Citi Bike Location Data October 2016

In [1]:

```
import pandas as pd  import numpy as np  import os
import glob
import xlrd  pd.options.display.max_columns = 40   import warnings
warnings.filterwarnings('ignore')   import matplotlib.pyplot as plt
import seaborn as sns; sns.set(style="white", color_codes= True)
```

Initial Import and Cleanup of Data from Citi Bike

In [2]:

```
df1 =
pd.read_csv("https://s3.amazonaws.com/tripdata/201610-citibike-tripdata.zip"
)
```

Out[2]:

```
df1.head()
```

	Trip Duration	Start Time	Stop Time	Start Station ID	Start Station Name	Start Station Latitude	St a o Statid Longitu
0	328	2016-10-01 00:00:07	2016-10-01 00:05:35	471	Grand St & Havemeyer St	40.712868	8 -73.9569
1	398	2016-10-01 00:00:11	2016-10-01 00:06:49	3147	E 85 St & 3 Ave	40.778012	7 -73.9540
2	430	2016-10-01 00:00:14	2016-10-01 00:07:25	345	W 13 St & 6 Ave	40.736494	4 -73.9970
3	351	2016-10-01 00:00:21	2016-10-01 00:06:12	3307	West End Ave & W 94 St	40.794165	2 -73.9741
4	2693	2016-10-01 00:00:21	2016-10-01 00:45:15	3428	8 Ave & W 16 St	40.740983	0 -74.0017

In [3]:
```
df1.shape
```

Out[3]:
```
(1573872, 15)
```

In [4]:

```
df1.sort_values('Start Time').head()
```

Out[4]:

	Trip Duration	Start Time	Stop Time	Start Station ID	Start Station Name	Start Station Latitude	St a o Statid Longitu
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In [5]:
```
df1['Trip Duration'] = df1['Trip Duration'].astype('float')  df1.dtypes
```

Out[5]:

Trip Duration	float64
Start Time	object
Stop Time	object
Start Station ID	int64
Start Station Name	object
Start Station Latitude	float64
Start Station Longitude	float64
End Station ID	int64
End Station Name	object
End Station Latitude	float64
End Station Longitude	float64
Bike ID	int64
User Type	object
Birth Year	float64
Gender	int64
dtype:	object

Data Grouping and Preliminary Analysis

Group and describe the top 20 Starting Stations by Trip Count

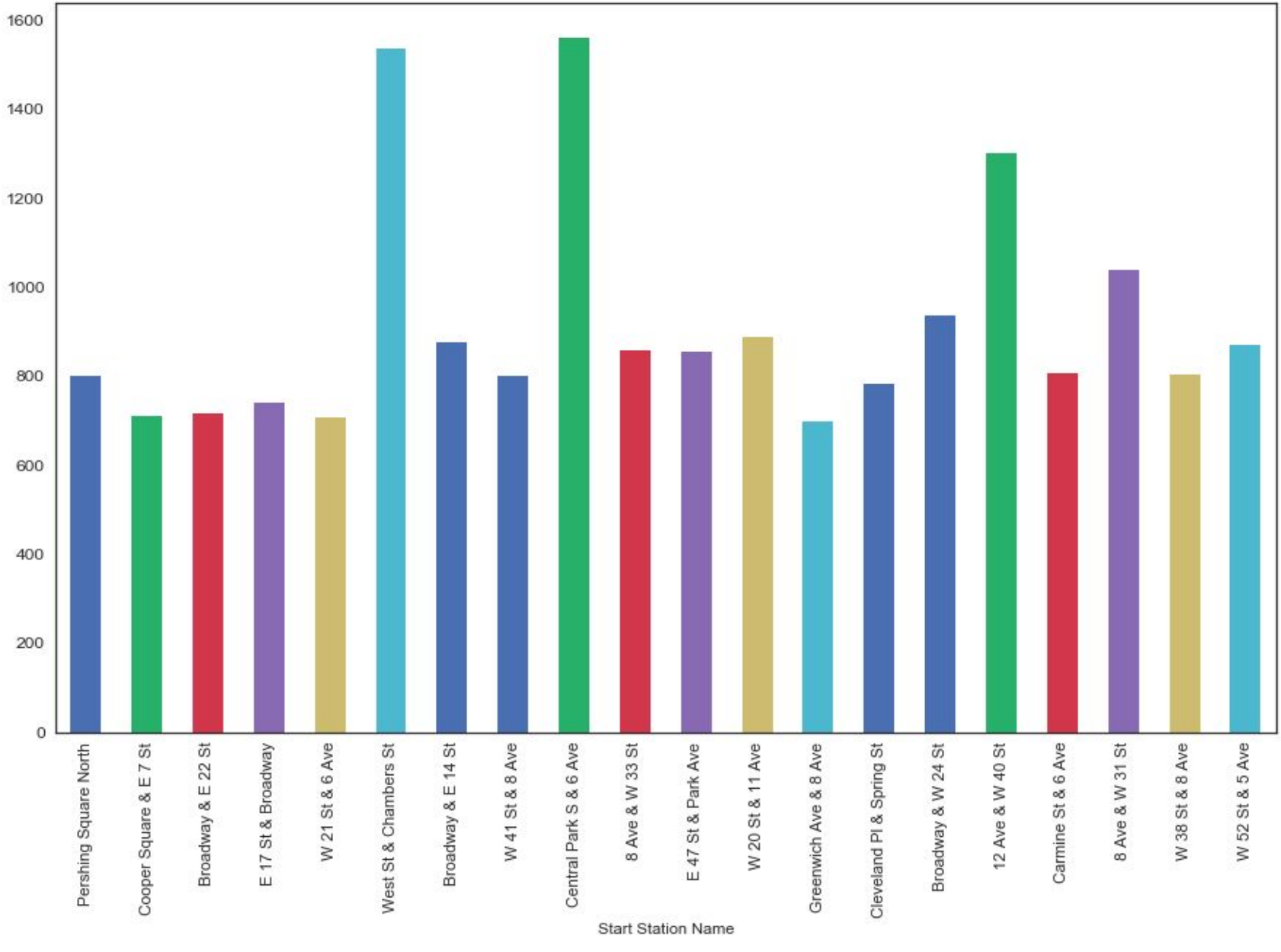
In [6]:

```
df2 = df1.groupby('Start Station Name')['Trip
Duration'].describe().sort_values('c  ount', ascending= False).head(20)
```

Chart showing the mean trip duration for the to 20 locations by total trips

In [7]:
```
df2['mean'].plot(kind="bar", figsize=(15, 10), fontsize=12)
```

Out[7] <matplotlib.axes._subplots.AxesSubplot at



In [8]:

```
df1['Start Time'] = pd.to_datetime(df1['Start Time'])
```

In [9]:

```
df1.index = df1['Start Time']
del df1['Start Time']
```

In [10]:

```
df3 = pd.DataFrame(df1.resample('d').size())
```

In [11]:

```
df3 = df3.rename(columns={0: 'Total Trips'})  df3['Day of Week'] =
df3.index.dayofweek
df3.replace({'Day of Week':{0: 'Mon', 1: 'Tues', 2: 'Wed', 3: 'Thurs', 4: 'Fri',
5
: 'Sat', 6: 'Sun'}})
```

Out[11]:

	Total Trips	Day of Week
Start Time		
2016-10-01	39811	Sat
2016-10-02	41023	Sun
2016-10-03	56384	Mon
2016-10-04	60379	Tues
2016-10-05	65053	Wed
2016-10-06	67585	Thurs
2016-10-07	65896	Fri
2016-10-08	34625	Sat
2016-10-09	21689	Sun
2016-10-10	52255	Mon
2016-10-11	58768	Tues
2016-10-12	57690	Wed
2016-10-13	61217	Thurs
2016-10-14	60566	Fri

In [12]:
```
df3['Total Trips'].plot(figsize=(15, 10), fontsize=12)
```

Out[12]:
```
<matplotlib.axes._subplots.AxesSubplot at
0x1a0e3da588>
```