Learning Reflection Assignment:

Now you have successfully conquered the material. You tried hard to practice the questions, and you have a good result from the practice.

In this assignment, you should first show what is your findings with the dataset of your choice by using the package in the module. You then should summarize your learning experience briefly. You don't need to write lengthy answers, one or two paragraphs for one question will be fine. In terms of communication, providing some examples to support your arguments would be better.

You should prepare a PDF that contains both your practice/result and your answers to the questions.

Your learning reflection will be peer-reviewed by the cohort. Let's learn from each other's experiences and it is, once again, another type of learning.

Let's get started!

Regarding the data and your result:

Q1: Print your result of playing with the data set of your choice with the package in this module. Try to make good use of the data, and conduct clear and interesting communication with your audience.

Q2: What is the most difficult part of playing with the data? How did you work through the difficulty?

Q3: What is the most important takeaway from your result? Why?

Regarding your learning experience:

Q4: Do you have a better understanding and capability for data visualization? Why?

Q5: What is your most successful approach in learning this module?

```python
In [23]: import matplotlib as mpl
         import matplotlib.pyplot as plt
         import numpy as np
         import pandas as pd
         import sklearn
```

```python
In [33]: housing = pd.read_csv("../housing/housing.csv")
```

```
In [34]: housing
```

Out[34]:

|	longitude	latitude	housing_median_age	total_rooms	total_bedrooms	population	hous
0	-122.23	37.88	41.0	880.0	129.0	322.0	
1	-122.22	37.86	21.0	7099.0	1106.0	2401.0	
2	-122.24	37.85	52.0	1467.0	190.0	496.0	
3	-122.25	37.85	52.0	1274.0	235.0	558.0	
4	-122.25	37.85	52.0	1627.0	280.0	565.0	
...	...	...	...	...	...	...	
20635	-121.09	39.48	25.0	1665.0	374.0	845.0	
20636	-121.21	39.49	18.0	697.0	150.0	356.0	
20637	-121.22	39.43	17.0	2254.0	485.0	1007.0	
20638	-121.32	39.43	18.0	1860.0	409.0	741.0	
20639	-121.24	39.37	16.0	2785.0	616.0	1387.0	

20640 rows × 10 columns

```
In [35]: %matplotlib inline
import matplotlib.pyplot as plt
housing.hist(bins=50, figsize=(20,15))
plt.show()
```
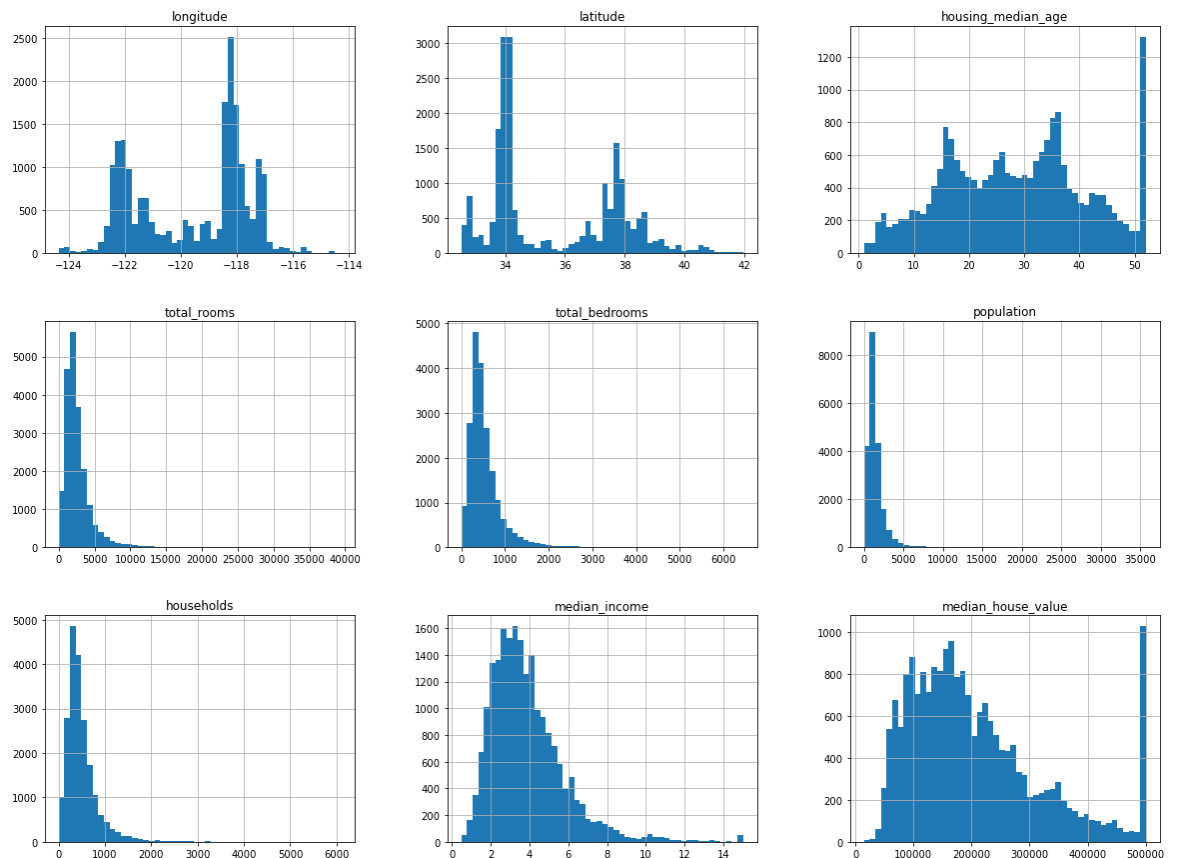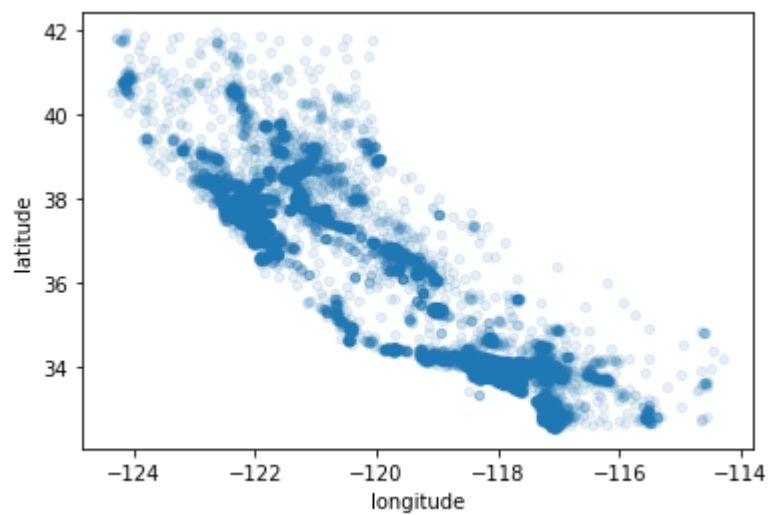
```
In [36]: housing.plot(kind="scatter", x="longitude", y="latitude")
```

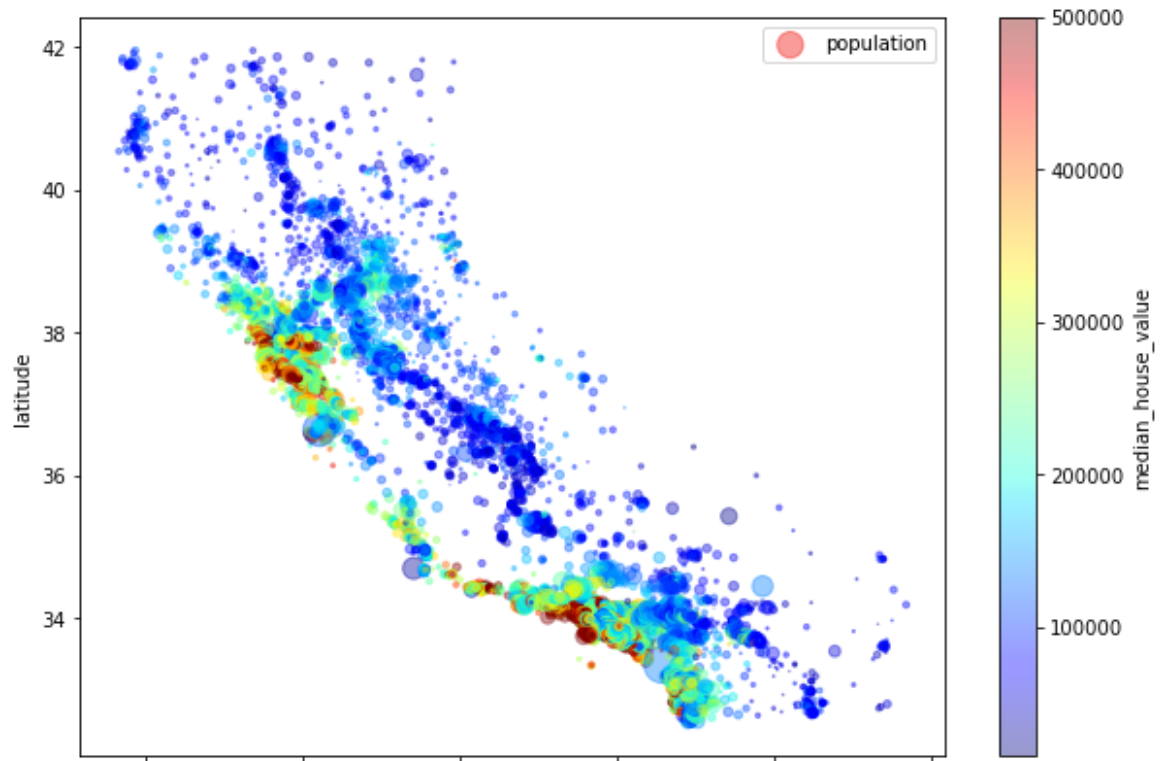Out[36]: <AxesSubplot:xlabel='longitude', ylabel='latitude'>
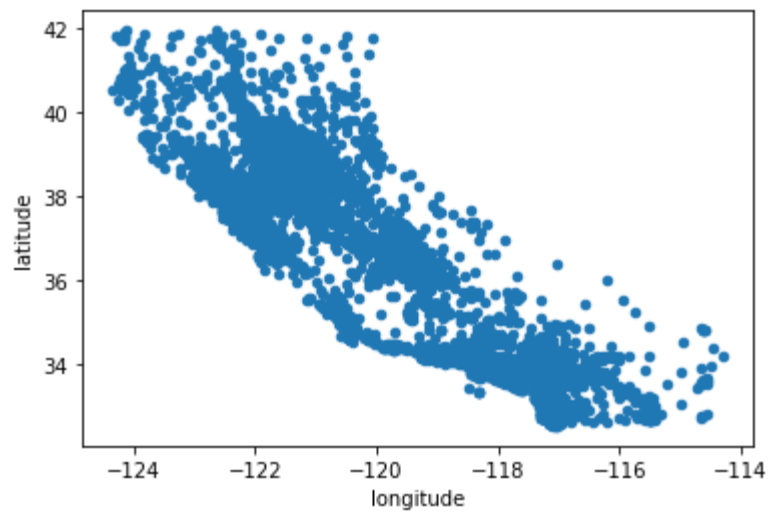

```
In [37]: housing.plot(kind="scatter", x="longitude", y="latitude", alpha=0.1)
```

Out[37]: <AxesSubplot:xlabel='longitude', ylabel='latitude'>

```
In [39]: housing.plot(kind="scatter", x="longitude", y="latitude", alpha=0.4,
         s=housing["population"]/100, label="population", figsize=(10,7),
         c="median_house_value", cmap=plt.get_cmap("jet"), colorbar=True,
         )
         plt.legend()
```

Out[39]: <matplotlib.legend.Legend at 0x7fe416f17e20>

In [44]:
```python
x = housing['median_house_value']

# Note that even in the OO-style, we use `.pyplot.figure` to create th
fig, ax = plt.subplots(figsize=(5, 2.7), layout='constrained')
ax.plot(x, x, label='linear')  # Plot some data on the axes.
ax.plot(x, x**2, label='quadratic')  # Plot more data on the axes...
ax.plot(x, x**3, label='cubic')  # ... and some more.
ax.set_xlabel('x label')  # Add an x-label to the axes.
ax.set_ylabel('y label')  # Add a y-label to the axes.
ax.set_title("Simple Plot")  # Add a title to the axes.
ax.legend()  # Add a legend.
```

Out[44]: <matplotlib.legend.Legend at 0x7fe416ea0a90>
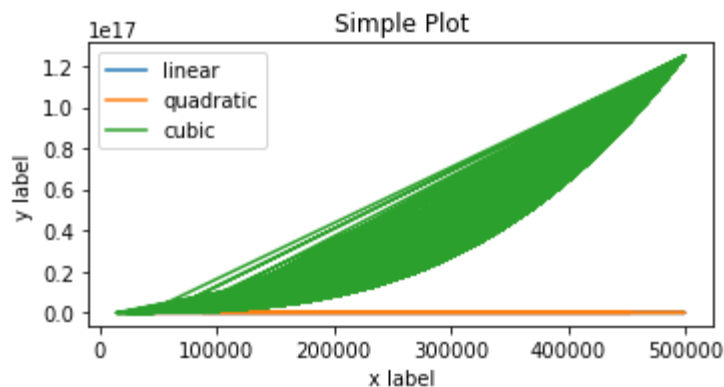

In [45]:
```python
housing.head()
```

Out[45]:

	longitude	latitude	housing_median_age	total_rooms	total_bedrooms	population	household
0	-122.23	37.88	41.0	880.0	129.0	322.0	126
1	-122.22	37.86	21.0	7099.0	1106.0	2401.0	1138
2	-122.24	37.85	52.0	1467.0	190.0	496.0	177
3	-122.25	37.85	52.0	1274.0	235.0	558.0	219
4	-122.25	37.85	52.0	1627.0	280.0	565.0	259

```
In [47]: data1 = housing["total_rooms"]
         data2 = housing["total_rooms"]
         data3 = housing["total_bedrooms"]
         data4a = housing["population"]
         data4b = housing["households"]

         plt.hist(data1, bins=5, color='g', alpha=0.75, label='bar hist') # def
         plt.hist(data2, color='b', alpha=0.65, histtype='stepfilled', label='s
         plt.hist(data3, color='r', histtype='step', label='step hist')
         plt.hist((data4a, data4b), color=('r','m'), alpha=0.55, histtype='bars

         plt.xlabel("Value")
         plt.ylabel("Frequency")
         plt.legend()
         plt.grid(True)
         plt.show()
```
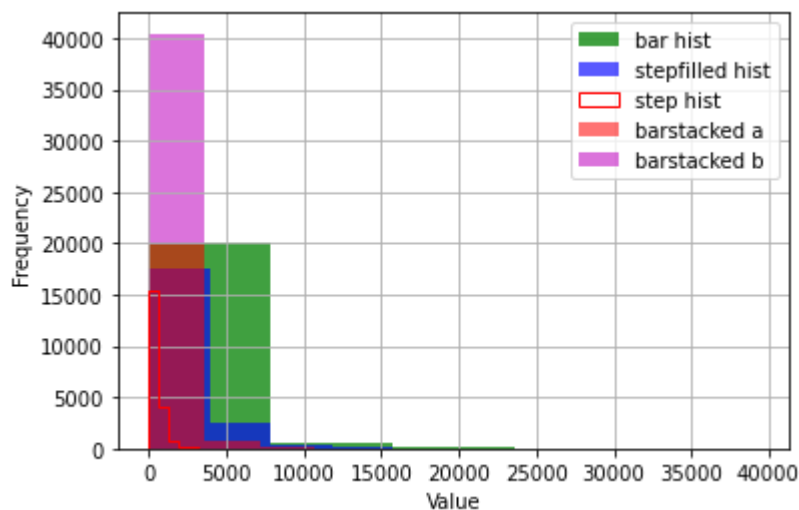

Q1: Print your result of playing with the data set of your choice with the package in this module. Try to make good use of the data, and conduct clear and interesting communication with your audience. - see above

  2. What is the most difficult part of playing with the data? How did you work through the difficulty?

visualy showing what is meaningful.

  3. Q3: What is the most important takeaway from your result? Why?
     • more expensive houses are on teh coast. I'm showing where the more expensive houeses are.

Q4: Do you have a better understanding and capability for data visualization? Why? - yes, better understand how to show whats import visually.

Q5: What is your most successful approach in learning this module? - practice

In [ ]: