Converting Monthly Data to Quarterly Data

I have monthly data. I want to convert it to "periods" of 3 months where q1 starts in January. So in the example below, the first 3 month aggregation would translate into start of q2 (desired format: 1996q2). And the data value that results from mushing together 3 monthly values is a mean (average) of 3 columns. Conceptually, not complicated. Does anyone know how to do it in one swoop? Potentially, I could do a lot of hard work through looping and just hardcode the hell out of it, but I am new to pandas and looking for something more clever than brute force.

1996-04 1996-05 1996-06 1996-07 .....

25 19 37 40

So I am looking for:

1996q2 1996q3 1996q4 1997q1 1997q2 .....

avg avg avg ... ...

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asked Nov 8 '16 at 22:02

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1 Answer

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you can use [pd.PeriodIndex(..., freq='Q')](http://pandas.pydata.org/pandas-docs/stable/timeseries.html" \l "periodindex-and-period-range) in conjunction with [groupby(..., axis=1)](http://pandas.pydata.org/pandas-docs/stable/generated/pandas.DataFrame.groupby.html):

In [63]: df

Out[63]:

1996-04 1996-05 2000-07 2000-08 2010-10 2010-11 2010-12

0 1 2 3 4 1 1 1

1 25 19 37 40 1 2 3

2 10 20 30 40 4 4 5

In [64]: df.groupby(pd.PeriodIndex(df.columns, freq='Q'), axis=1).mean()

Out[64]:

1996Q2 2000Q3 2010Q4

0 1.5 3.5 1.000000

1 22.0 38.5 2.000000

2 15.0 35.0 4.333333

**UPDATE**: to get columns in a resulting DF as strings intead of period dtype:

In [66]: res = (df.groupby(pd.PeriodIndex(df.columns, freq='Q'), axis=1)

.mean()

.rename(columns=lambda c: str(c).lower()))

In [67]: res

Out[67]:

1996q2 2000q3 2010q4

0 1.5 3.5 1.000000

1 22.0 38.5 2.000000

2 15.0 35.0 4.333333

In [68]: res.columns.dtype

Out[68]: dtype('O')

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