07-Seaborn Exercises

July 16, 2025

1 Seaborn Exercises

AICTE Faculty ID: 1-3241967546
Faculty Name: Milav Jayeshkumar Dabgar
Date: July 10, 2025

Time to practice your new seaborn skills! Try to recreate the plots below (don't worry about color schemes, just the plot itself.

1.1 The Data

We will be working with a famous titanic data set for these exercises. Later on in the Machine Learning section of the course, we will revisit this data, and use it to predict survival rates of passengers. For now, we'll just focus on the visualization of the data with seaborn:

[1]:
```
import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline
```

[2]:
```
sns.set_style('whitegrid')
```

[3]:
```
titanic = sns.load_dataset('titanic')
```

[4]:
```
titanic.head()
```

[4]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	\
0	0	3	male	22.0	1	0	7.2500	S	Third	
1	1	1	female	38.0	1	0	71.2833	C	First	
2	1	3	female	26.0	0	0	7.9250	S	Third	
3	1	1	female	35.0	1	0	53.1000	S	First	
4	0	3	male	35.0	0	0	8.0500	S	Third	

	who	adult_male	deck	embark_town	alive	alone
0	man	True	NaN	Southampton	no	False
1	woman	False	C	Cherbourg	yes	False
2	woman	False	NaN	Southampton	yes	True
3	woman	False	C	Southampton	yes	False

```
 4    man        True  NaN  Southampton    no   True
```

[5]:
```
# Let's explore the dataset structure
print("Dataset shape:", titanic.shape)
print("\nColumn names:", titanic.columns.tolist())
print("\nDataset info:")
print(titanic.info())
print("\nFirst few rows:")
titanic.head()
```

```
Dataset shape: (891, 15)

Column names: ['survived', 'pclass', 'sex', 'age', 'sibsp', 'parch', 'fare',
'embarked', 'class', 'who', 'adult_male', 'deck', 'embark_town', 'alive',
'alone']

Dataset info:
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 15 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   survived     891 non-null    int64
 1   pclass       891 non-null    int64
 2   sex          891 non-null    object
 3   age          714 non-null    float64
 4   sibsp        891 non-null    int64
 5   parch        891 non-null    int64
 6   fare         891 non-null    float64
 7   embarked     889 non-null    object
 8   class        891 non-null    category
 9   who          891 non-null    object
 10  adult_male   891 non-null    bool
 11  deck         203 non-null    category
 12  embark_town  889 non-null    object
 13  alive        891 non-null    object
 14  alone        891 non-null    bool
dtypes: bool(2), category(2), float64(2), int64(4), object(5)
memory usage: 80.7+ KB
None

First few rows:
```

[5]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	\
0	0	3	male	22.0	1	0	7.2500	S	Third	
1	1	1	female	38.0	1	0	71.2833	C	First	
2	1	3	female	26.0	0	0	7.9250	S	Third	
3	1	1	female	35.0	1	0	53.1000	S	First	

```
4         0       3    male  35.0      0      0   8.0500        S  Third

     who  adult_male deck  embark_town alive  alone
0    man        True  NaN  Southampton    no  False
1  woman       False    C    Cherbourg   yes  False
2  woman       False  NaN  Southampton   yes   True
3  woman       False    C  Southampton   yes  False
4    man        True  NaN  Southampton    no   True
```

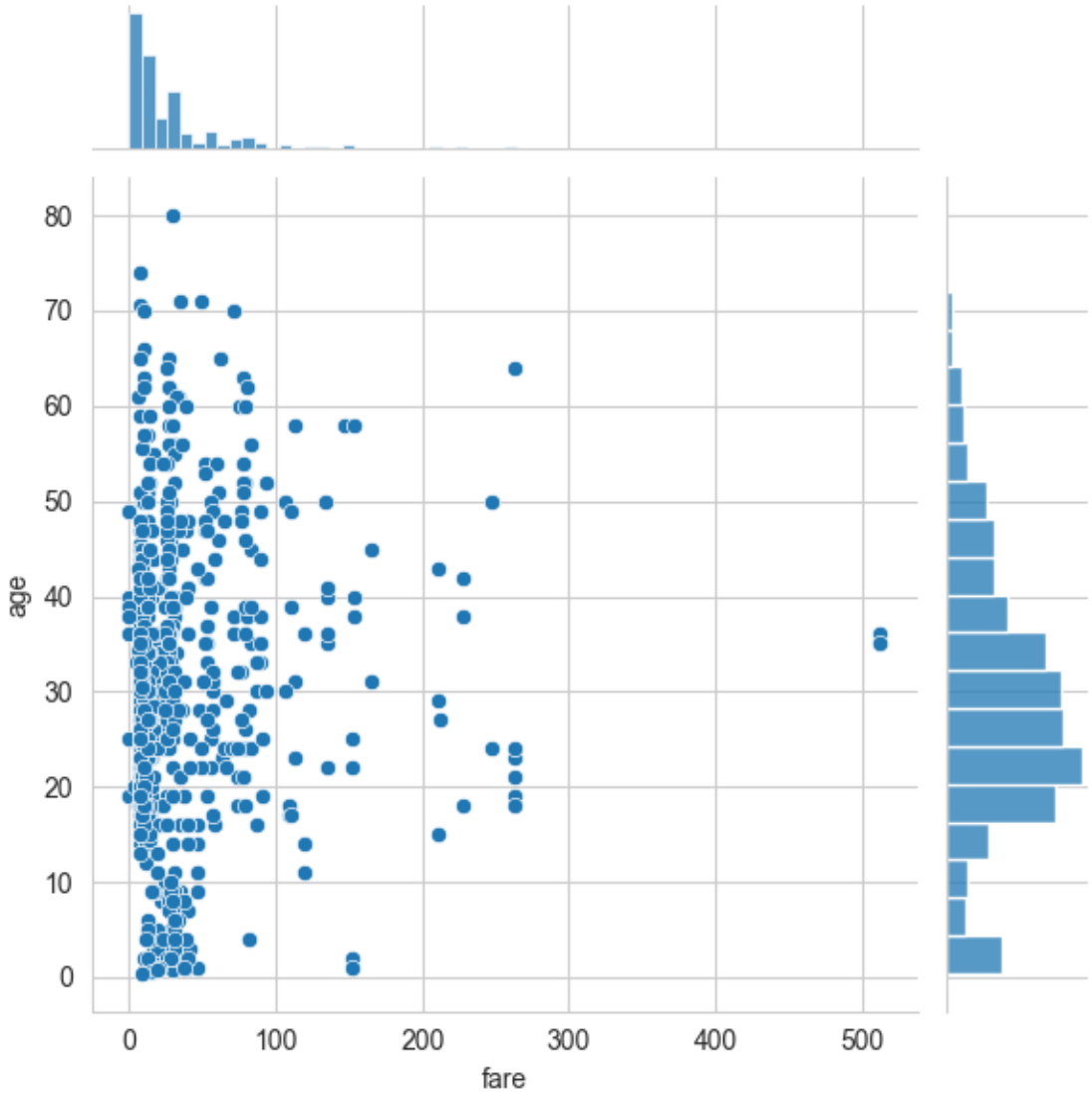
2 Exercises

** Recreate the plots below using the titanic dataframe. There are very few hints since most of the plots can be done with just one or two lines of code and a hint would basically give away the solution. Keep careful attention to the x and y labels for hints.**

** *Note! In order to not lose the plot image, make sure you don't code in the cell that is directly above the plot, there is an extra cell above that one which won't overwrite that plot!* **

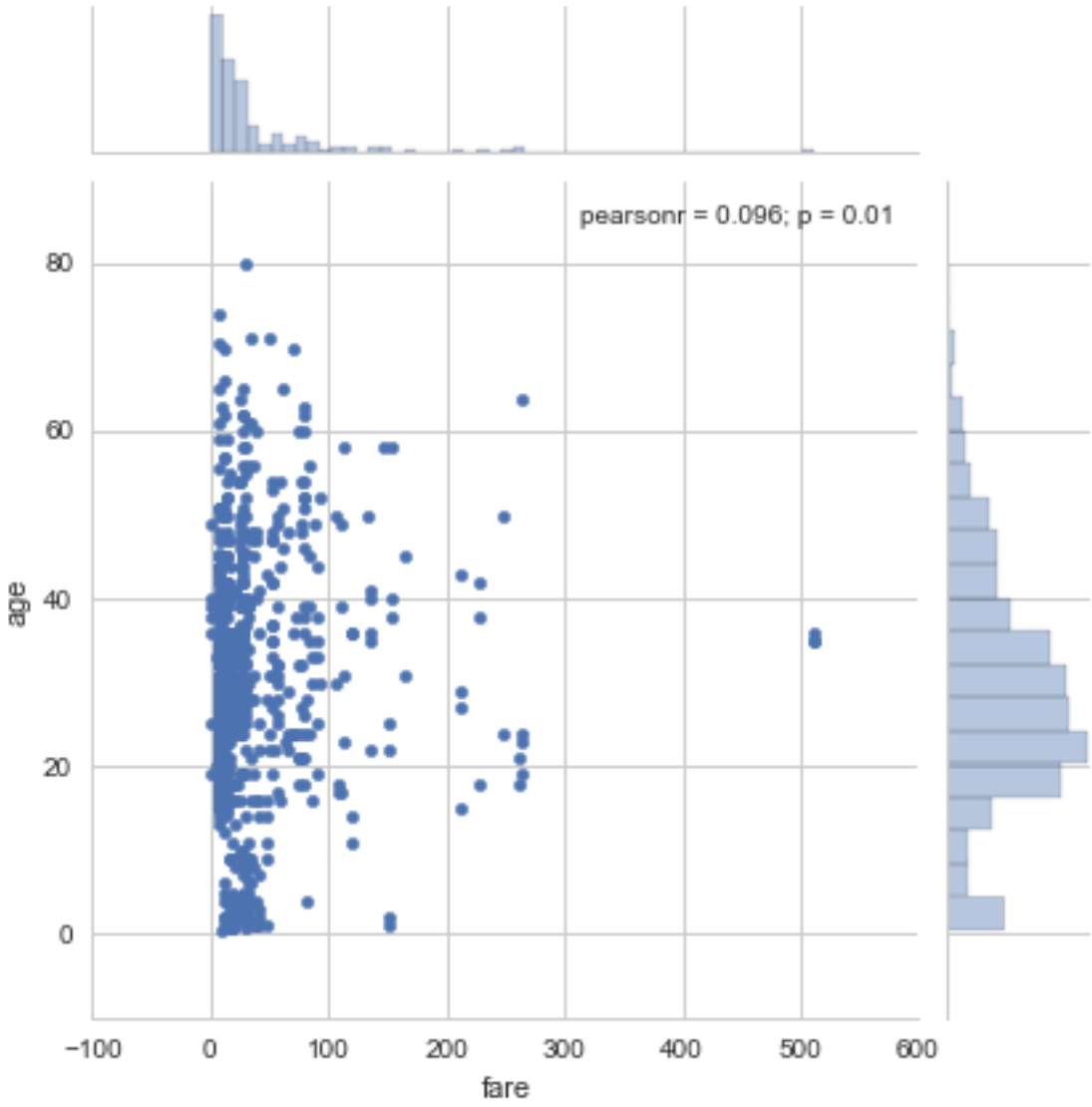
[6]:
```
sns.jointplot(x='fare', y='age', data=titanic)
```

[6]:
```
<seaborn.axisgrid.JointGrid at 0x11687d940>
```



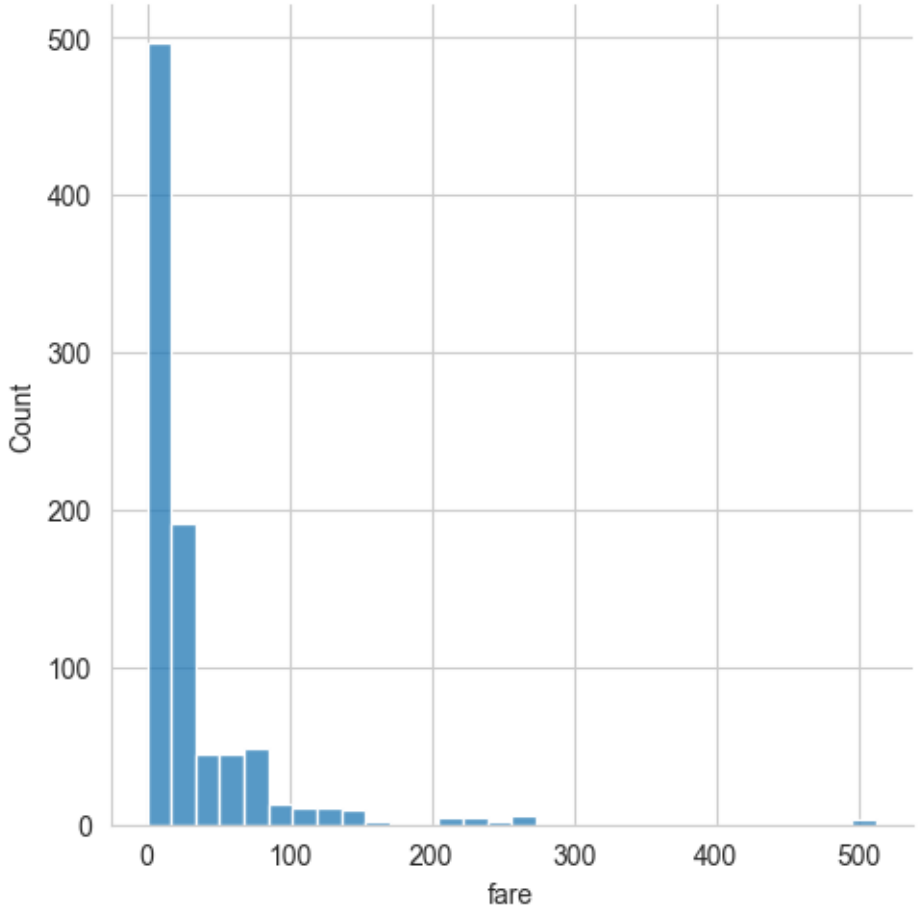
[41]:

[41]: <seaborn.axisgrid.JointGrid at 0x11d0389e8>



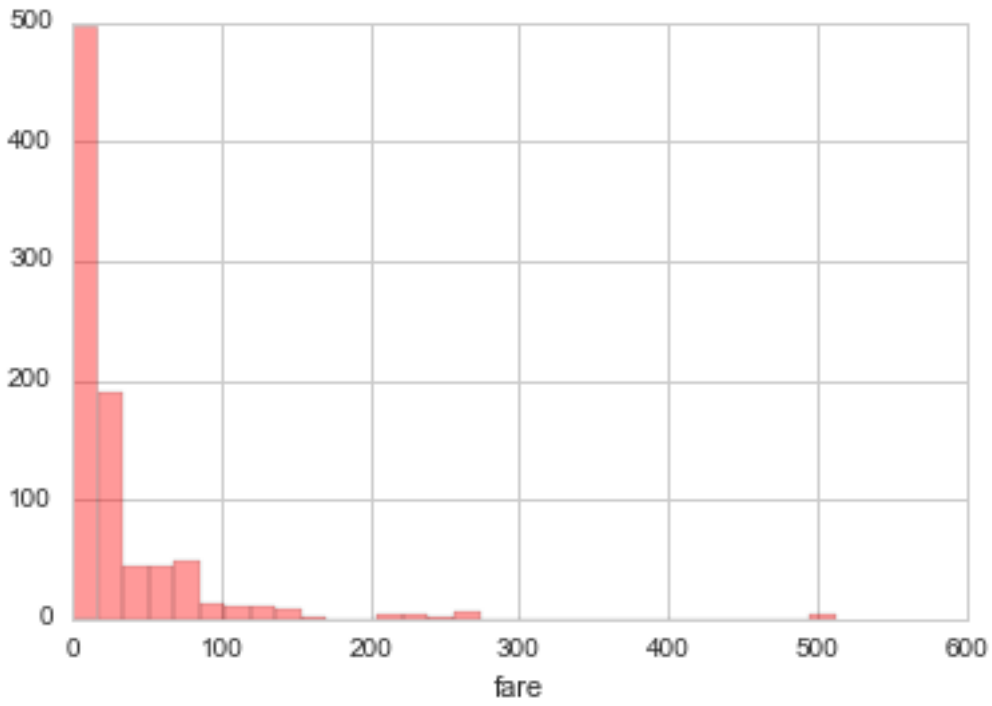
[7]:
```
sns.displot(titanic['fare'], bins=30, kde=False)
```

[7]:
```
<seaborn.axisgrid.FacetGrid at 0x1168c1fd0>
```



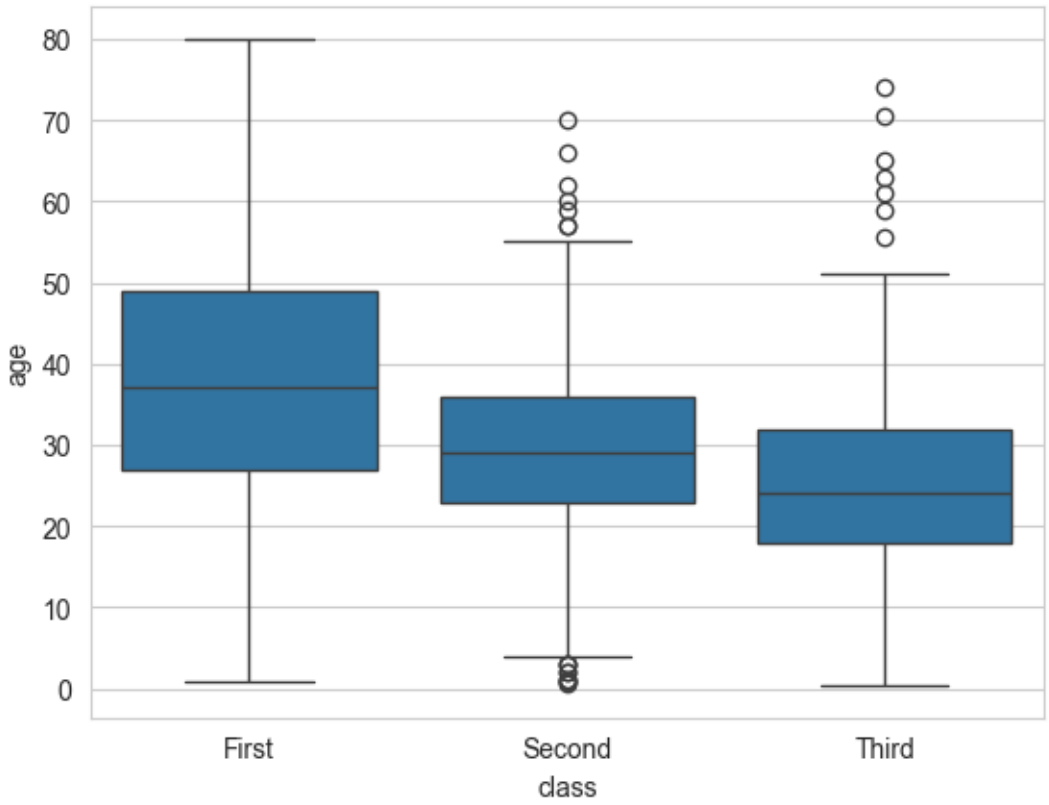
[44]:

[44]: <matplotlib.axes._subplots.AxesSubplot at 0x11fc5ca90>



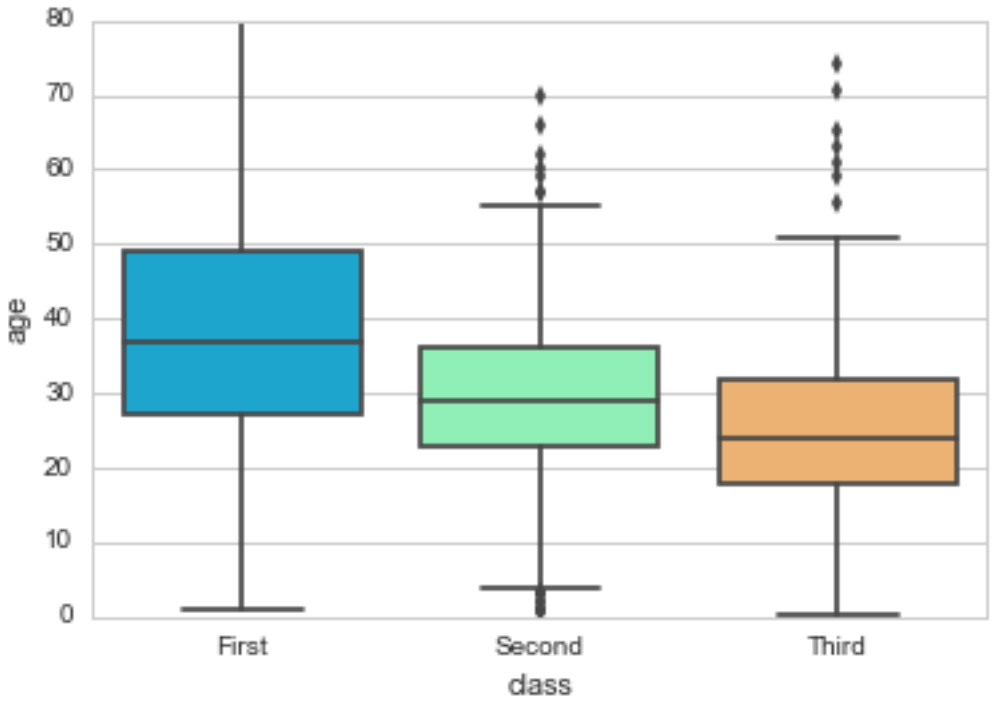
[8]:
```
sns.boxplot(x='class', y='age', data=titanic)
```

[8]:
```
<Axes: xlabel='class', ylabel='age'>
```



[45]:

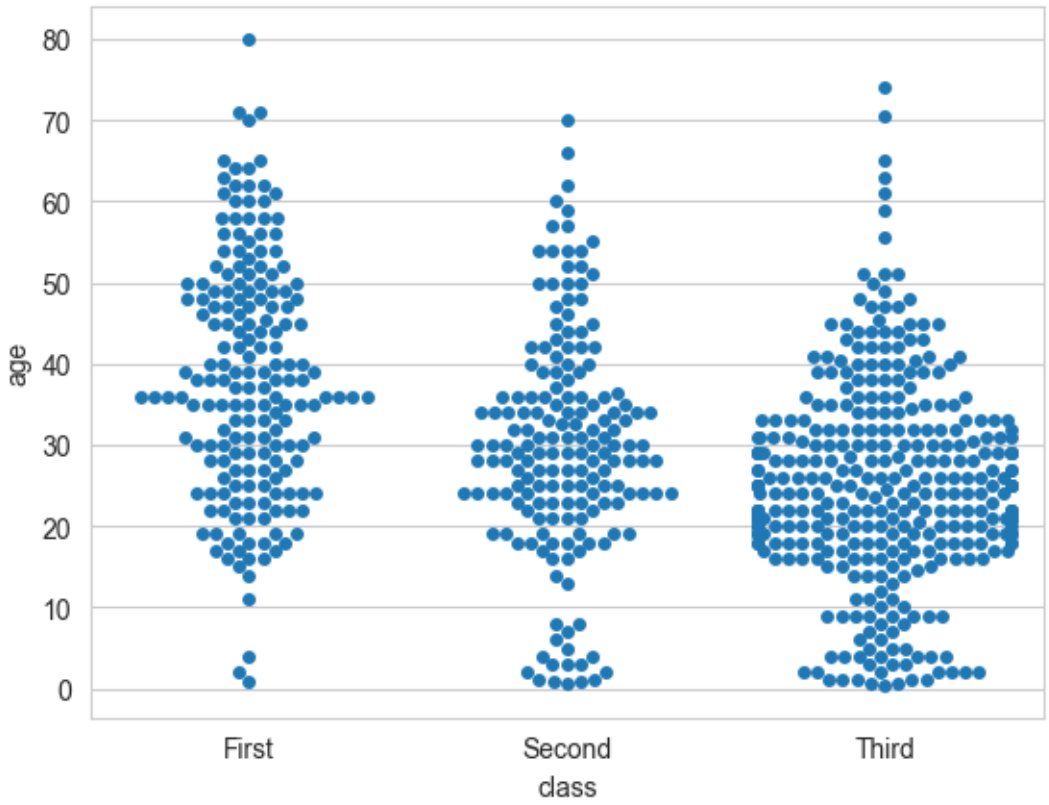
[45]: <matplotlib.axes._subplots.AxesSubplot at 0x11f23da90>



[9]:
```
sns.swarmplot(x='class', y='age', data=titanic)
```

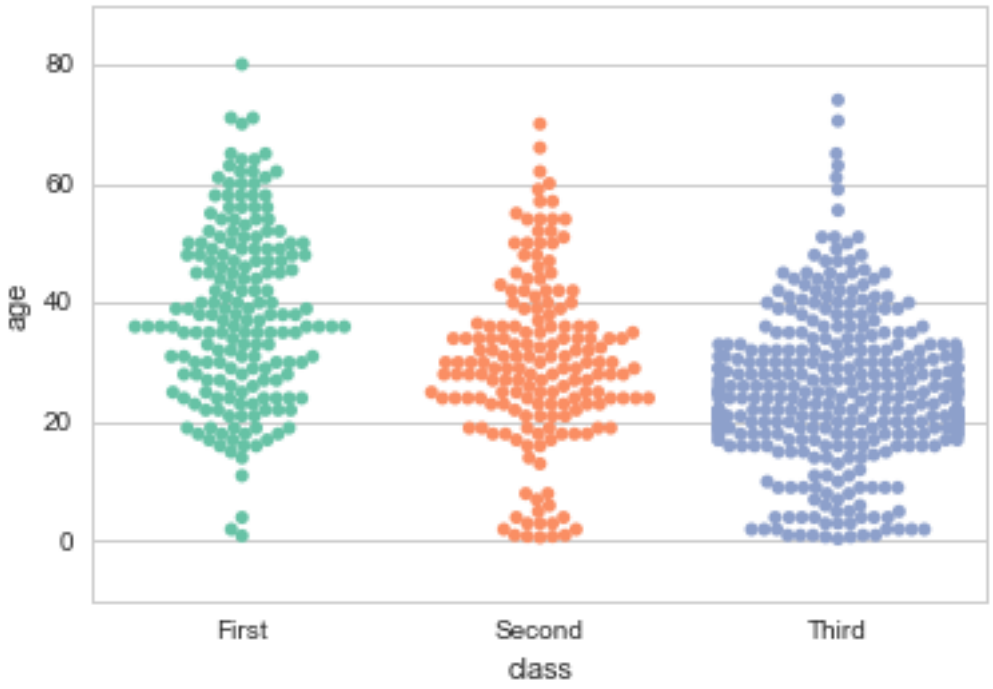
[9]:
```
<Axes: xlabel='class', ylabel='age'>
```

```
/Users/milav/Code/qip-dl/.venv/lib/python3.13/site-
packages/seaborn/categorical.py:3399: UserWarning: 15.2% of the points cannot be
placed; you may want to decrease the size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```



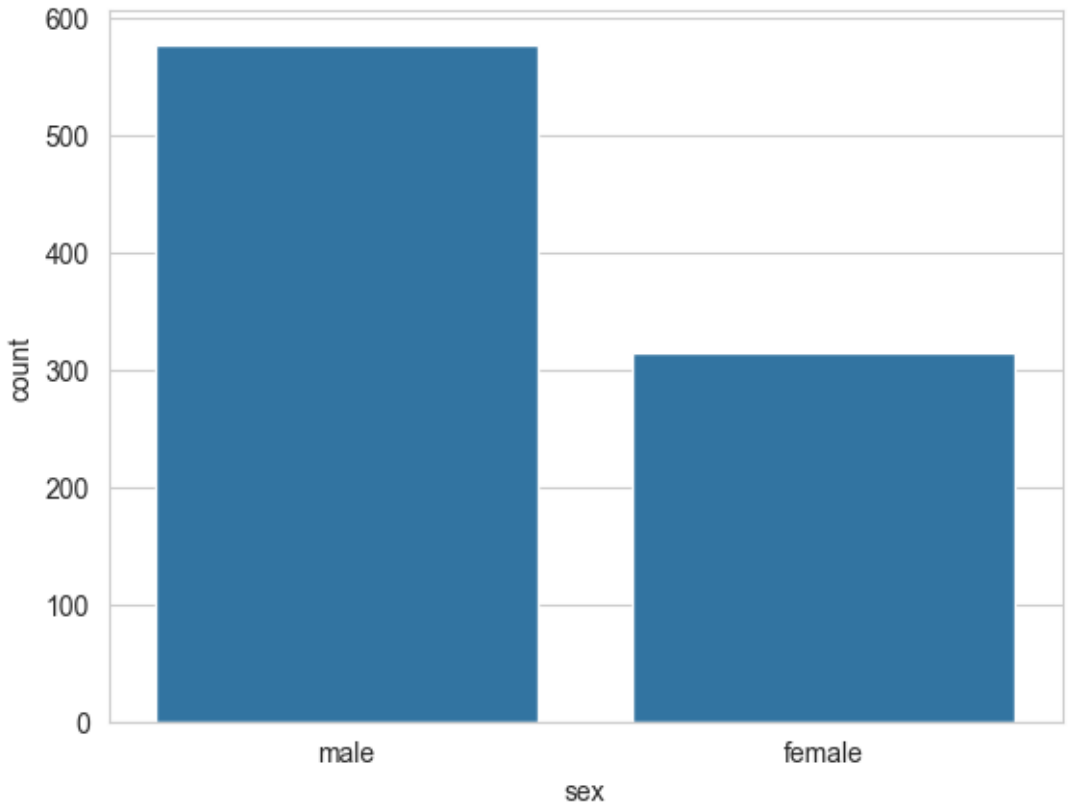
[46]:

[46]: <matplotlib.axes._subplots.AxesSubplot at 0x11f215320>



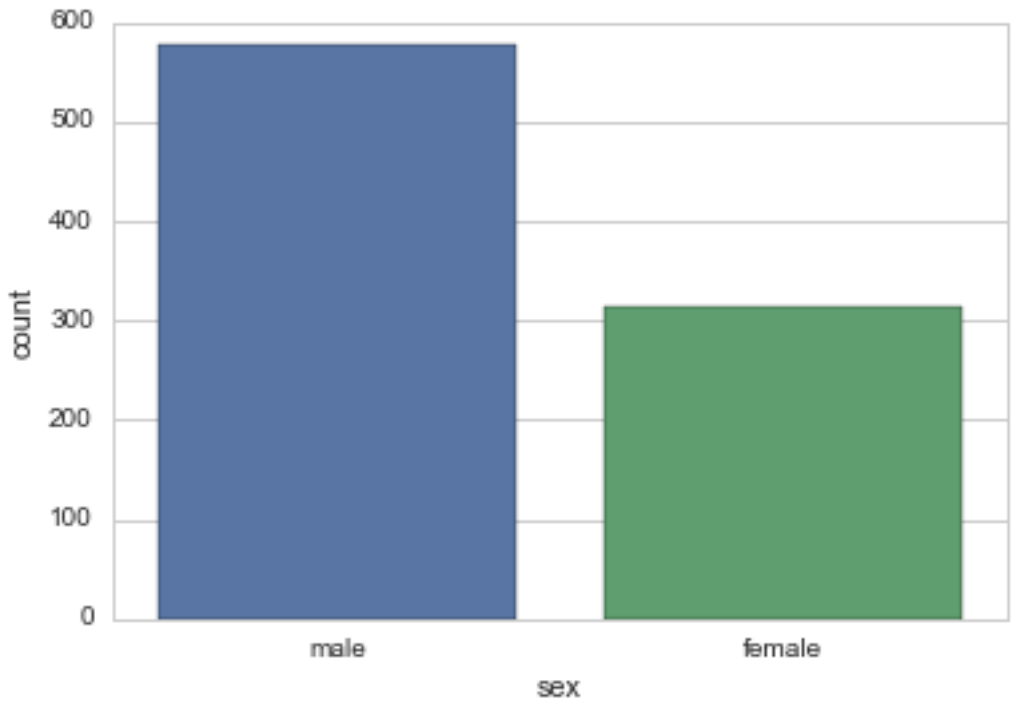
[10]:
```
sns.countplot(x='sex', data=titanic)
```

[10]:
```
<Axes: xlabel='sex', ylabel='count'>
```



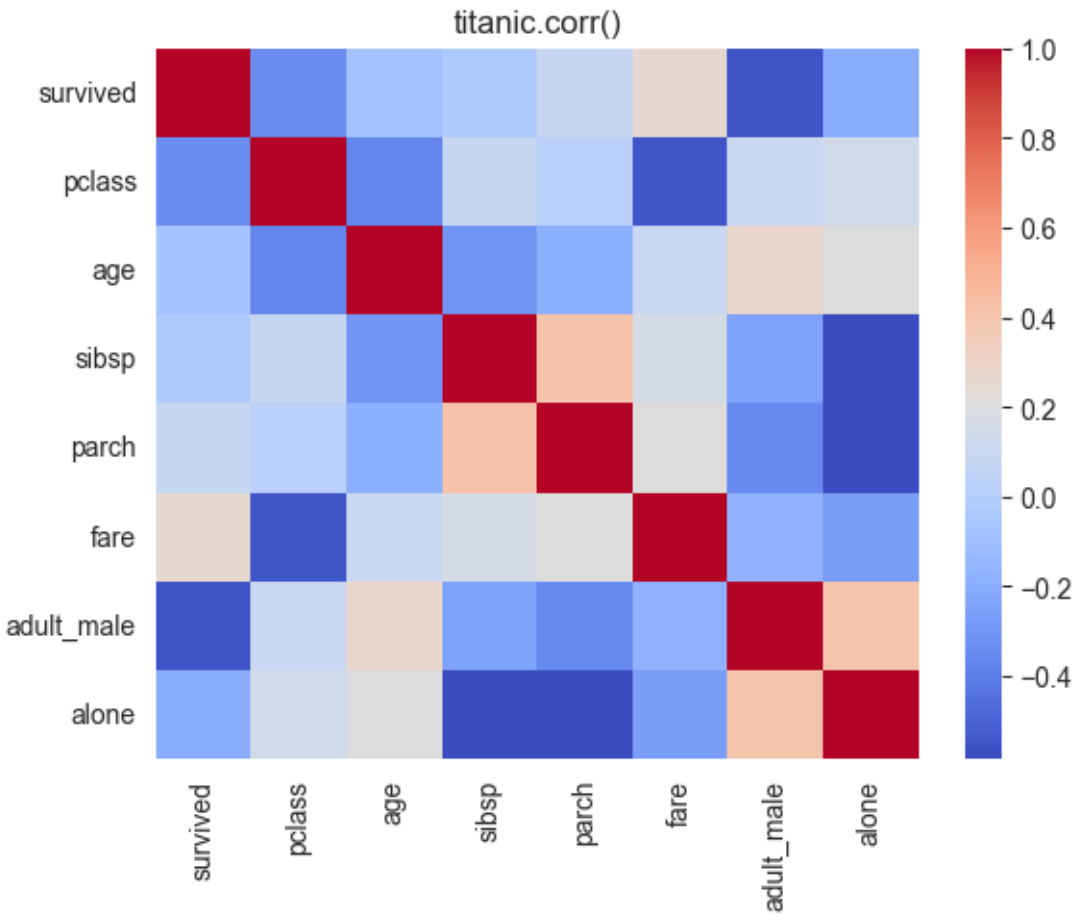
[47]:

[47]: <matplotlib.axes._subplots.AxesSubplot at 0x11f207ef0>



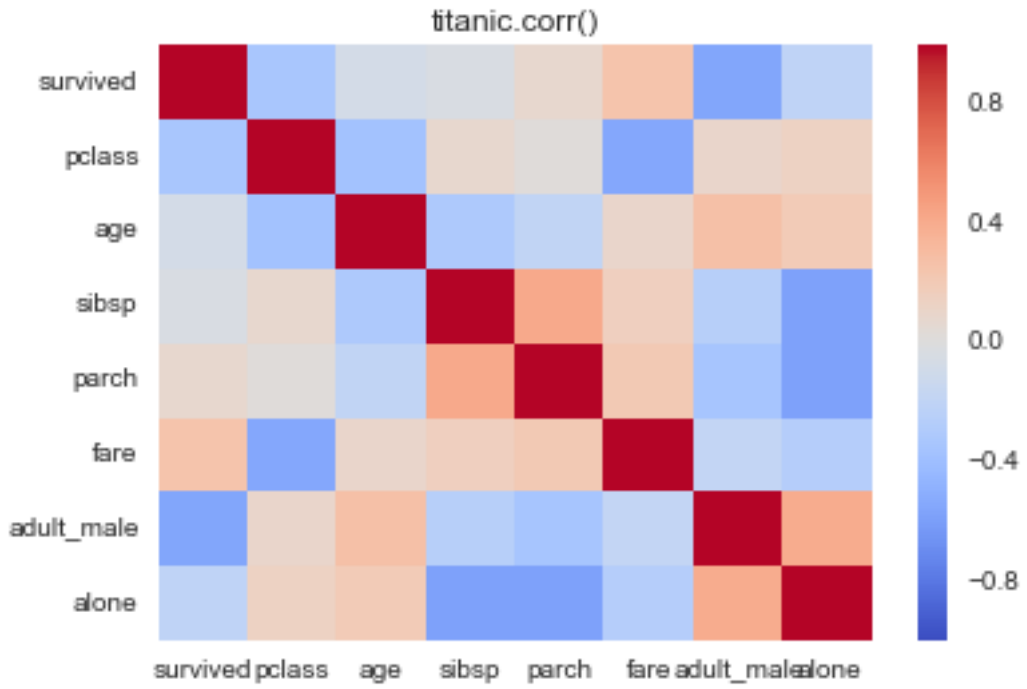
[12]:
```
sns.heatmap(titanic.corr(numeric_only=True), cmap='coolwarm')
plt.title('titanic.corr()')
```

[12]: Text(0.5, 1.0, 'titanic.corr()')



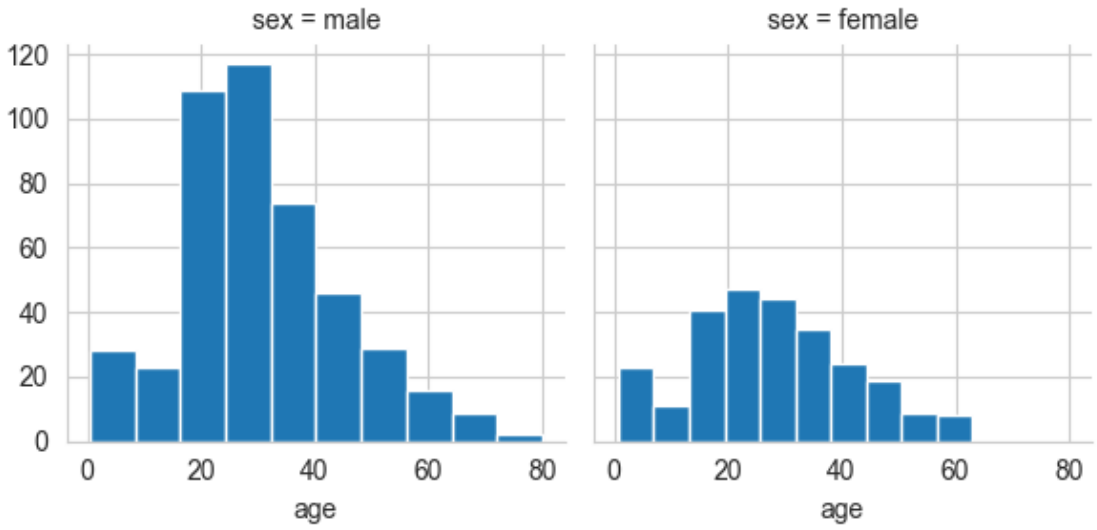
[48]:

[48]: <matplotlib.text.Text at 0x11d72da58>



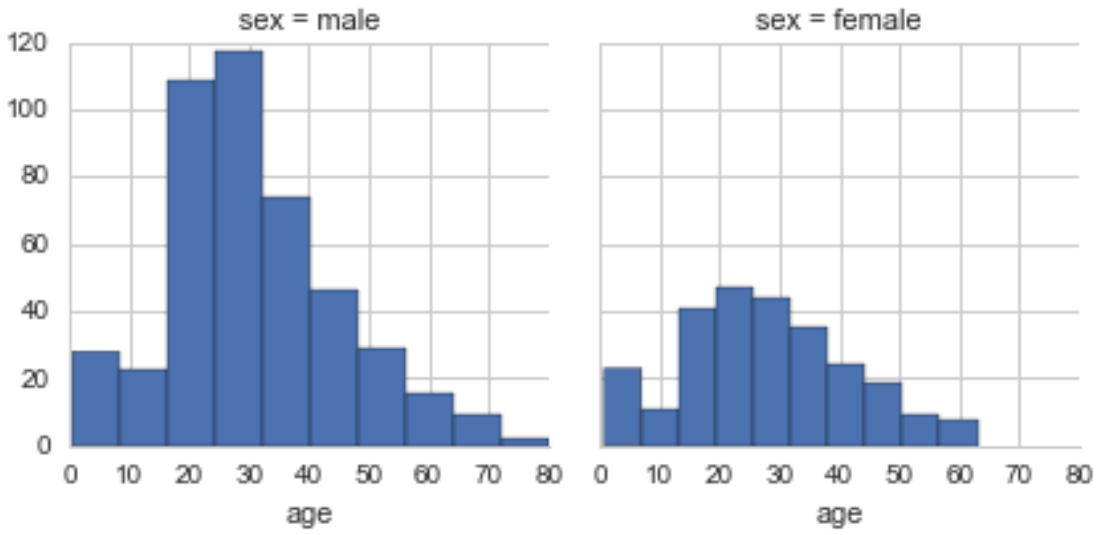
[13]:
```
g = sns.FacetGrid(titanic, col='sex')
g.map(plt.hist, 'age')
```

[13]: <seaborn.axisgrid.FacetGrid at 0x131ac3610>



[49]:

[49]: <seaborn.axisgrid.FacetGrid at 0x11d81c240>



3 Great Job!

[ ]: