0                2022    5'7  163lbs  81+3  81+3  81+3  82+3
94              0                2019    5'9  146lbs  75+3  75+3  75+3  83+3
95              0                2021    6'4  198lbs  63+3  63+3  63+3  63+3
96              0                2021   5'11  165lbs  78+3  78+3  78+3  76+3
97              0                2022    6'1  176lbs  82+3  82+3  82+3  82+3
98              0                2020    6'4  185lbs  82+3  82+3  82+3  77+3
99              0                2021    6'2  198lbs  77+3  77+3  77+3  76+3
100             0                2021    6'2  190lbs  82+3  82+3  82+3  76+3


       LF    CF    RF    RW   LAM   CAM   RAM    LM   LCM    CM   RCM    RM  \
90   77+2  77+2  77+2  77+2  80+2  80+2  80+2  78+2  83+2  83+2  83+2  78+2
91   81+3  81+3  81+3  79+3  81+3  81+3  81+3  79+3  82+3  82+3  82+3  79+3
```

	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0
93	82+3	82+3	82+3	82+3	82+3	82+3	82+3	82+3	77+3	77+3	77+3	82+3
94	81+3	81+3	81+3	83+3	82+3	82+3	82+3	82+3	76+3	76+3	76+3	82+3
95	64+3	64+3	64+3	63+3	66+3	66+3	66+3	67+3	72+3	72+3	72+3	67+3
96	78+3	78+3	78+3	76+3	78+3	78+3	78+3	76+3	81+3	81+3	81+3	76+3
97	82+3	82+3	82+3	82+3	81+3	81+3	81+3	83+3	79+3	79+3	79+3	83+3
98	80+3	80+3	80+3	77+3	78+3	78+3	78+3	76+3	74+3	74+3	74+3	76+3
99	78+3	78+3	78+3	76+3	79+3	79+3	79+3	77+3	82+3	82+3	82+3	77+3
100	79+3	79+3	79+3	76+3	75+3	75+3	75+3	75+3	69+3	69+3	69+3	75+3

	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	69+2	69+2	71+2	84.0
91	78+3	81+3	81+3	81+3	78+3	78+3	80+3	80+3	80+3	78+3	64.0
92	0	0	0	0	0	0	0	0	0	0	12.0
93	65+3	64+3	64+3	64+3	65+3	62+3	57+3	57+3	57+3	62+3	77.0
94	64+3	60+3	60+3	60+3	64+3	59+3	48+3	48+3	48+3	59+3	79.0
95	76+3	80+3	80+3	80+3	76+3	78+3	83+3	83+3	83+3	78+3	69.0
96	79+3	83+3	83+3	83+3	79+3	80+3	83+3	83+3	83+3	80+3	76.0
97	75+3	72+3	72+3	72+3	75+3	72+3	68+3	68+3	68+3	72+3	83.0
98	59+3	61+3	61+3	61+3	59+3	56+3	55+3	55+3	55+3	56+3	63.0
99	78+3	83+3	83+3	83+3	78+3	77+3	81+3	81+3	81+3	77+3	72.0
100	61+3	61+3	61+3	61+3	61+3	59+3	61+3	61+3	61+3	59+3	65.0

	Finishing	HeadingAccuracy	ShortPassing	Volleys	Dribbling	Curve \
90	79.0	61.0	90.0	72.0	78.0	89.0
91	81.0	85.0	84.0	75.0	82.0	66.0
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
97	79.0	80.0	81.0	81.0	84.0	73.0
98	89.0	84.0	77.0	77.0	76.0	65.0
99	72.0	76.0	85.0	78.0	81.0	68.0
100	87.0	82.0	65.0	81.0	77.0	62.0

	FKAccuracy	LongPassing	BallControl	Acceleration	SprintSpeed	Agility \
90	90.0	87.0	84.0	51.0	43.0	66.0
91	72.0	80.0	84.0	73.0	73.0	69.0
92	14.0	36.0	22.0	51.0	47.0	55.0
93	78.0	75.0	86.0	86.0	79.0	90.0
94	78.0	72.0	86.0	87.0	75.0	92.0
95	31.0	83.0	70.0	67.0	72.0	56.0
96	68.0	79.0	82.0	60.0	55.0	74.0
97	75.0	77.0	85.0	84.0	88.0	78.0
98	54.0	72.0	84.0	65.0	66.0	57.0
99	68.0	82.0	84.0	54.0	60.0	55.0

100	59.0	52.0	83.0	74.0	76.0	58.0

	Reactions	Balance	ShotPower	Jumping	Stamina	Strength	LongShots \
90	78.0	72.0	78.0	51.0	78.0	72.0	82.0
91	84.0	66.0	83.0	90.0	92.0	81.0	80.0
92	82.0	51.0	15.0	71.0	45.0	65.0	14.0
93	83.0	87.0	84.0	87.0	83.0	72.0	81.0
94	84.0	87.0	69.0	72.0	85.0	49.0	76.0
95	82.0	52.0	78.0	74.0	69.0	91.0	58.0
96	84.0	75.0	86.0	85.0	83.0	79.0	85.0
97	81.0	74.0	84.0	84.0	89.0	78.0	79.0
98	83.0	36.0	86.0	66.0	76.0	80.0	79.0
99	87.0	54.0	82.0	68.0	78.0	87.0	78.0
100	85.0	53.0	83.0	64.0	76.0	92.0	74.0

	Aggression	Interceptions	Positioning	Vision	Penalties	Composure \
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	StandingTackle	SlidingTackle	GKDiving	GKHandling	GKKicking \
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

	GKPositioning	GKReflexes	Release Clause
90	14.0	8.0	€77.7M
91	6.0	8.0	0
92	85.0	87.0	€55.2M
93	12.0	13.0	€69.4M
94	7.0	7.0	€78M

```
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      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
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
18204  https://cdn.sofifa.org/players/4/19/241638.png     England
18205  https://cdn.sofifa.org/players/4/19/246268.png     England
18206  https://cdn.sofifa.org/players/4/19/246269.png     England

                                     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
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
18204  https://cdn.sofifa.org/flags/14.png       47         67
18205  https://cdn.sofifa.org/flags/14.png       47         66
```

```
18206  https://cdn.sofifa.org/flags/14.png           46           66

                       Club                                        Club Logo  \
0              FC Barcelona     https://cdn.sofifa.org/teams/2/light/241.png
1                  Juventus      https://cdn.sofifa.org/teams/2/light/45.png
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           Manchester City      https://cdn.sofifa.org/teams/2/light/10.png
…                       …                                                …
18202        Crewe Alexandra    https://cdn.sofifa.org/teams/2/light/121.png
18203        Trelleborgs FF     https://cdn.sofifa.org/teams/2/light/703.png
18204      Cambridge United    https://cdn.sofifa.org/teams/2/light/1944.png
18205      Tranmere Rovers    https://cdn.sofifa.org/teams/2/light/15048.png
18206      Tranmere Rovers    https://cdn.sofifa.org/teams/2/light/15048.png


            Value   Wage  Special Preferred Foot  International Reputation  \
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
…               …      …        …              …                        …
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


          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         Lean       Yes        GK
4              5.0          4.0      High/ High       Normal       Yes       RCM
…                …            …               …            …         …         …
18202          2.0          2.0  Medium/ Medium         Lean        No        CM
18203          2.0          2.0  Medium/ Medium       Normal        No        ST
18204          3.0          2.0  Medium/ Medium       Normal        No        ST
18205          3.0          2.0  Medium/ Medium         Lean        No        RW
18206          3.0          2.0  Medium/ Medium         Lean        No        CM


          Jersey Number         Joined Loaned From Contract Valid Until Height  \
0                    10    Jul 1, 2004           0                 2021    5'7
1                     7   Jul 10, 2018           0                 2022    6'2
2                    10    Aug 3, 2017           0                 2022    5'9
3                     1    Jul 1, 2011           0                 2020    6'4
4                     7   Aug 30, 2015           0                 2023   5'11
```

…		…	…	…	… …
18202	22	May 3, 2017	0	2019	5'9
18203	21	Mar 19, 2018	0	2020	6'3
18204	33	Jul 1, 2017	0	2021	5'8
18205	34	Apr 24, 2018	0	2019	5'10
18206	33	Oct 30, 2018	0	2019	5'10

	Weight	LS	ST	RS	LW	LF	CF	RF	RW	LAM	CAM	\
0	159lbs	88+2	88+2	88+2	92+2	93+2	93+2	93+2	92+2	93+2	93+2	
1	183lbs	91+3	91+3	91+3	89+3	90+3	90+3	90+3	89+3	88+3	88+3	
2	150lbs	84+3	84+3	84+3	89+3	89+3	89+3	89+3	89+3	89+3	89+3	
3	168lbs	0	0	0	0	0	0	0	0	0	0	
4	154lbs	82+3	82+3	82+3	87+3	87+3	87+3	87+3	87+3	88+3	88+3	
…	…	…	…	…	…	…	…	…	…	…	…	
18202	134lbs	42+2	42+2	42+2	44+2	44+2	44+2	44+2	44+2	45+2	45+2	
18203	170lbs	45+2	45+2	45+2	39+2	42+2	42+2	42+2	39+2	40+2	40+2	
18204	148lbs	45+2	45+2	45+2	45+2	46+2	46+2	46+2	45+2	44+2	44+2	
18205	154lbs	47+2	47+2	47+2	47+2	46+2	46+2	46+2	47+2	45+2	45+2	
18206	176lbs	43+2	43+2	43+2	45+2	44+2	44+2	44+2	45+2	45+2	45+2	

	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	
…	…	…	…	…	…	…	…	…	…	…			
18202	45+2	44+2	45+2	45+2	45+2	44+2	44+2	45+2	45+2	45+2	44+2	45+2	
18203	40+2	38+2	35+2	35+2	35+2	38+2	30+2	31+2	31+2	31+2	30+2	29+2	
18204	44+2	44+2	38+2	38+2	38+2	44+2	34+2	30+2	30+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	46+2	46+2	46+2	46+2	46+2	46+2	46+2	

	LCB	CB	RCB	RB	Crossing	Finishing	HeadingAccuracy	\
0	47+2	47+2	47+2	59+2	84.0	95.0	70.0	
1	53+3	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	

ShortPassing Volleys Dribbling Curve FKAccuracy LongPassing \

0	90.0	86.0	97.0	93.0	94.0	87.0
1	81.0	87.0	88.0	81.0	76.0	77.0
2	84.0	84.0	96.0	88.0	87.0	78.0
3	50.0	13.0	18.0	21.0	19.0	51.0
4	92.0	82.0	86.0	85.0	83.0	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	25.0
18204	38.0	38.0	45.0	38.0	27.0	28.0
18205	42.0	40.0	51.0	34.0	32.0	32.0
18206	48.0	30.0	43.0	40.0	34.0	44.0

	BallControl	Acceleration	SprintSpeed	Agility	Reactions	Balance \
0	96.0	91.0	86.0	91.0	95.0	95.0
1	94.0	89.0	91.0	87.0	96.0	70.0
2	95.0	94.0	90.0	96.0	94.0	84.0
3	42.0	57.0	58.0	60.0	90.0	43.0
4	91.0	78.0	76.0	79.0	91.0	77.0
...	...	...	...	...	...	...
18202	43.0	54.0	57.0	60.0	49.0	76.0
18203	40.0	41.0	39.0	38.0	40.0	52.0
18204	44.0	70.0	69.0	50.0	47.0	58.0
18205	52.0	61.0	60.0	52.0	21.0	71.0
18206	51.0	57.0	55.0	55.0	51.0	63.0

	ShotPower	Jumping	Stamina	Strength	LongShots	Aggression \
0	85.0	68.0	72.0	59.0	94.0	48.0
1	95.0	95.0	88.0	79.0	93.0	63.0
2	80.0	61.0	81.0	49.0	82.0	56.0
3	31.0	67.0	43.0	64.0	12.0	38.0
4	91.0	63.0	90.0	75.0	91.0	76.0
...	...	...	...	...	...	...
18202	43.0	55.0	40.0	47.0	38.0	46.0
18203	41.0	47.0	43.0	67.0	42.0	47.0
18204	45.0	60.0	55.0	32.0	45.0	32.0
18205	64.0	42.0	40.0	48.0	34.0	33.0
18206	43.0	62.0	47.0	60.0	32.0	56.0

	Interceptions	Positioning	Vision	Penalties	Composure	Marking \
0	22.0	94.0	94.0	75.0	96.0	33.0
1	29.0	95.0	82.0	85.0	95.0	28.0
2	36.0	89.0	87.0	81.0	94.0	27.0
3	30.0	12.0	68.0	40.0	68.0	15.0
4	61.0	87.0	94.0	79.0	88.0	68.0
...	...	...	...	...	...	...
18202	46.0	39.0	52.0	43.0	45.0	40.0
18203	16.0	46.0	33.0	43.0	42.0	22.0

```
18204              15.0          48.0      43.0       55.0       41.0       32.0
18205              22.0          44.0      47.0       50.0       46.0       20.0
18206              42.0          34.0      49.0       33.0       43.0       40.0

       StandingTackle  SlidingTackle  GKDiving  GKHandling  GKKicking  \
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
...               ...            ...       ...         ...        ...
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           11.0       6.0         5.0       10.0
18205            25.0           27.0      14.0         6.0       14.0
18206            43.0           50.0      10.0        15.0        9.0

       GKPositioning  GKReflexes Release Clause
0               14.0         8.0        €226.5M
1               14.0        11.0        €127.1M
2               15.0        11.0        €228.1M
3               88.0        94.0        €138.6M
4               10.0        13.0        €196.4M
...              ...         ...            ...
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]
```

[354]: `fif.head(1)`

```
[354]:    Unnamed: 0      ID      Name  Age  \
       0           0  158023  L. Messi   31

                                    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     2202

         Preferred Foot  International Reputation  Weak Foot  Skill Moves  \
```

```
0              Left                    5.0         4.0          4.0

        Work Rate Body Type Real Face Position Jersey Number      Joined  \
0  Medium/ Medium    Messi       Yes        RF            10  Jul 1, 2004

  Loaned From Contract Valid Until Height  Weight    LS    ST    RS    LW  \
0           0                2021    5'7  159lbs  88+2  88+2  88+2  92+2

     LF    CF    RF    RW   LAM   CAM   RAM    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

    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  \
0      95.0             70.0          90.0     86.0       97.0   93.0

  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  \
0       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         8.0       €226.5M
```

[ ]: