loc vs iloc

In [1]:
```
import pandas as pd
```

In [2]:
```
names = ['L. Messi', 'Cristiano Ronaldo', 'Neymar Jr', 'J. Oblak', 'E. Hazard']
age = [32, 34, 27, 26, 28]
height_cm = [170, 187, 175, 188, 175]
nationality = ['Argentina', 'Portugal', 'Brazil', 'Slovenia', 'Belgium']
club = ['Paris Saint-Germain', 'Manchester United', 'Paris Saint-Germain', 'Atlét

df = pd.DataFrame(index=names, data={'age':age, 'height_cm':height_cm, 'nationali
```

In [3]:
```
df
```

Out[3]:

	age	height_cm	nationality	club
L. Messi	32	170	Argentina	Paris Saint-Germain
Cristiano Ronaldo	34	187	Portugal	Manchester United
Neymar Jr	27	175	Brazil	Paris Saint-Germain
J. Oblak	26	188	Slovenia	Atlético Madrid
E. Hazard	28	175	Belgium	Real Madrid

Selecting with a single value

In [4]:
```
# get the height of L.Messi
# loc
df.loc['L. Messi', 'height_cm']
# iloc
df.iloc[0, 1]
```

Out[4]: 170

In [5]:
```
# get the height of Cristiano Ronaldo
# loc
df.loc['Cristiano Ronaldo', 'height_cm']
# iloc
df.iloc[1, 1]
```

Out[5]: 187

In [6]:
```
# get all the data about L.Messi
# loc
df.loc['L. Messi', :]
# iloc
df.iloc[0, :]
```

Out[6]:
```
age                            32
height_cm                     170
nationality             Argentina
club           Paris Saint-Germain
Name: L. Messi, dtype: object
```

Selecting with a list of values

In [7]:
```
# get all data about L.Messi and Cristiano Ronaldo
# loc
df.loc[['L. Messi', 'Cristiano Ronaldo']]
# iloc
df.iloc[[0, 1]]
```

Out[7]:

	age	height_cm	nationality	club
L. Messi	32	170	Argentina	Paris Saint-Germain
Cristiano Ronaldo	34	187	Portugal	Manchester United

In [8]:
```
# get the height of L.Messi and Cristiano Ronaldo
df.loc[['L. Messi', 'Cristiano Ronaldo'], 'height_cm']

# get the height of L.Messi and Cristiano Ronaldo
df.iloc[[0, 1], 1]
```

Out[8]:
```
L. Messi            170
Cristiano Ronaldo   187
Name: height_cm, dtype: int64
```

Selecting a range of data with a slice

In [9]:
```
# slice column labels: from age to nationality
# loc
players = ['L. Messi', 'Cristiano Ronaldo']
df.loc[players, 'age':'nationality']

# iloc
players = [0, 1]
df.iloc[players, 0:3] # age:nationality+1
```

Out[9]:

	age	height_cm	nationality
L. Messi	32	170	Argentina
Cristiano Ronaldo	34	187	Portugal

Selecting with conditions

In [10]:
```
# one condition: select player with height above 180cm
# loc
columns = ['age', 'height_cm', 'club']
df.loc[df['height_cm']>180, columns]

# iloc
columns = [0,1,3]
df.iloc[list(df['height_cm']>180), columns]
```

Out[10]:

	age	height_cm	club
Cristiano Ronaldo	34	187	Manchester United
J. Oblak	26	188	Atlético Madrid

In [11]:
```
# multiple conditions: select player with height above 180cm that played in PSG
# loc
df.loc[(df['height_cm']>170) & (df['club']=='Paris Saint-Germain'), :]

# iloc
df.iloc[list((df['height_cm']>170) & (df['club']=='Paris Saint-Germain')), :]
```

Out[11]:

	age	height_cm	nationality	club
Neymar Jr	27	175	Brazil	Paris Saint-Germain