In [1]:
```
import arcpy
import pandas as pd
import geocoder
```

In [3]:
```
address_df = pd.read_csv(r'C:\Users\dcook13\Documents\GitHub\pratt-savi-810-2018-10\students\dcook\class4\addresses.csv')
```

In [4]:
```
address_df
```

Out[4]:

	Address
0	1600 Pennsylvania Avenue Northwest, Washington...
1	1 Penn Plaza, New York, NY
2	1 West 72nd Street, New York, NY
3	226 St. James Place, Brooklyn, NY
4	1 World Trade Center, New York, NY

In [5]:
```
address_df['Lat'] = ''
address_df['Long'] = '' ## adding new columns
```

In [6]:
```
address_df
```

Out[6]:

	Address	Lat	Long
0	1600 Pennsylvania Avenue Northwest, Washington...		
1	1 Penn Plaza, New York, NY		
2	1 West 72nd Street, New York, NY		
3	226 St. James Place, Brooklyn, NY		
4	1 World Trade Center, New York, NY		

In [10]:
```
# df_test = address_df.set_index('Address')
for index, row in address_df.iterrows():
    # print(index)
    # print(row)
    # print(index,row)
    g = geocoder.arcgis(row['Address'])
    row['Lat'] = g.lat
    row['Long'] = g.lng
```

In [11]:
```
address_df
```

Out[11]:

	Address	Lat	Long
0	1600 Pennsylvania Avenue Northwest, Washington...	38.8977	-77.0365
1	1 Penn Plaza, New York, NY	40.7517	-73.9925
2	1 West 72nd Street, New York, NY	40.7763	-73.976
3	226 St. James Place, Brooklyn, NY	40.6836	-73.9639
4	1 World Trade Center, New York, NY	40.7112	-74.0144

In [13]:
```
address_df.to_csv(r'C:\Users\dcook13\Documents\GitHub\pratt-savi-810-2018-10\students\dcook\class4\addresses_geocoded.csv')
```

In [14]:
```
arcpy.MakeXYEventLayer_management(
    r'C:\Users\dcook13\Documents\GitHub\pratt-savi-810-2018-10\students\dcook
\class4\addresses_geocoded.csv',
    'Long',
    'Lat',
    'latlong_plot'
    )
## might result in errors, but 'latlong_plot' will still generate successfully
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\ESRI\conda\envs\arcgispro-py3-clone1\lib\site-packages\pandas
\core\generic.py in __nonzero__(self)
   1574         raise ValueError("The truth value of a {0} is ambiguous. "
   1575                          "Use a.empty, a.bool(), a.item(), a.any() or
 a.all()."
-> 1576                          .format(self.__class__.__name__))
   1577
   1578     __bool__ = __nonzero__

ValueError: The truth value of a DataFrame is ambiguous. Use a.empty, a.bool
(), a.item(), a.any() or a.all().

---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\ESRI\conda\envs\arcgispro-py3-clone1\lib\site-packages\pandas
\core\generic.py in __nonzero__(self)
   1574         raise ValueError("The truth value of a {0} is ambiguous. "
   1575                          "Use a.empty, a.bool(), a.item(), a.any() or
 a.all()."
-> 1576                          .format(self.__class__.__name__))
   1577
   1578     __bool__ = __nonzero__

ValueError: The truth value of a DataFrame is ambiguous. Use a.empty, a.bool
(), a.item(), a.any() or a.all().

---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
~\AppData\Local\ESRI\conda\envs\arcgispro-py3-clone1\lib\site-packages\pandas
\core\generic.py in __nonzero__(self)
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   1575                          "Use a.empty, a.bool(), a.item(), a.any() or
 a.all()."
-> 1576                          .format(self.__class__.__name__))
   1577
   1578     __bool__ = __nonzero__

ValueError: The truth value of a DataFrame is ambiguous. Use a.empty, a.bool
(), a.item(), a.any() or a.all().
```

Out[14]: <Result 'latlong_plot'>

In [16]:
```
arcpy.CopyFeatures_management(
    'latlong_plot',
    r'C:\Users\dcook13\Documents\GitHub\pratt-savi-810-2018-10\students\dcook
\class4\plot.shp',
    )
```

Out[16]:
```
<Result 'C:\\Users\\dcook13\\Documents\\GitHub\\pratt-savi-810-2018-10\\stude
nts\\dcook\\class4\\plot.shp'>
```