Housing Rental Analysis for San Francisco

In this challenge, your job is to use your data visualization skills, including aggregation, interactive visualizations, and geospatial analysis, to find properties in the San Francisco market that are viable investment opportunities.

Instructions

Use the `san_francisco_housing.ipynb` notebook to visualize and analyze the real-estate data.

Note that this assignment requires you to create a visualization by using hvPlot and GeoViews. Additionally, you need to read the `sfo_neighborhoods_census_data.csv` file from the `Resources` folder into the notebook and create the DataFrame that you'll use in the analysis.

The main task in this Challenge is to visualize and analyze the real-estate data in your Jupyter notebook. Use the `san_francisco_housing.ipynb` notebook to complete the following tasks:

- Calculate and plot the housing units per year.
- Calculate and plot the average prices per square foot.
- Compare the average prices by neighborhood.
- Build an interactive neighborhood map.
- Compose your data story.

Calculate and Plot the Housing Units per Year

For this part of the assignment, use numerical and visual aggregation to calculate the number of housing units per year, and then visualize the results as a bar chart. To do so, complete the following steps:

1. Use the `groupby` function to group the data by year. Aggregate the results by the `mean` of the groups.

2. Use the `hvplot` function to plot the `housing_units_by_year` DataFrame as a bar chart. Make the x-axis represent the `year` and the y-axis represent the `housing_units`.

3. Style and format the line plot to ensure a professionally styled visualization.

4. Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of the resulting bar chart.

1. Answer the following question:

   - What’s the overall trend in housing units over the period that you’re analyzing?

Calculate and Plot the Average Sale Prices per Square Foot

For this part of the assignment, use numerical and visual aggregation to calculate the average prices per square foot, and then visualize the results as a bar chart. To do so, complete the following steps:

1. Group the data by year, and then average the results. What’s the lowest gross rent that’s reported for the years that the DataFrame includes?

2. Create a new DataFrame named `prices_square_foot_by_year` by filtering out the “housing_units” column. The new DataFrame should include the averages per year for only the sale price per square foot and the gross rent.

3. Use hvPlot to plot the `prices_square_foot_by_year` DataFrame as a line plot.

   > **Hint** This single plot will include lines for both `sale_price_sqr_foot` and `gross_rent`.

4. Style and format the line plot to ensure a professionally styled visualization.

5. Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of the resulting plot.

1. Use both the `prices_square_foot_by_year` DataFrame and interactive plots to answer the following questions:

   - Did any year experience a drop in the average sale price per square foot compared to the previous year?

- If so, did the gross rent increase or decrease during that year?

Compare the Average Sale Prices by Neighborhood

For this part of the assignment, use interactive visualizations and widgets to explore the average sale price per square foot by neighborhood. To do so, complete the following steps:

1. Create a new DataFrame that groups the original DataFrame by year and neighborhood. Aggregate the results by the `mean` of the groups.

2. Filter out the "housing_units" column to create a DataFrame that includes only the `sale_price_sqr_foot` and `gross_rent` averages per year.

3. Create an interactive line plot with hvPlot that visualizes both `sale_price_sqr_foot` and `gross_rent`. Set the x-axis parameter to the year (`x="year"`). Use the `groupby` parameter to create an interactive widget for `neighborhood`.

4. Style and format the line plot to ensure a professionally styled visualization.

5. Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of the resulting plot.

1. Use the interactive visualization to answer the following question:

   - For the Anza Vista neighborhood, is the average sale price per square foot for 2016 more or less than the price that's listed for 2012?

Build an Interactive Neighborhood Map

For this part of the assignment, explore the geospatial relationships in the data by using interactive visualizations with hvPlot and GeoViews. To build your map, use the `sfo_data_df` DataFrame (created during the initial import), which includes the neighborhood location data with the average prices. To do all this, complete the following steps:

1. Read the `neighborhood_coordinates.csv` file from the `Resources` folder into the notebook, and create a DataFrame named `neighborhood_locations_df`. Be sure to set the `index_col` of the DataFrame as "Neighborhood".

2. Using the original `sfo_data_df` Dataframe, create a DataFrame named `all_neighborhood_info_df` that groups the data by neighborhood. Aggregate the results by the `mean` of the group.

3. Review the two code cells that concatenate the `neighborhood_locations_df` DataFrame with the `all_neighborhood_info_df` DataFrame. Note that the first cell uses the Pandas concat function to create a DataFrame named `all_neighborhoods_df`. The second cell cleans the data and sets the “Neighborhood” column. Be sure to run these cells to create the `all_neighborhoods_df` DataFrame, which you’ll need to create the geospatial visualization.

4. Using hvPlot with GeoViews enabled, create a `points` plot for the `all_neighborhoods_df` DataFrame. Be sure to do the following:

    - Set the `geo` parameter to True.
    - Set the `size` parameter to “sale_price_sqr_foot”.
    - Set the `color` parameter to “gross_rent”.
    - Set the `frame_width` parameter to 700.
    - Set the `frame_height` parameter to 500.
    - Include a descriptive title.

Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of a scatter plot created with hvPlot and GeoViews.

1. Use the interactive map to answer the following question:

    - Which neighborhood has the highest gross rent, and which has the highest sale price per square foot?

Compose Your Data Story

Based on the visualizations that you created, answer the following questions:

- How does the trend in rental income growth compare to the trend in sales prices? Does this same trend hold true for all the neighborhoods across San Francisco?

- What insights can you share with your company about the potential one-click, buy-and-rent strategy that they're pursuing? Do neighborhoods exist that you would suggest for investment, and why?

In [1]:

```python
# Import the required libraries and dependencies
import pandas as pd
import hvplot.pandas
from pathlib import Path
```

Import the data

In [2]:

```python
# Using the read_csv function and Path module, create a DataFrame
# by importing the sfo_neighborhoods_census_data.csv file from the Resources folder
sfo_data_df = pd.read_csv(Path("Resources/sfo_neighborhoods_census_data.csv")).drop_duplicates()

# Review the first and last five rows of the DataFrame
display(sfo_data_df.head())
display(sfo_data_df.tail())
```

	year	neighborhood	sale_price_sqr_foot	housing_units	gross_rent
0	2010	Alamo Square	291.182945	372560	1239
1	2010	Anza Vista	267.932583	372560	1239
2	2010	Bayview	170.098665	372560	1239
3	2010	Buena Vista Park	347.394919	372560	1239
4	2010	Central Richmond	319.027623	372560	1239

	year	neighborhood	sale_price_sqr_foot	housing_units	gross_rent
392	2016	Telegraph Hill	903.049771	384242	4390
393	2016	Twin Peaks	970.085470	384242	4390
394	2016	Van Ness/ Civic Center	552.602567	384242	4390
395	2016	Visitacion Valley	328.319007	384242	4390
396	2016	Westwood Park	631.195426	384242	4390

Calculate and Plot the Housing Units per Year

For this part of the assignment, use numerical and visual aggregation to calculate the number of housing units per year, and then visualize the results as a bar chart. To do so, complete the following steps:

1. Use the `groupby` function to group the data by year. Aggregate the results by the `mean` of the groups.

2. Use the `hvplot` function to plot the `housing_units_by_year` DataFrame as a bar chart. Make the x-axis represent the `year` and the y-axis represent the `housing_units`.

3. Style and format the line plot to ensure a professionally styled visualization.

4. Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of the resulting bar chart.

1. Answer the following question:

    - What's the overall trend in housing units over the period that you're analyzing?

Step 1: Use the `groupby` function to group the data by year. Aggregate the results by the `mean` of the groups.

In [3]:

```python
# Create a numerical aggregation that groups the data by the year and then averages the results.
housing_units_by_year = sfo_data_df.groupby('year')['housing_units'].mean()

# Review the DataFrame
housing_units_by_year
```

Out[3]:

```
year
2010    372560.0
2011    374507.0
2012    376454.0
2013    378401.0
2014    380348.0
2015    382295.0
2016    384242.0
Name: housing_units, dtype: float64
```

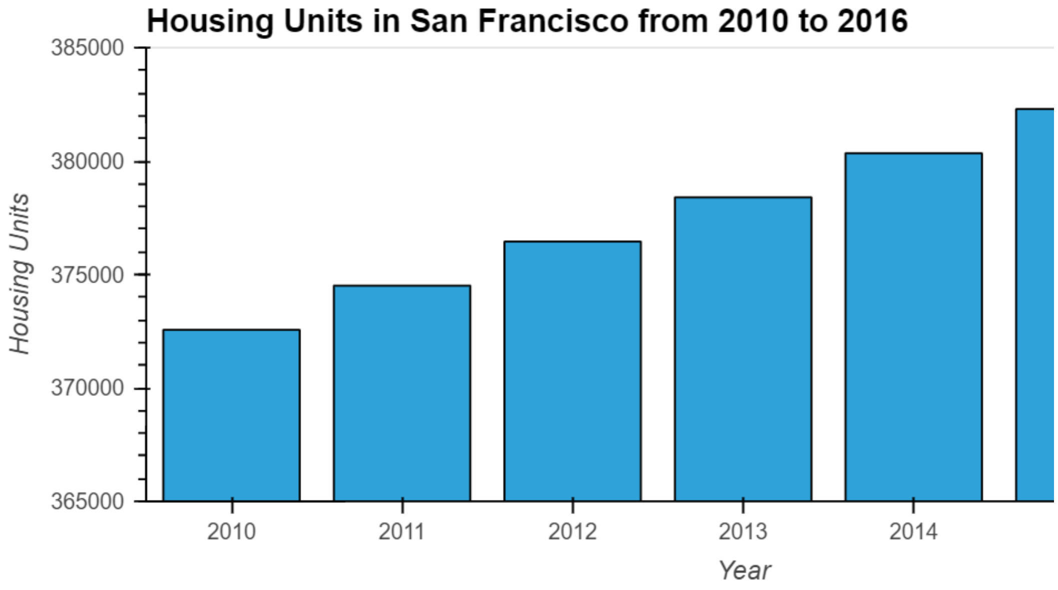
Step 2: Use the `hvplot` function to plot the `housing_units_by_year` DataFrame as a bar chart. Make the x-axis represent the `year` and the y-axis represent the `housing_units`.

Step 3: Style and format the line plot to ensure a professionally styled visualization.

In [4]:

```
# Create a visual aggregation explore the housing units by year
housing_units_by_year.hvplot.bar(
    x="year",
    y="housing_units",
    title='Housing Units in San Francisco from 2010 to 2016',
    xlabel="Year",
    ylabel="Housing Units"
).opts(
    yformatter='%.0f',
    ylim=(365000,385000)
)
```

Out[4]:



Step 5: Answer the following question:

Question: What is the overall trend in housing_units over the period being analyzed?

Answer: Positive trends. Average housing units increased each year.

Calculate and Plot the Average Sale Prices per Square Foot

For this part of the assignment, use numerical and visual aggregation to calculate the average prices per square foot, and then visualize the results as a bar chart. To do so, complete the following steps:

1. Group the data by year, and then average the results. What's the lowest gross rent that's reported for the years that the DataFrame includes?

2. Create a new DataFrame named `prices_square_foot_by_year` by filtering out the "housing_units" column. The new DataFrame should include the averages per year for only the sale price per square foot and the gross rent.

3. Use hvPlot to plot the `prices_square_foot_by_year` DataFrame as a line plot.

    > **Hint** This single plot will include lines for both `sale_price_sqr_foot` and `gross_rent`.

4. Style and format the line plot to ensure a professionally styled visualization.

5. Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of the resulting plot.

1. Use both the `prices_square_foot_by_year` DataFrame and interactive plots to answer the following questions:

    - Did any year experience a drop in the average sale price per square foot compared to the previous year?

    - If so, did the gross rent increase or decrease during that year?

Step 1: Group the data by year, and then average the results.

In [5]:

```
# Create a numerical aggregation by grouping the data by year and averaging the results
prices_square_foot_by_year = sfo_data_df.groupby('year').mean()
```

```
# Review the resulting DataFrame
display(prices_square_foot_by_year.head(10))
```

	sale_price_sqr_foot	housing_units	gross_rent
year			
2010	369.344353	372560.0	1239.0
2011	341.903429	374507.0	1530.0
2012	399.389968	376454.0	2324.0
2013	483.600304	378401.0	2971.0
2014	556.277273	380348.0	3528.0
2015	632.540352	382295.0	3739.0
2016	697.643709	384242.0	4390.0

Question: What is the lowest gross rent reported for the years included in the DataFrame?

Answer: # 2010

Step 2: Create a new DataFrame named `prices_square_foot_by_year` by filtering out the “housing_units” column. The new DataFrame should include the averages per year for only the sale price per square foot and the gross rent.

In [6]:

```
# Filter out the housing_units column, creating a new DataFrame
# Keep only sale_price_sqr_foot and gross_rent averages per year
prices_square_foot_by_year = sfo_data_df.drop('housing_units' , axis=1).groupby('year').mean()

# Review the DataFrame
display(prices_square_foot_by_year.head(10))
```

	sale_price_sqr_foot	gross_rent
year		
2010	369.344353	1239.0
2011	341.903429	1530.0
2012	399.389968	2324.0
2013	483.600304	2971.0
2014	556.277273	3528.0
2015	632.540352	3739.0
2016	697.643709	4390.0

Step 3: Use hvPlot to plot the `prices_square_foot_by_year` DataFrame as a line plot.

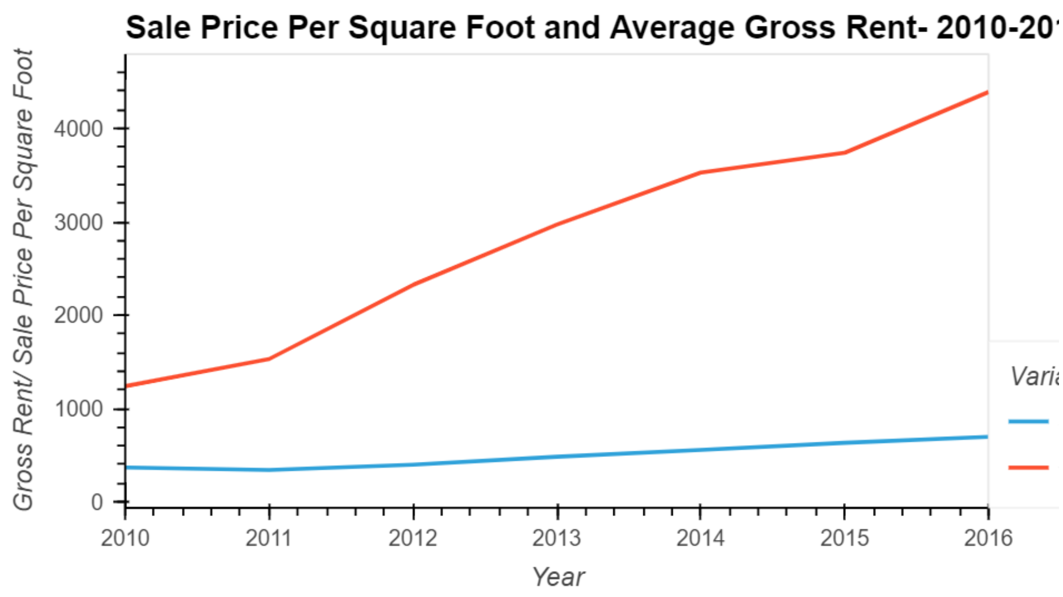
> **Hint** This single plot will include lines for both `sale_price_sqr_foot` and `gross_rent`

Step 4: Style and format the line plot to ensure a professionally styled visualization.

In [7]:

```
# Plot prices_square_foot_by_year.
# Inclued labels for the x- and y-axes, and a title.
prices_square_foot_by_year.hvplot.line(
    x="year",
    y=["sale_price_sqr_foot", "gross_rent"],
    title='Sale Price Per Square Foot and Average Gross Rent- 2010-2016 - San Francisco',
    xlabel="Year",
    ylabel="Gross Rent/ Sale Price Per Square Foot"
).opts(
    yformatter='%.0f'
)
```

Out[7]:



Step 6: Use both the `prices_square_foot_by_year` DataFrame and interactive plots to answer the following questions:

Question: Did any year experience a drop in the average sale price per square foot compared to the previous year?

Answer: # 2011

Question: If so, did the gross rent increase or decrease during that year?

Answer: # Increase

Compare the Average Sale Prices by Neighborhood

For this part of the assignment, use interactive visualizations and widgets to explore the average sale price per square foot by neighborhood. To do so, complete the following steps:

1. Create a new DataFrame that groups the original DataFrame by year and neighborhood. Aggregate the results by the `mean` of the groups.

2. Filter out the “housing_units” column to create a DataFrame that includes only the `sale_price_sqr_foot` and `gross_rent` averages per year.

3. Create an interactive line plot with hvPlot that visualizes both `sale_price_sqr_foot` and `gross_rent`. Set the x-axis parameter to the year (`x="year"`). Use the `groupby` parameter to create an interactive widget for `neighborhood`.

4. Style and format the line plot to ensure a professionally styled visualization.

5. Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of the resulting plot.

1. Use the interactive visualization to answer the following question:

    - For the Anza Vista neighborhood, is the average sale price per square foot for 2016 more or less than the price that’s listed for 2012?

Step 1: Create a new DataFrame that groups the original DataFrame by year and neighborhood. Aggregate the results by the `mean` of the groups.

In [8]:

```
# Group by year and neighborhood and then create a new dataframe of the mean values
prices_by_year_by_neighborhood = sfo_data_df.groupby(['year','neighborhood']).mean()

# Review the DataFrame
prices_by_year_by_neighborhood.head(10)
```

Out[8]:

```
                        sale_price_sqr_foot  housing_units  gross_rent
year  neighborhood
2010  Alamo Square               291.182945       372560.0      1239.0
      Anza Vista                 267.932583       372560.0      1239.0
      Bayview                    170.098665       372560.0      1239.0
      Buena Vista Park           347.394919       372560.0      1239.0
      Central Richmond           319.027623       372560.0      1239.0
      Central Sunset             418.172493       372560.0      1239.0
      Corona Heights             369.359338       372560.0      1239.0
      Cow Hollow                 569.379968       372560.0      1239.0
      Croker Amazon              165.645730       372560.0      1239.0
      Diamond Heights            456.930822       372560.0      1239.0
```

Step 2: Filter out the “housing_units” column to create a DataFrame that includes only the `sale_price_sqr_foot` and `gross_rent` averages per year.

In [9]:

```python
# Filter out the housing_units
prices_by_year_by_neighborhood =prices_by_year_by_neighborhood.drop('housing_units' , axis=1)

# Review the first and last five rows of the DataFrame
display(prices_by_year_by_neighborhood.head())
display(prices_by_year_by_neighborhood.tail())
```

		sale_price_sqr_foot	gross_rent
year	**neighborhood**		
2010	**Alamo Square**	291.182945	1239.0
	Anza Vista	267.932583	1239.0
	Bayview	170.098665	1239.0
	Buena Vista Park	347.394919	1239.0
	Central Richmond	319.027623	1239.0

		sale_price_sqr_foot	gross_rent
year	**neighborhood**		
2016	**Telegraph Hill**	903.049771	4390.0
	Twin Peaks	970.085470	4390.0
	Van Ness/ Civic Center	552.602567	4390.0
	Visitacion Valley	328.319007	4390.0
	Westwood Park	631.195426	4390.0

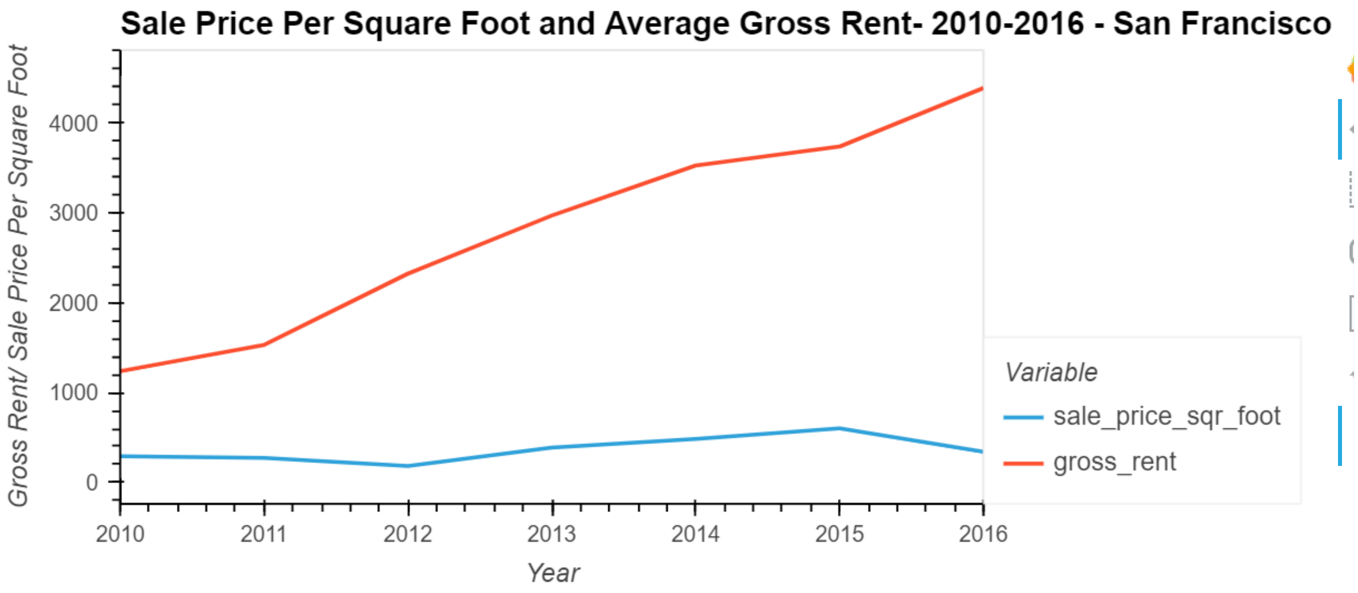
Step 3: Create an interactive line plot with hvPlot that visualizes both `sale_price_sqr_foot` and `gross_rent`. Set the x-axis parameter to the year (`x="year"`). Use the `groupby` parameter to create an interactive widget for `neighborhood`.

Step 4: Style and format the line plot to ensure a professionally styled visualization.

In [10]:

```
# Use hvplot to create an interactive line plot of the average price per square foot
# The plot should have a dropdown selector for the neighborhood
prices_by_year_by_neighborhood.hvplot.line(
    x="year",
    y=["sale_price_sqr_foot", "gross_rent"],
    groupby='neighborhood',
    title='Sale Price Per Square Foot and Average Gross Rent- 2010-2016 - San Francisco',
    xlabel="Year",
    ylabel="Gross Rent/ Sale Price Per Square Foot"
)
```

Out[10]:



Step 6: Use the interactive visualization to answer the following question:

Question: For the Anza Vista neighborhood, is the average sale price per square foot for 2016 more or less than the price that's listed for 2012?

Answer: # sale price per square foot in 2016 is less than 2012 price.

Build an Interactive Neighborhood Map

For this part of the assignment, explore the geospatial relationships in the data by using interactive visualizations with hvPlot and GeoViews. To build your map, use the `sfo_data_df` DataFrame (created during the initial import), which includes the neighborhood location data with the average prices. To do all this, complete the following steps:

1. Read the `neighborhood_coordinates.csv` file from the `Resources` folder into the notebook, and create a DataFrame named `neighborhood_locations_df`. Be sure to set the `index_col` of the DataFrame as “Neighborhood”.

2. Using the original `sfo_data_df` Dataframe, create a DataFrame named `all_neighborhood_info_df` that groups the data by neighborhood. Aggregate the results by the `mean` of the group.

3. Review the two code cells that concatenate the `neighborhood_locations_df` DataFrame with the `all_neighborhood_info_df` DataFrame. Note that the first cell uses the Pandas concat function to create a DataFrame named `all_neighborhoods_df`. The second cell cleans the data and sets the “Neighborhood” column. Be sure to run these cells to create the `all_neighborhoods_df` DataFrame, which you’ll need to create the geospatial visualization.

4. Using hvPlot with GeoViews enabled, create a `points` plot for the `all_neighborhoods_df` DataFrame. Be sure to do the following:

   - Set the `size` parameter to “sale_price_sqr_foot”.
   - Set the `color` parameter to “gross_rent”.
   - Set the `size_max` parameter to “25”.
   - Set the `zoom` parameter to “11”.

Note that your resulting plot should appear similar to the following image:

A screenshot depicts an example of a scatter plot created with hvPlot and GeoViews.

1. Use the interactive map to answer the following question:

   - Which neighborhood has the highest gross rent, and which has the highest sale price per square foot?

Step 1: Read the `neighborhood_coordinates.csv` file from the `Resources` folder into the notebook, and create a DataFrame named `neighborhood_locations_df`. Be sure to set the `index_col` of the DataFrame as “Neighborhood”.

In [11]:

```
# Load neighborhoods coordinates data
neighborhood_locations_df = pd.read_csv(Path("Resources/neighborhoods_coordinates.csv"), index_col='Neighborhood')
```

```
# Review the DataFrame
neighborhood_locations_df.head()
```

Out[11]:

	Lat	Lon
Neighborhood		
Alamo Square	37.791012	-122.402100
Anza Vista	37.779598	-122.443451
Bayview	37.734670	-122.401060
Bayview Heights	37.728740	-122.410980
Bernal Heights	37.728630	-122.443050

Step 2: Using the original `sfo_data_df` Dataframe, create a DataFrame named `all_neighborhood_info_df` that groups the data by neighborhood. Aggregate the results by the `mean` of the group.

In [12]:

```
# Calculate the mean values for each neighborhood
all_neighborhood_info_df = sfo_data_df.groupby('neighborhood').mean().drop('year' , axis=1)

# Review the resulting DataFrame
all_neighborhood_info_df.head()
```

Out[12]:

	sale_price_sqr_foot	housing_units	gross_rent
neighborhood			
Alamo Square	366.020712	378401.0	2817.285714
Anza Vista	373.382198	379050.0	3031.833333
Bayview	204.588623	376454.0	2318.400000
Bayview Heights	590.792839	382295.0	3739.000000
Bernal Heights	576.746488	379374.5	3080.333333

Step 3: Review the two code cells that concatenate the `neighborhood_locations_df`

DataFrame with the `all_neighborhood_info_df` DataFrame.

Note that the first cell uses the Pandas concat function to create a DataFrame named `all_neighborhoods_df` .

The second cell cleans the data and sets the “Neighborhood” column.

Be sure to run these cells to create the `all_neighborhoods_df` DataFrame, which you’ll need to create the geospatial visualization.

In [13]:

```
# Using the Pandas `concat` function, join the
# neighborhood_locations_df and the all_neighborhood_info_df DataFrame
# The axis of the concatenation is "columns".
# The concat function will automatially combine columns with
# identical information, while keeping the additional columns.
all_neighborhoods_df = pd.concat(
    [neighborhood_locations_df, all_neighborhood_info_df],
    axis="columns",
    sort=False
)

# Review the resulting DataFrame
display(all_neighborhoods_df.head())
display(all_neighborhoods_df.tail())
```

	Lat	Lon	sale_price_sqr_foot	housing_units	gross_rent
Alamo Square	37.791012	-122.402100	366.020712	378401.0	2817.285714
Anza Vista	37.779598	-122.443451	373.382198	379050.0	3031.833333
Bayview	37.734670	-122.401060	204.588623	376454.0	2318.400000
Bayview Heights	37.728740	-122.410980	590.792839	382295.0	3739.000000
Bernal Heights	37.728630	-122.443050	NaN	NaN	NaN

	Lat	Lon	sale_price_sqr_foot	housing_units	gross_rent
Yerba Buena	37.79298	-122.39636	576.709848	377427.5	2555.166667
Bernal Heights	NaN	NaN	576.746488	379374.5	3080.333333
Downtown	NaN	NaN	391.434378	378401.0	2817.285714
Ingleside	NaN	NaN	367.895144	377427.5	2509.000000
Outer Richmond	NaN	NaN	473.900773	378401.0	2817.285714

In [14]:

```
# Call the dropna function to remove any neighborhoods that do not have data
all_neighborhoods_df = all_neighborhoods_df.reset_index().dropna()

# Rename the "index" column as "Neighborhood" for use in the Visualization
all_neighborhoods_df = all_neighborhoods_df.rename(columns={"index": "Neighborhood"})

# Review the resulting DataFrame
display(all_neighborhoods_df.head())
display(all_neighborhoods_df.tail())
```

	Neighborhood	Lat	Lon	sale_price_sqr_foot	housing_units	gross_rent
0	Alamo Square	37.791012	-122.402100	366.020712	378401.0	2817.285714
1	Anza Vista	37.779598	-122.443451	373.382198	379050.0	3031.833333
2	Bayview	37.734670	-122.401060	204.588623	376454.0	2318.400000
3	Bayview Heights	37.728740	-122.410980	590.792839	382295.0	3739.000000
5	Buena Vista Park	37.768160	-122.439330	452.680591	378076.5	2698.833333

	Neighborhood	Lat	Lon	sale_price_sqr_foot	housing_units	gross_rent
68	West Portal	37.74026	-122.463880	498.488485	376940.75	2515.500000
69	Western Addition	37.79298	-122.435790	307.562201	377427.50	2555.166667
70	Westwood Highlands	37.73470	-122.456854	533.703935	376454.00	2250.500000
71	Westwood Park	37.73415	-122.457000	687.087575	382295.00	3959.000000
72	Yerba Buena	37.79298	-122.396360	576.709848	377427.50	2555.166667

In [ ]:

```

```

Step 4: Using hvPlot with GeoViews enabled, create a `points` plot for the `all_neighborhoods_df` DataFrame. Be sure to do the following:

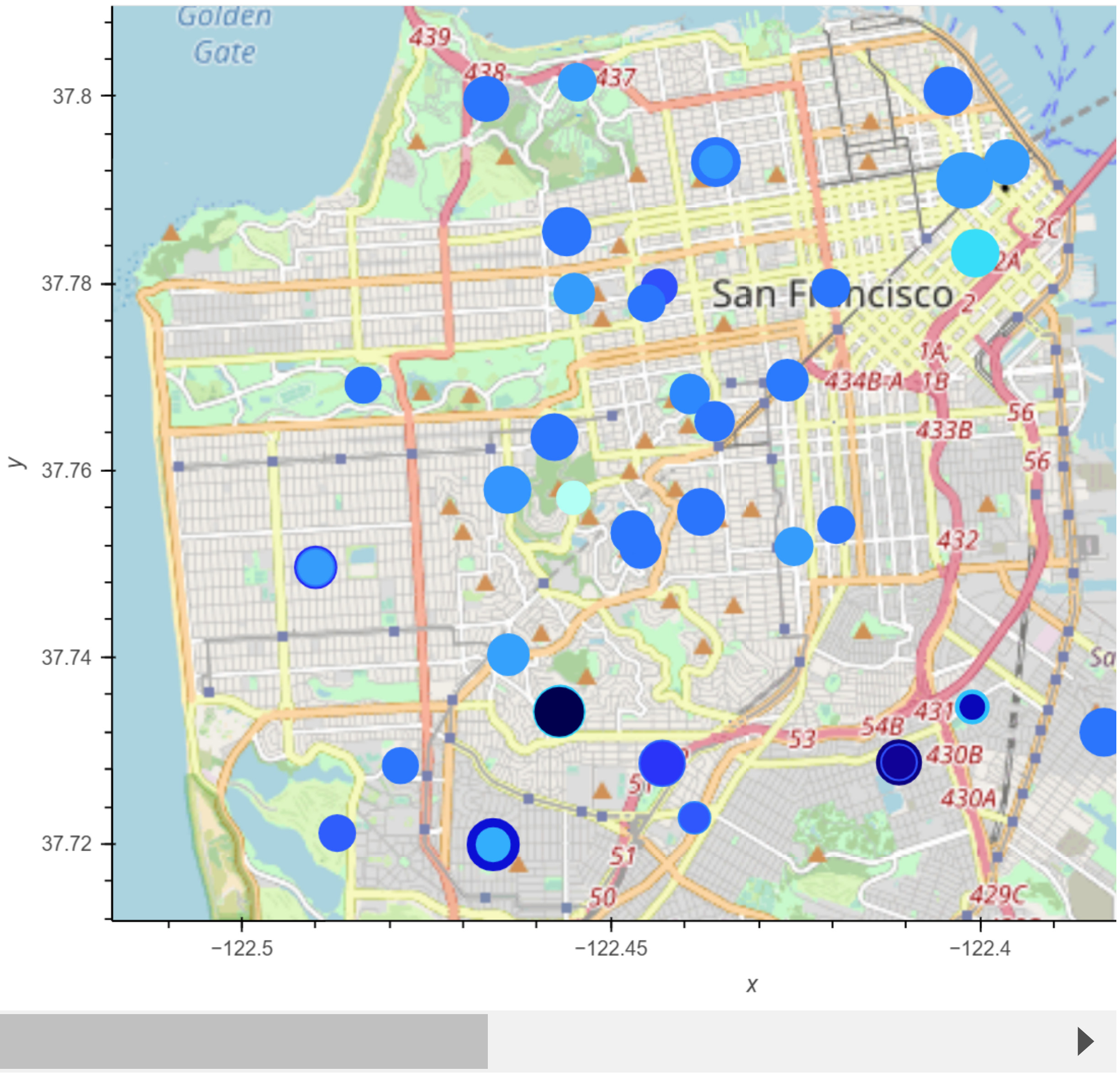
- Set the `geo` parameter to True.
- Set the `size` parameter to “sale_price_sqr_foot”.
- Set the `color` parameter to “gross_rent”.
- Set the `frame_width` parameter to 700.
- Set the `frame_height` parameter to 500.
- Include a descriptive title.

In [15]:

```
# Create a plot to analyze neighborhood info
place_of_neighborhoods_df = all_neighborhoods_df.hvplot.points(
    'Lon',
    'Lat',
    geo=True,
    size='sale_price_sqr_foot',
    color='gross_rent',
    tiles='OSM',
    frame_width = 700,
    frame_height = 500
    )

# Show the plot
place_of_neighborhoods_df
```

Out[15]:



Step 5: Use the interactive map to answer the following question:

Question: Which neighborhood has the highest gross rent, and which has the highest sale price per square foot?

Answer: # Highest Gross Rent : Westwood Park --- Highest Sale Price per Square Foot: Union Square District

Compose Your Data Story

Based on the visualizations that you have created, compose a data story that synthesizes your analysis by answering the following questions:

Question: How does the trend in rental income growth compare to the trend in sales prices? Does this same trend hold true for all the neighborhoods across San Francisco?

Answer: # Overall rental income and sale price have a positive trend, but rental income growth has better performance and trend. This rate and performance are not the same for all the neighborhoods and changed over some years.

Question: What insights can you share with your company about the potential one-click, buy-and-rent strategy that they're pursuing? Do neighborhoods exist that you would suggest for investment, and why?

Answer: # The buy-and-rent strategy has the best performance when we find locations with maximum sale price growth and rent income growth. Fortunately in the GeoView map, we have areas that meet these situations and we can offer to investors.

In [ ]: