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Merge two DataFrames based on multiple keys in pandas

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▼ Does pandas (or another module) have any functions to support merge (or join) two tables based on multiple keys?

★
2 For example, I have two tables (DataFrames) `a` and `b` :

```
>>> a
  A  B  value1
1  1    23
1  2    34
2  1   2342
2  2    333
```

```
>>> b
  A  B  value2
1  1   0.10
1  2   0.20
2  1   0.13
2  2   0.33
```

The desired result is:

```
  A  B  value1  value2
1  1    23   0.10
1  2    34   0.20
2  1   2342  0.13
2  2    333  0.33
```

[python](#)[pandas](#)[merge](#)[dataframe](#)

edited Dec 26 '17 at 17:08

[Alex Riley](#)**83.7k**

26

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asked Aug 28 '15 at 18:21

[Surah Li](#)**68**

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- 1 For more information on various facets and functionality of the merge, join, and concat API, please take a look at [Pandas Merging 101](#). – [coldspeed](#) Dec 15 '18 at 13:12



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To merge by multiple keys, you just need to pass the keys in a list to

[pd.merge](#) :

```
>>> pd.merge(a, b, on=['A', 'B'])
   A  B  value1  value2
0  1  1      23    0.10
1  1  2      34    0.20
2  2  1     2342    0.13
3  2  2      333    0.33
```

In fact, the default for `pd.merge` is to use the intersection of the two DataFrames' column labels, so `pd.merge(a, b)` would work equally well in this case.

answered Aug 28 '15 at 18:25



[Alex Riley](#)

83.7k 26 166 168

@SurahLi - glad it helped! If this answers the question to your satisfaction, please consider marking it as an accepted answer. (Or if you still have questions about `merge`, let me know and I'll do my best to answer them.) – [Alex Riley](#) Aug 28 '15 at 20:12

1 what if column names are different? – [EntryLevelR](#) Aug 2 '18 at 15:21

3 @EntryLevelR: you can the `left_on` and `right_on` arguments (instead of `on`) to solve the issue. – [Alex Riley](#) Aug 2 '18 at 15:36
