Pandas Joining and merging DataFrame

---

1. Write a Pandas program to join the two given dataframes along rows and assign all data.

Test Data:

---

student_data1:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

student_data2:

	student_id	name	marks
0	S4	Scarlette Fisher	201
1	S5	Carla Williamson	200
2	S6	Dante Morse	198
3	S7	Kaiser William	219
4	S8	Madeeha Preston	201

2. Write a Pandas program to join the two given dataframes along columns and assign all data.

Test Data:

student_data1:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

student_data2:

	student_id	name	marks
0	S4	Scarlette Fisher	201
1	S5	Carla Williamson	200
2	S6	Dante Morse	198
3	S7	Kaiser William	219
4	S8	Madeeha Preston	201

3. Write a Pandas program to append rows to an existing DataFrame and display the combined data.

Test Data:

tudent_data1

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

New Row(s)

student_id	S6
name	Scarlette Fisher
marks	205

dtype: object

4. Write a Pandas program to append a list of dictioneries or series to a existing DataFrame and display the combined data.

Test Data:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222

4 S5 Kwame Morin 199

Dictionary:
student_id S6
name Scarlette Fisher
marks 205
dtype: object

5. Write a Pandas program to join the two given dataframes along rows and merge with another dataframe along the common column id.

Test Data:

student_data1:
  student_id name marks
0 S1 Danniella Fenton 200
1 S2 Ryder Storey 210
2 S3 Bryce Jensen 190
3 S4 Ed Bernal 222
4 S5 Kwame Morin 199

student_data2:
  student_id name marks
0 S4 Scarlette Fisher 201
1 S5 Carla Williamson 200
2 S6 Dante Morse 198
3 S7 Kaiser William 219
4 S8 Madeeha Preston 201

exam_data:
  student_id exam_id
0 S1 23
1 S2 45
2 S3 12
3 S4 67
4 S5 21
5 S7 55
6 S8 33
7 S9 14

8 S10 56
9 S11 83
10 S12 88
11 S13 12

6. Write a Pandas program to join the two dataframes using the common column of both dataframes.

Test Data:

student_data1:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

student_data2:

	student_id	name	marks
0	S4	Scarlette Fisher	201
1	S5	Carla Williamson	200
2	S6	Dante Morse	198
3	S7	Kaiser William	219
4	S8	Madeeha Preston	201

7. Write a Pandas program to join the two dataframes with matching records from both sides where available.

Test Data:

student_data1:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222

4 S5 Kwame Morin 199

student_data2:
student_id name marks
0 S4 Scarlette Fisher 201
1 S5 Carla Williamson 200
2 S6 Dante Morse 198
3 S7 Kaiser William 219
4 S8 Madeeha Preston 201

8. Write a Pandas program to join (left join) the two dataframes using keys from left dataframe only.

Test Data:

data1:
key1 key2 P Q
0 K0 K0 P0 Q0
1 K0 K1 P1 Q1
2 K1 K0 P2 Q2
3 K2 K1 P3 Q3

data2:
key1 key2 R S
0 K0 K0 R0 S0
1 K1 K0 R1 S1
2 K1 K0 R2 S2
3 K2 K0 R3 S3

9. Write a Pandas program to join two dataframes using keys from right dataframe only.

Test Data:

data1:
key1 key2 P Q
0 K0 K0 P0 Q0
1 K0 K1 P1 Q1

2 K1 K0 P2 Q2
3 K2 K1 P3 Q3

data2:
key1 key2 R S
0 K0 K0 R0 S0
1 K1 K0 R1 S1
2 K1 K0 R2 S2
3 K2 K0 R3 S3

10. Write a Pandas program to merge two given datasets using multiple join keys.

Test Data:

data1:
key1 key2 P Q
0 K0 K0 P0 Q0
1 K0 K1 P1 Q1
2 K1 K0 P2 Q2
3 K2 K1 P3 Q3

data2:
key1 key2 R S
0 K0 K0 R0 S0
1 K1 K0 R1 S1
2 K1 K0 R2 S2
3 K2 K0 R3 S3

11. Write a Pandas program to create a new DataFrame based on existing series, using specified argument and override the existing columns names.

12. Write a Pandas program to create a combination from two dataframes where a column id combination appears more than once in both dataframes.

Test Data:

data1:

	key1	key2	P	Q
0	K0	K0	P0	Q0
1	K0	K1	P1	Q1
2	K1	K0	P2	Q2
3	K2	K1	P3	Q3

data2:

	key1	key2	R	S
0	K0	K0	R0	S0
1	K1	K0	R1	S1
2	K1	K0	R2	S2
3	K2	K0	R3	S3

13. Write a Pandas program to combine the columns of two potentially differently-indexed DataFrames into a single result DataFrame.

Test Data:

data1:

	A	B
K0	A0	B0
K1	A1	B1
K2	A2	B2

data2:

	C	D
K0	C0	D0
K2	C2	D2
K3	C3	D3

14. Write a Pandas program to merge two given dataframes with different columns.

Test Data:

data1:

	key1	key2	P	Q

0 K0 K0 P0 Q0
1 K0 K1 P1 Q1
2 K1 K0 P2 Q2
3 K2 K1 P3 Q3

data2:
key1 key2 R S
0 K0 K0 R0 S0
1 K1 K0 R1 S1
2 K1 K0 R2 S2
3 K2 K0 R3 S3

15. Write a Pandas program to Combine two DataFrame objects by filling null values in one DataFrame with non-null values from other DataFrame.

Test Data:

Original DataFrames:
A B
0 NaN 3
1 0.0 4
2 NaN 5

A B
0 1 3.0
1 1 NaN
2 3 3.0