SQL Like Joins in Pandas

SQL Like Joins in Pandas

Suppose we have a data of students which contains features like:

- Roll number
- Name
- Grade
- Marks
- City

	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
1	101	Rahul	B	15	Delhi
2	104	Prateek	A	20	Delhi
3	103	Piyuesh	C	4	Gurugram
4	105	Kartik	A	22	Hyderabad

SQL Like Joins in Pandas

We have another data with city and state mapping.

	city	state
0	Gurugram	Haryana
1	Delhi	Delhi
2	Hyderabad	Telangana

SQL Like Joins in Pandas

Now, we want to add another column **state** in the first dataframe using city state mapping.

	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
1	101	Rahul	B	15	Delhi
2	104	Prateek	A	20	Delhi
3	103	Piyuesh	C	4	Gurugram
4	105	Kartik	A	22	Hyderabad

	city	state
0	Gurugram	Haryana
1	Delhi	Delhi
2	Hyderabad	Telangana

SQL Like Joins in Pandas: Left Join

By doing a left join will help us adding the new feature state

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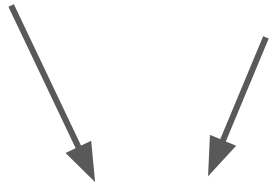

	city	state
0	Gurugram	Haryana
1	Delhi	Delhi
2	Hyderabad	Telangana

SQL Like Joins in Pandas: Left Join

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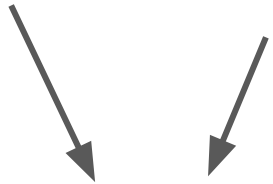

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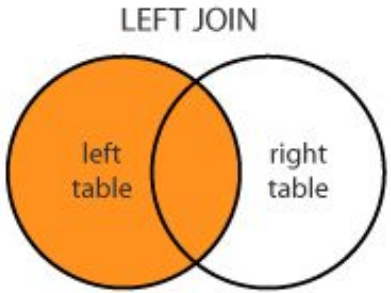

	roll_no	name	grade	marks	city	state
0	102	Aravind	B	15	Gurugram	Haryana
1	101	Rahul	B	15	Delhi	Delhi
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SQL Like Joins in Pandas: Right Join

SQL Like Joins in Pandas: Right Join

Now, we have another dataframe that contains roll_no of some students.

	roll_no
0	102
1	103

SQL Like Joins in Pandas: Right Join

We need to find out the other details of the students. We can do this by using **right join**.

	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
1	101	Rahul	B	15	Delhi
2	104	Prateek	A	20	Delhi
3	103	Piyuesh	C	4	Gurugram
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	roll_no
0	102
1	103

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We need to find out the other details of the students. We can do this by using **right join**.

	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
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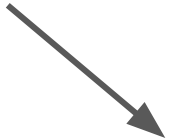

	roll_no
0	102
1	103

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1	101	Rahul	B	15	Delhi
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3	103	Piyuesh	C	4	Gurugram
4	105	Kartik	A	22	Hyderabad

	roll_no
0	102
1	103

	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
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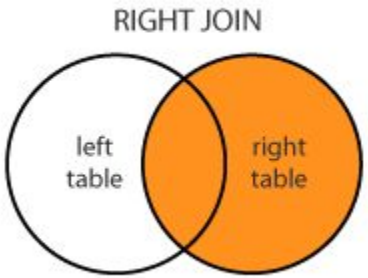
	roll_no
0	102
1	103



	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
1	103	Piyuesh	C	4	Gurugram

SQL Like Joins in Pandas: Full Join

Now, students participated in a placement drive and some of the students got placed and the details are given in the dataframe.

	roll_no	company	package (lpa)
0	102	ABC	8.0
1	105	XYZ	14.5
2	101	ABC	11.0

SQL Like Joins in Pandas: Full Join

Now, we want to combine the students data and student selection data. We can do this by using outer/full join.

	roll_no	name	grade	marks	city
0	102	Aravind	B	15	Gurugram
1	101	Rahul	B	15	Delhi
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0	102	ABC	8.0
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	roll_no	name	grade	marks	city	company	package (lpa)
0	102	Aravind	B	15	Gurugram	ABC	8.0
1	101	Rahul	B	15	Delhi	ABC	11.0
2	104	Prateek	A	20	Delhi	NaN	NaN
3	103	Piyuesh	C	4	Gurugram	NaN	NaN
4	105	Kartik	A	22	Hyderabad	XYZ	14.5

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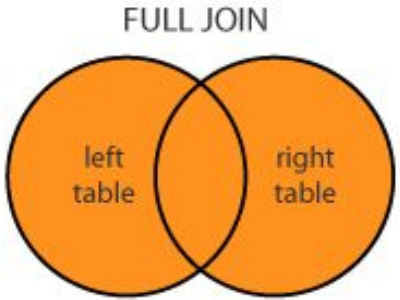

	roll_no	name	grade	marks	city	company	package (lpa)
0	102	Aravind	B	15	Gurugram	ABC	8.0
1	101	Rahul	B	15	Delhi	ABC	11.0
2	104	Prateek	A	20	Delhi	NaN	NaN
3	103	Piyuesh	C	4	Gurugram	NaN	NaN
4	105	Kartik	A	22	Hyderabad	XYZ	14.5

SQL Like Joins in Pandas: Inner Join

Now, consider it was a pool placement drive and students from multiple colleges participated.

The college `"ZU UNIVERSITY"` got the list of students selected for the job. You need to find out the details of the students who got selected from the college `"ZU

	college	roll_no	name	grade	marks	city
0	ZU UNIVERSITY	102	Aravind	B	15	Gurugram
1	ZU UNIVERSITY	101	Rahul	B	15	Delhi
2	ZU UNIVERSITY	104	Prateek	A	20	Delhi
3	ZU UNIVERSITY	103	Piyuesh	C	4	Gurugram
4	ZU UNIVERSITY	105	Kartik	A	22	Hyderabad

	college	name	company	package (lpa)
0	ZU UNIVERSITY	Aravind	ABC	8.0
1	ZU UNIVERSITY	Rahul	XYZ	14.5
2	AB UNIVERSITY	Rahul	ABC	11.0
3	ZU UNIVERSITY	Prateek	AEP	6.0
4	AB UNIVERSITY	Harsh	ABC	6.0

SQL Like Joins in Pandas: Inner Join

Now, we have 2 columns common, **college** and **name** in both the dataframes. So, here we will use the inner join.

	college	roll_no	name	grade	marks	city
0	ZU UNIVERSITY	102	Aravind	B	15	Gurugram
1	ZU UNIVERSITY	101	Rahul	B	15	Delhi
2	ZU UNIVERSITY	104	Prateek	A	20	Delhi
3	ZU UNIVERSITY	103	Piyuesh	C	4	Gurugram
4	ZU UNIVERSITY	105	Kartik	A	22	Hyderabad

	college	name	company	package (lpa)
0	ZU UNIVERSITY	Aravind	ABC	8.0
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2	AB UNIVERSITY	Rahul	ABC	11.0
3	ZU UNIVERSITY	Prateek	AEP	6.0
4	AB UNIVERSITY	Harsh	ABC	6.0

	college	roll_no	name	grade	marks	city	company	package (lpa)
0	ZU UNIVERSITY	102	Aravind	B	15	Gurugram	ABC	8.0
1	ZU UNIVERSITY	101	Rahul	B	15	Delhi	XYZ	14.5
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