communicate_quiz

October 17, 2017

In [1]:
```
# imports and load data
import pandas as pd
% matplotlib inline

df = pd.read_csv('store_data.csv')

df.head()
```

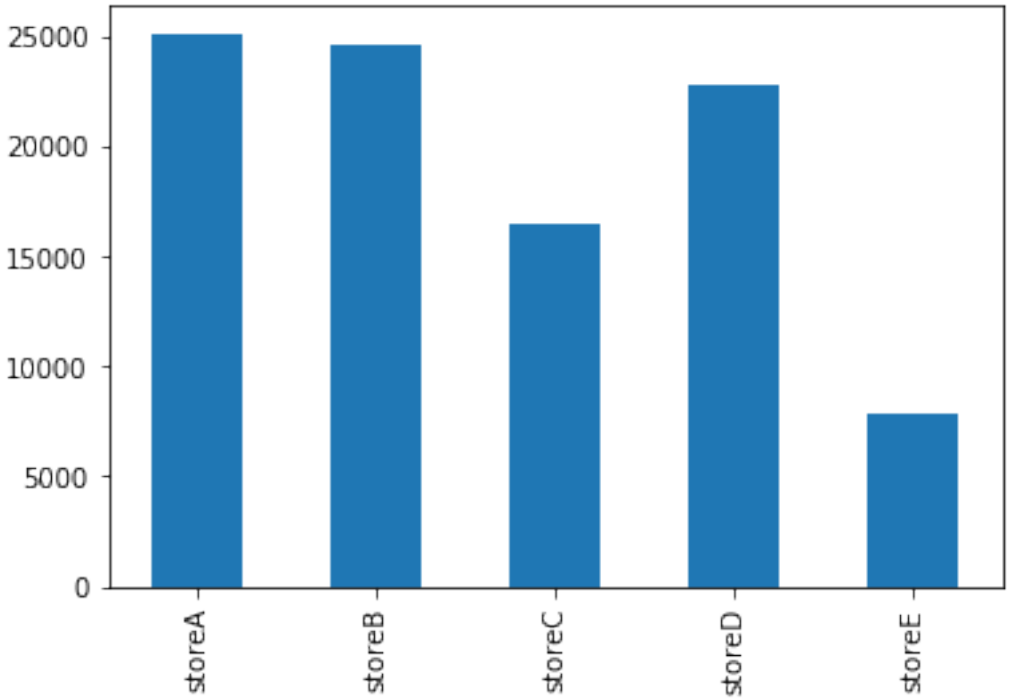
Out[1]:

	week	storeA	storeB	storeC	storeD	storeE
0	2014-05-04	2643	8257	3893	6231	1294
1	2014-05-11	6444	5736	5634	7092	2907
2	2014-05-18	9646	2552	4253	5447	4736
3	2014-05-25	5960	10740	8264	6063	949
4	2014-06-01	7412	7374	3208	3985	3023

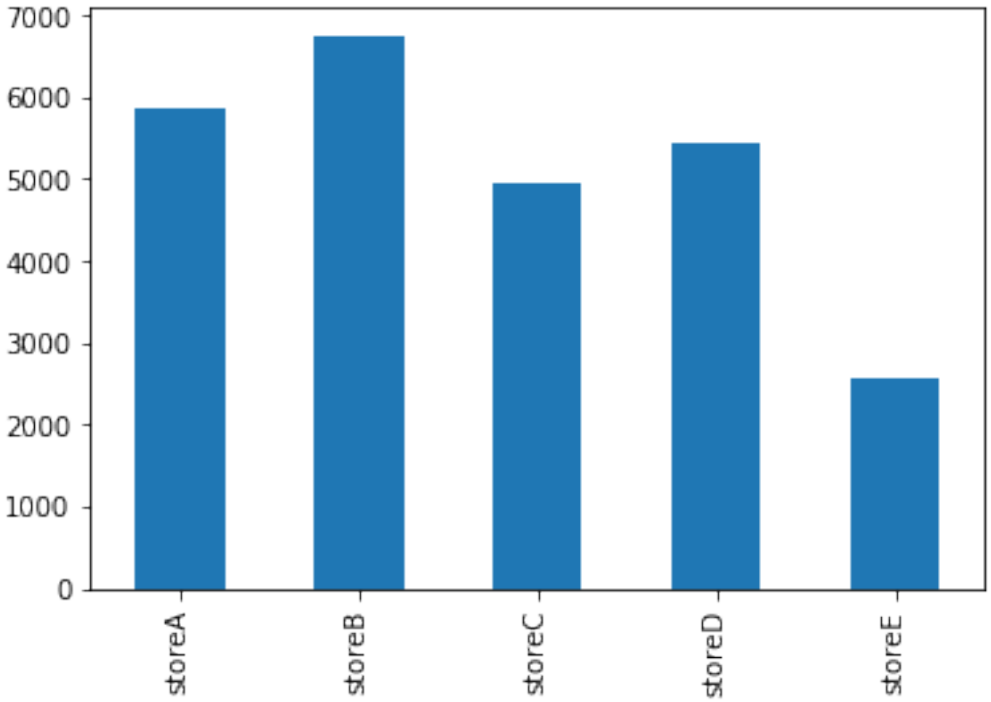
In [2]:
```
# explore data
df.shape
```

Out[2]: (200, 6)

In [8]:
```
# sales for the last month
# Which store has the highest total sales for the last month?
# c.f. https://stackoverflow.com/questions/32105817/plot-entire-row-on-pandas/32105953#3
from datetime import datetime, timedelta
max_week = max(df["week"])

d = datetime.strptime(max_week, '%Y-%m-%d')
dstart = d - timedelta(weeks=4)
start_month_of_max_week = dstart.strftime('%Y-%m-%d')

df_last_mo = df[(df['week'] > start_month_of_max_week) & (df['week'] <= max_week)]
series_last_mo_summed = df_last_mo.loc[:,'storeA':'storeE'].sum()
series_last_mo_summed.plot(kind='bar');
```




```
In [10]: # average sales
         # Which store makes the most sales on average?
         series_each_store_summed = df.loc[:,'storeA':'storeE'].mean()
         series_each_store_summed.plot(kind='bar');
```




```
In [11]: # sales for the week of March 13th, 2016
         # Which store sells the most during the week of March 13th, 2016?
         df_target_week = df[(df['week'] == '2016-03-13')]
         df_target_week
```

Out[11]:

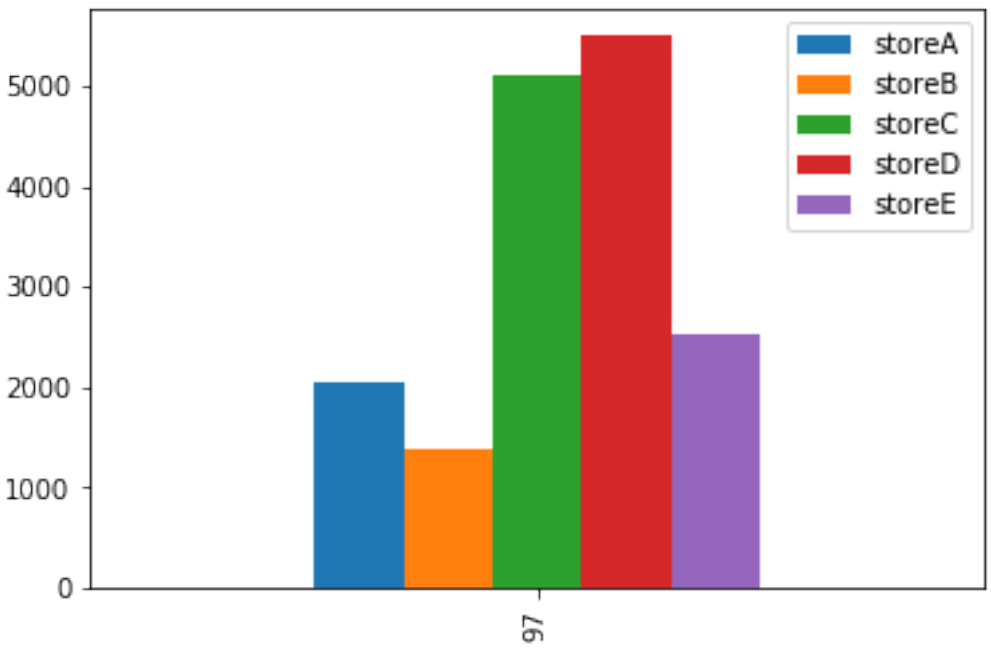
	week	storeA	storeB	storeC	storeD	storeE
97	2016-03-13	2054	1390	5112	5513	2536

```
In [13]: df_target_week_stores = df_target_week.loc[:,'storeA':'storeE']
         df_target_week_stores
```

Out[13]:

	storeA	storeB	storeC	storeD	storeE
97	2054	1390	5112	5513	2536

```
In [14]: # plot default bar, but x-axis shows index :-(
         df_target_week_stores.plot(kind='bar');
```

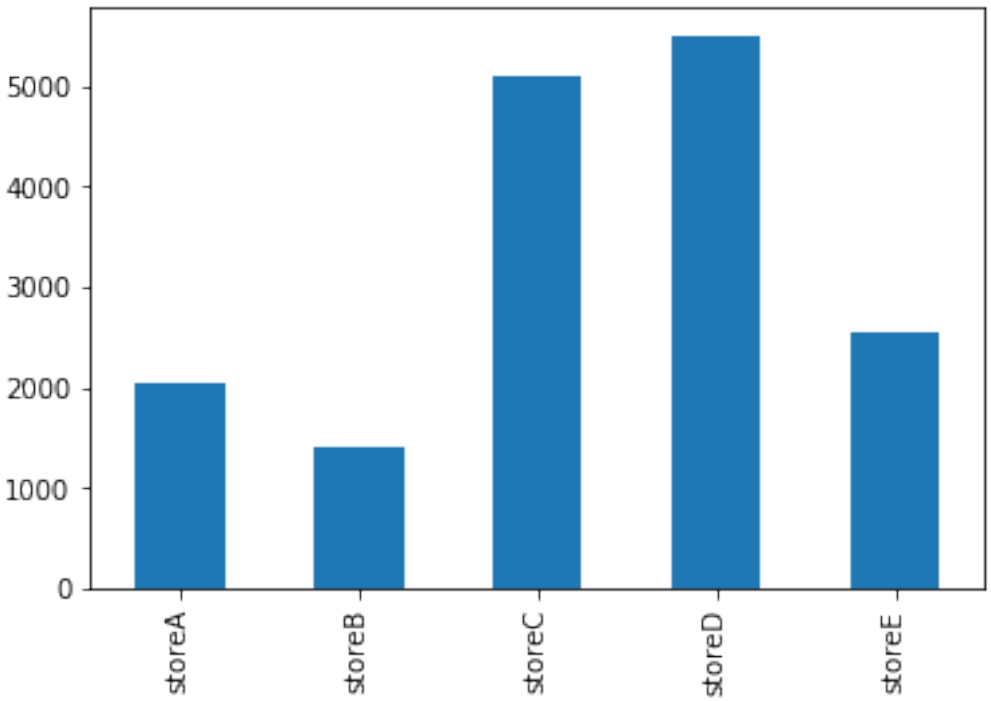



```
In [38]: # playing around w/ selection from that df...

         # this is a single row df
         print(df_target_week_stores)

         # these all produce a series from that row
         df_target_week_stores.loc[97]
         df_target_week_stores.iloc[0]
         df_target_week_stores.squeeze()

         # this is the same df again
         #df_target_week_stores.loc[:]

         # checking out rows/columns
         print('\nrow labels: {}'.format(df_target_week_stores.index))
         print('\ncolumn labels: {}'.format(df_target_week_stores.columns))
```

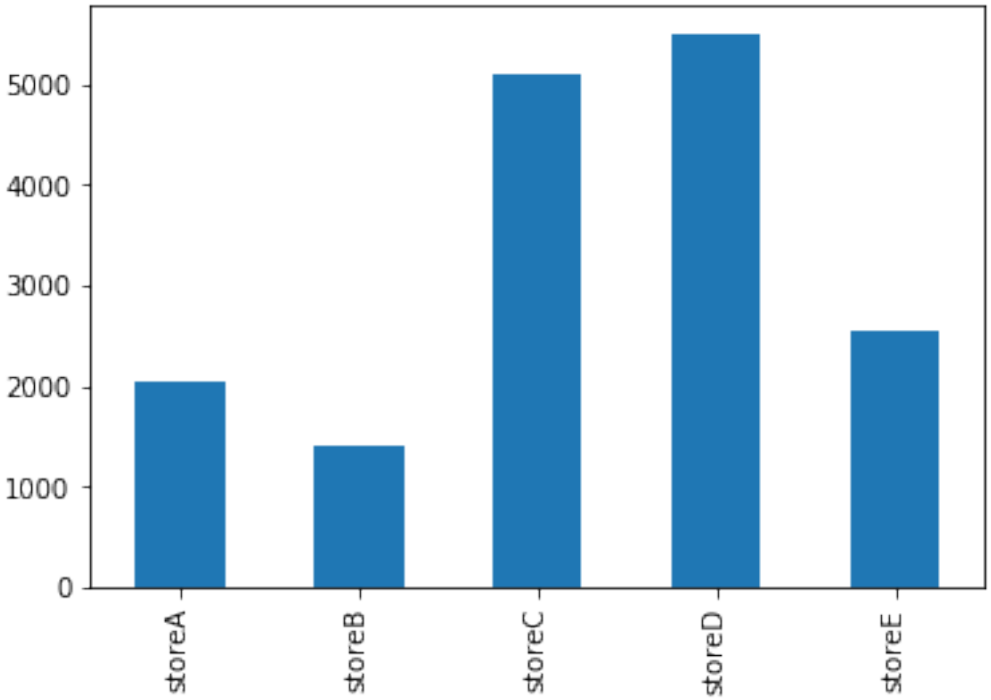
```
    storeA  storeB  storeC  storeD  storeE
97    2054    1390    5112    5513    2536

row labels: Int64Index([97], dtype='int64')

column labels: Index(['storeA', 'storeB', 'storeC', 'storeD', 'storeE'], dtype='object')
```

```
In [15]: # ok can convert it to a series and plot that
```

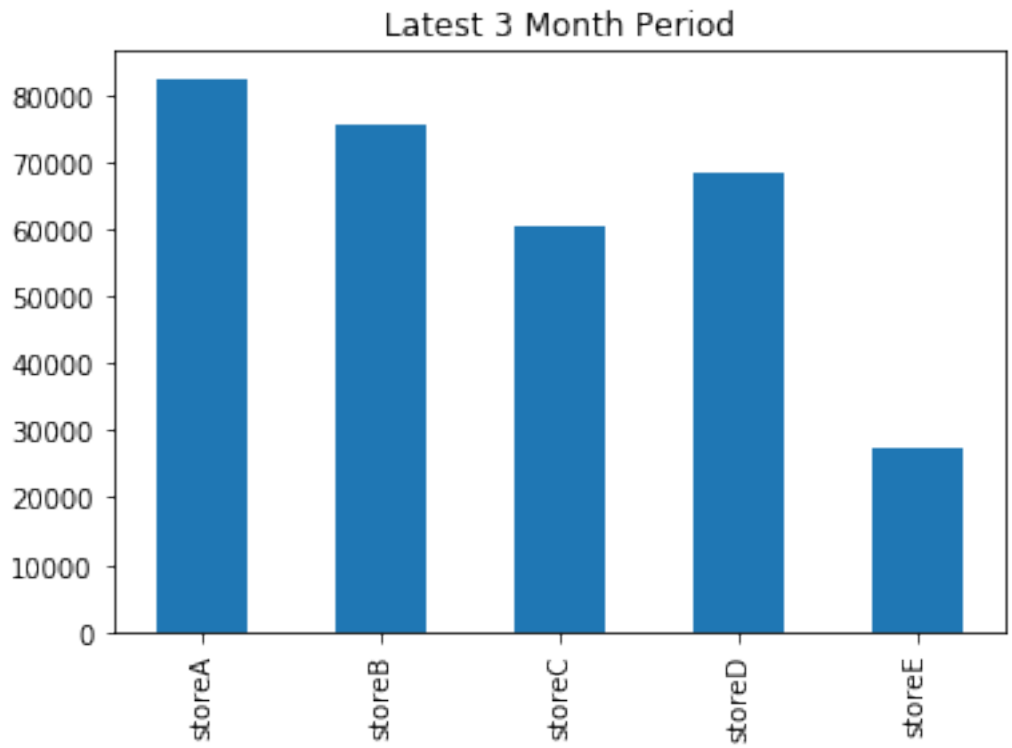
```
series_target_week_stores_series = df_target_week_stores.squeeze()
series_target_week_stores_series.plot(kind='bar');
```



In [43]:
```
# try to exchange rows/columns and plot that
df_target_week_stores.T.plot(kind='bar', legend=None);
# w00t!
```



In [61]:
```
# sales for the lastest 3-month periods
# Which store has the most sales in the latest 3-month period?
dstart_3mo = d - timedelta(weeks=3*4)
dstart_3mo_week = dstart_3mo.strftime('%Y-%m-%d')
#print(dstart_3mo_week)

df_3mo = df[(df['week'] > dstart_3mo_week) & (df['week'] <= max_week)]
#print(df_3mo.head())
df_3mo_summed = df_3mo.loc[:,'storeA':'storeE'].sum()
#print(df_3mo_summed)
df_3mo_summed.plot(kind='bar', title='Latest 3 Month Period');
```


Latest 3 Month Period
80000
70000
60000
50000
40000
30000
20000
10000
0
storeA
storeB
storeC
storeD
storeE

In [ ]: