Lesson 5

We will be taking a brief look at the ***stack*** and ***unstack*** functions.

In [1]:
```
# Import libraries
import pandas as pd
import sys
```

In [2]:
```
print 'Python version ' + sys.version
print 'Pandas version: ' + pd.__version__
```

```
Python version 2.7.5 |Anaconda 2.1.0 (64-bit)| (default, Jul  1 2013, 1
Pandas version: 0.15.2
```

In [3]:
```
# Our small data set
d = {'one':[1,1],'two':[2,2]}
i = ['a','b']

# Create dataframe
df = pd.DataFrame(data = d, index = i)
df
```

Out[3]:

	one	two
a	1	2
b	1	2

In [4]:
```
df.index
```

Out[4]:
```
Index([u'a', u'b'], dtype='object')
```

In [5]:
```
# Bring the columns and place them in the index
stack = df.stack()
stack
```

Out[5]:
```
a  one    1
   two    2
b  one    1
   two    2
dtype: int64
```

In [6]:
```
# The index now includes the column names
stack.index
```

Out[6]:
```
MultiIndex(levels=[[u'a', u'b'], [u'one', u'two']],
           labels=[[0, 0, 1, 1], [0, 1, 0, 1]])
```

In [7]:
```
unstack = df.unstack()
unstack
```

Out[7]:
```
one  a    1
     b    1
two  a    2
     b    2
dtype: int64
```

In [8]:
```
unstack.index
```

Out[8]:
```
MultiIndex(levels=[[u'one', u'two'], [u'a', u'b']],
           labels=[[0, 0, 1, 1], [0, 1, 0, 1]])
```

We can also flip the column names with the index using the ***T*** (transpose) function.

In [9]:
```
transpose = df.T
transpose
```

Out[9]:

	a	b
one	1	1
two	2	2

In [10]:
```
transpose.index
```

Out[10]:
```
Index([u'one', u'two'], dtype='object')
```

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