

Pandas – pivot()

Return reshaped DataFrame organized by given index / column values.

DataFrame.pivot(index=None, columns=None, values=None)

index : str or object or a list of str, optional

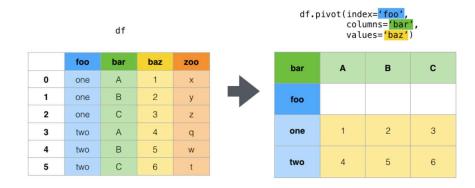
Column to use to make new frame's index. If None, uses existing index.

columns: str or object or a list of str

Column to use to make new frame's columns.

values: str, object or a list of the previous, optional

Column(s) to use for populating new frame's values. If not specified, all remaining columns will be used and the result will have hierarchically indexed columns.





Pandas - pivot() - example

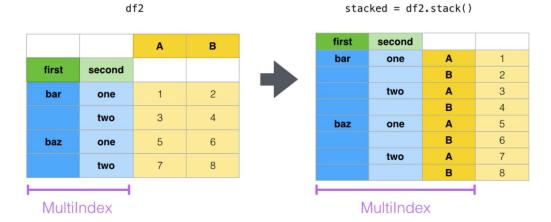
pivot, reshape DataFrame by given index / column / values

```
In [18]: df4 = pd.DataFrame({'class':['cycle','cycle','cycle', 'pilates', 'pilates', 'pilates'],
                              'day':['0-Mon', '2-Wed', '5-Sat', '0-Mon', '1-Tue', '4-Fri'],
                              'hour': [12, 10, 15, 9, 10, 14],})
          df4
Out[18]:
              class
                      day hour
             cycle 0-Mon
                            12
              cycle 2-Wed
                            10
                    5-Sat
              cycle
                            15
          3 pilates 0-Mon
                             9
          4 pilates
                    1-Tue
                            10
          5 pilates
                     4-Fri
                            14
In [19]: df_pivot = df4.pivot(index = 'class', columns = 'day', values = 'hour')
          df pivot
Out[19]:
             day 0-Mon 1-Tue 2-Wed 4-Fri 5-Sat
            class
                   12.0
            cycle
                         NaN
                                10.0 NaN
                                          15.0
           pilates
                    9.0
                         10.0
                                NaN 14.0
                                           NaN
```

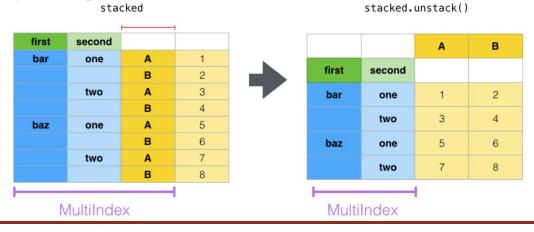


Pandas – stack() and unstack()

stack: "pivot" a level of the (possibly hierarchical) column labels, returning a DataFrame with an index with a new inner-most level of row labels



unstack : (inverse operation of stack) "pivot" a level of the (possibly hierarchical) row index to the column axis, producing a reshaped DataFrame with a new inner-most level of column labels





Pandas – stack() and unstack() - example

Stack and unstack

```
In [20]: df_stack=df_pivot.stack()
          df stack
Out[20]: class
                   day
          cycle
                   0-Mon
                             12.0
                   2-Wed
                             10.0
                   5-Sat
                             15.0
          pilates 0-Mon
                             9.0
                   1-Tue
                             10.0
                   4-Fri
                             14.0
          dtype: float64
In [21]: df_unstack=df_stack.unstack()
          df_unstack
Out[21]:
             day 0-Mon 1-Tue 2-Wed 4-Fri 5-Sat
            class
            cycle
                   12.0
                         NaN
                                10.0
                                     NaN
                                           15.0
           pilates
                    9.0
                         10.0
                                NaN
                                     14.0
                                           NaN
```



Pandas – melt()

The top-level **melt**() function and the corresponding **DataFrame.melt**() are useful to massage a DataFrame into a format where one or more columns are identifier variables, while all other columns, considered measured variables, are "unpivoted" to the row axis, leaving just two non-identifier columns, "variable" and "value". The names of those columns can be customized by supplying the **var_name** and **value_name** parameters.





Pandas - melt() - example

Melt function

```
In [22]: df_melt = df4.melt(id_vars='class', value_vars='day')
    df_melt
```

Out[22]:

| | class | variable | value |
|---|---------|----------|-------|
| 0 | cycle | day | 0-Mon |
| 1 | cycle | day | 2-Wed |
| 2 | cycle | day | 5-Sat |
| 3 | pilates | day | 0-Mon |
| 4 | pilates | day | 1-Tue |
| 5 | pilates | day | 4-Fri |