Mapping King County Homes by Budget With Arcgis

In [1]:
```
import arcgis
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

In [2]:
```
from arcgis import *
from arcgis.features import GeoAccessor,GeoSeriesAccessor
from arcgis.mapping import WebMap
from IPython.display import display
```

After we load up our libraries, the first step is to import our data. We can also drop columns that we won't be including.

In [3]:
```
df = pd.read_csv(r'~/Documents/Flatiron/regression_project/data/kc_data.csv')
df = df.drop(['id','date', 'waterfront', 'view','condition', 'grade', 'sqft_a
              'sqft_basement', 'yr_built', 'yr_renovated', 'sqft_living15','s
```

Next, we split our data up into our budgets. In total there are five maps, our four budgets, and one you can set a maximum budet for yourself.

In [4]:
```
lowtier = df[(df.price >= 210000) & (df.price <= 348000) ].copy()
midtier = df[(df.price >= 348000) & (df.price <= 480000) ].copy()
uppermidtier = df[(df.price >= 480000) & (df.price <= 640000) ].copy()
hightier = df[(df.price >= 640000) & (df.price <= 900000)].copy()
```

In [5]:
```
# Log into GIS
gis = GIS("http://www.arcgis.com/", "shadowsword_0","Acidblade1")
```

Then, we find and choose what additional features we would like to get data from & plot on our map

In [6]:
```
def gis_content():
    item = gis.content.get('ff9e4774ee8641f48cccac97dca753db#data')
    food = item.layers[0]
    item = gis.content.get('3f263039314d44cc93384fe1f4229796#data')
    flayer = item.layers[0]
    public = flayer.query(where = "ZIPCODE > 0")
    item = gis.content.get('d4a439bcf5d54e5f80cde3285d0cf3cd')
    dataset = item.layers[0]
    item = gis.content.get('175728366bb24060904323678963c60e')
    flayer = item.layers[0]
    private = flayer.query()
    return (private,public,food)
```

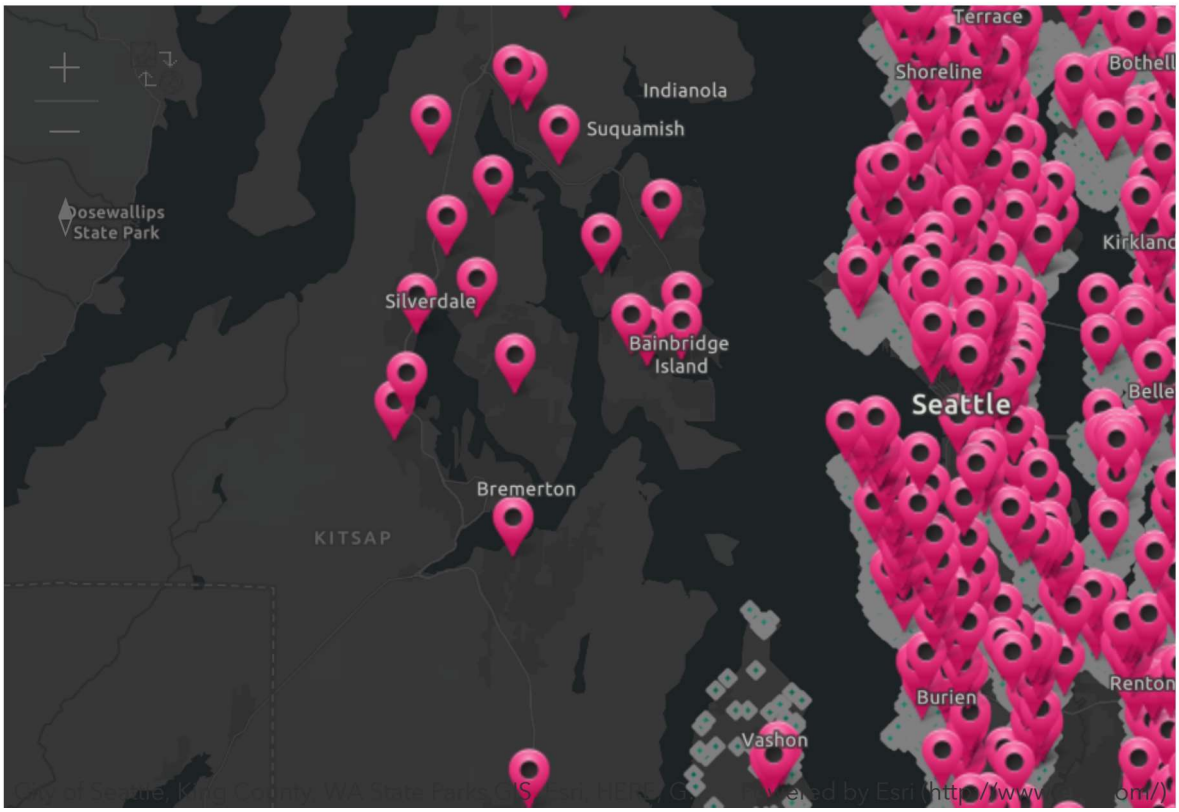
Now, let's do some mapping!

In [7]:

```
def mapping(budget_df):
    """Pass in a dataframe to get a map of King County where all of the homes
    should you want to see schools, please answer yes on input."""
    #bring in our features
    private,public,food = gis_content()
    #set up our map
    stc_map = gis.map('Seattle, WA')
    #choose map base & bring in our king county data
    stc_map.basemap = 'dark-gray-vector'
    data_sdf = pd.DataFrame.spatial.from_xy(budget_df, 'long','lat')
    #set our markers and other settings
    data_sdf.spatial.plot(map_widget=stc_map, renderer_type = "c", marker_siz
                          symbol_type = 'simple', symbol_style='d',
                          title='Pricing of houses',
                          col='price',
                          cmap ='summer',
                          renderer = 'ClassedSizeRenderer',
                          alpha=0.7)
    #add food and grocery stores
    stc_map.add_layer(food)
    #set up input question & add schools layers to dataframe if chosen
    schools = input('Are you interested in schools? ')
    if (schools == 'Yes') or (schools == 'yes') and (budget_df is not None):
        interest = input('Private school, Public schools, or Both? ')
        if (interest =='Private') or (interest =='private'):
            stc_map.add_layer(private)
        elif(interest =='Public') or (interest == 'public'):
            stc_map.add_layer(public)
        elif(interest =='Both') or (interest == 'both'):
            stc_map.add_layer(private)
            stc_map.add_layer(public)
        else:
            None
    elif (schools == 'No') or (schools == 'no') and (budget_df is not None):
        None
    else:
        print('Please enter yes or no.')
    display(stc_map)
```

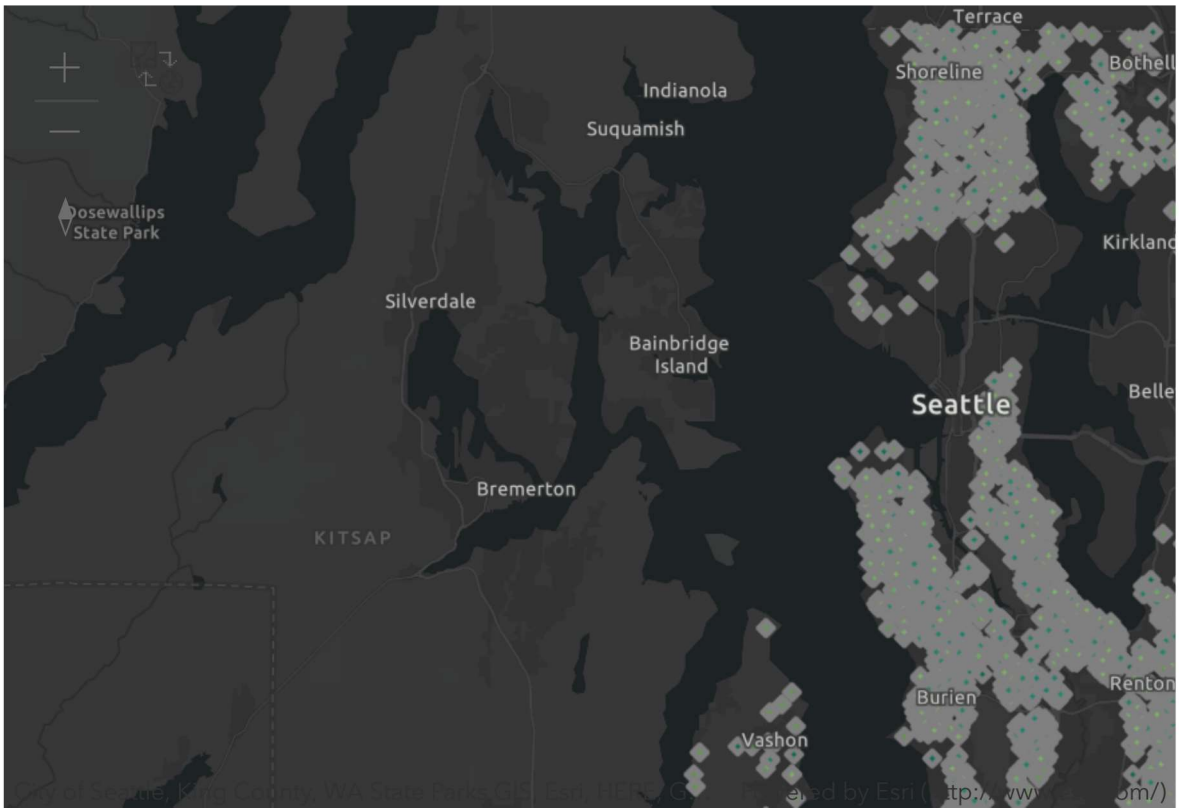
In [8]:
```
mapping(df)
```

```
Are you interested in schools? yes
Private school, Public schools, or Both? both
```



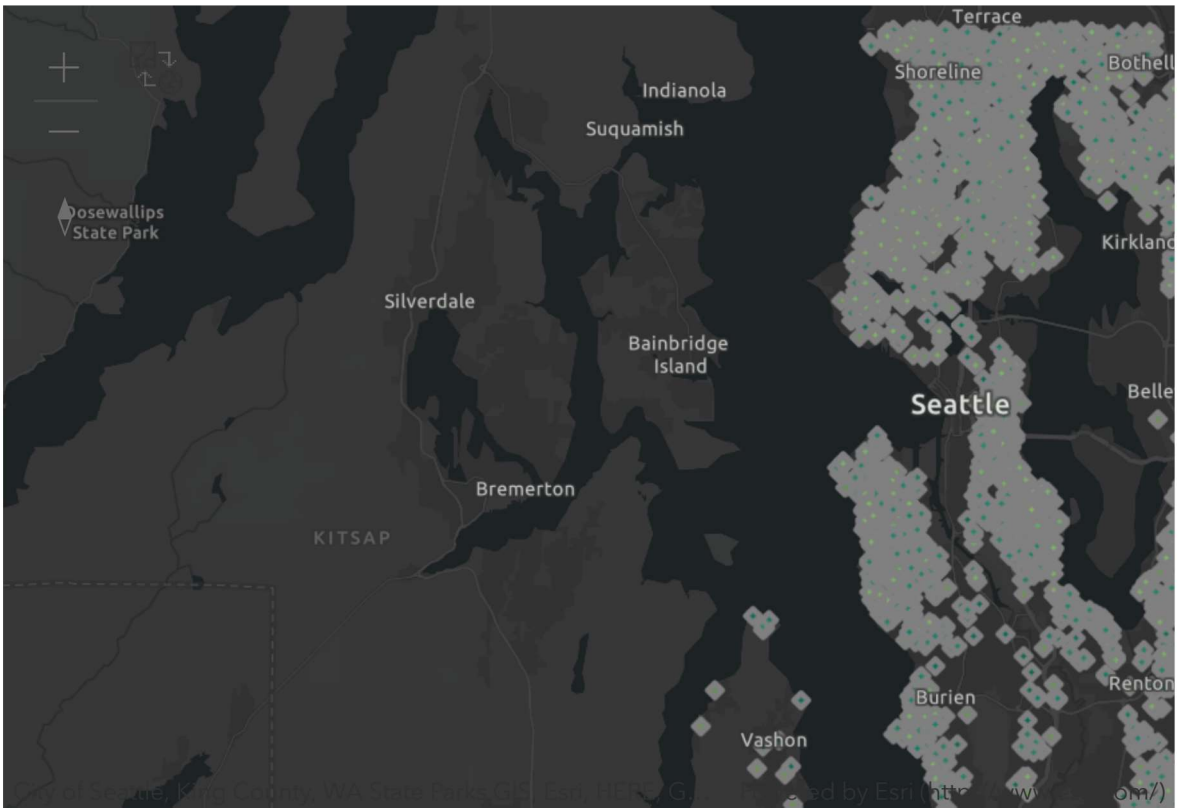
In [9]:
```
mapping(lowtier)
```

```
Are you interested in schools? no
```



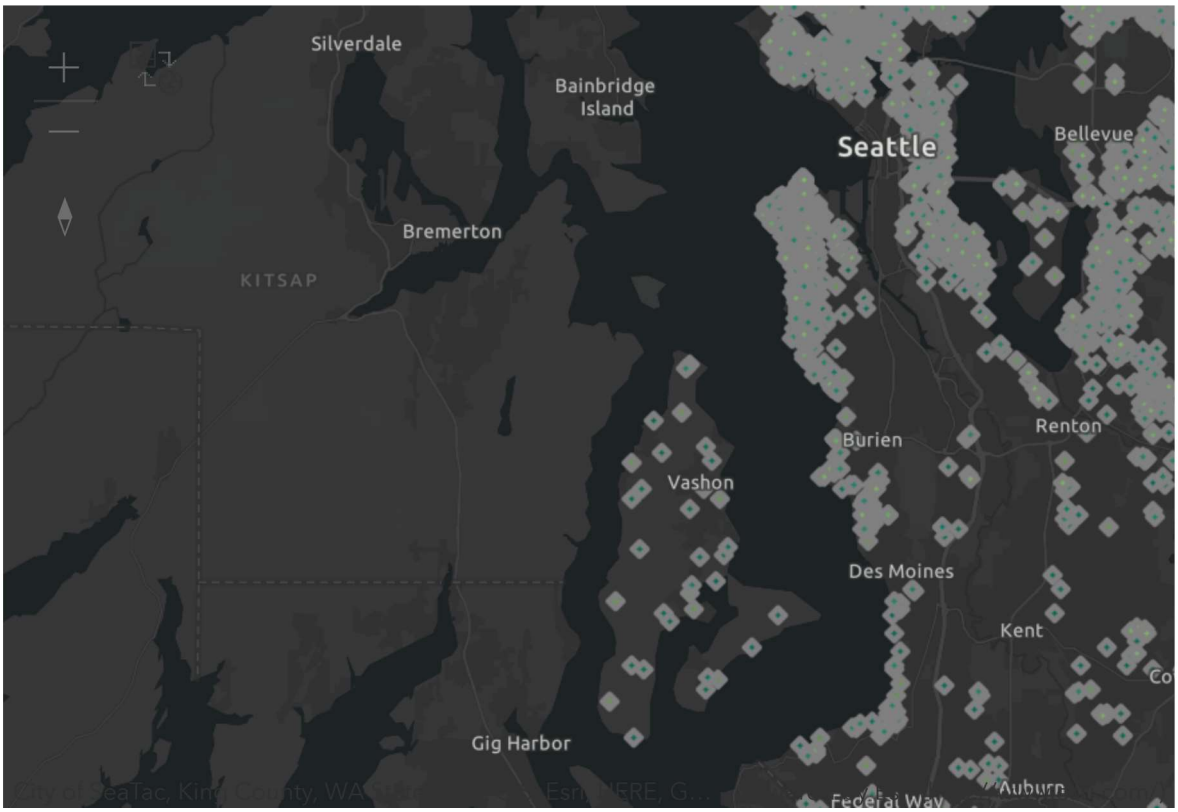
In [10]:
```
mapping(midtier)
```

```
Are you interested in schools? no
```



In [11]:
```
mapping(uppermidtier)
```

```
Are you interested in schools? no
```



In [12]:
```
mapping(hightier)
```

```
Are you interested in schools? no
```