Data Visualization I

May 3, 2022

[1]:
```
import seaborn as sb
import numpy as np
```

[2]:
```
data = sb.load_dataset('titanic')
```

[3]:
```
data
```

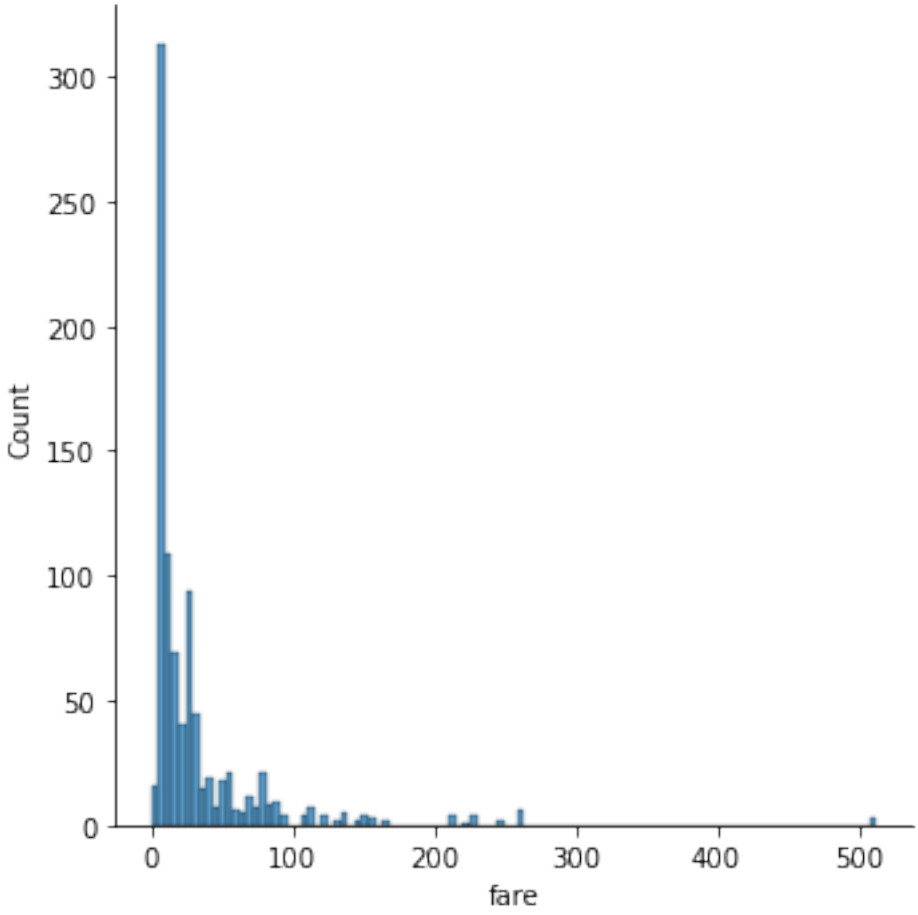
[3]:
```
     survived  pclass     sex   age  sibsp  parch     fare embarked   class  \
0           0       3    male  22.0      1      0   7.2500        S   Third
1           1       1  female  38.0      1      0  71.2833        C   First
2           1       3  female  26.0      0      0   7.9250        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
..        ...     ...     ...   ...    ...    ...      ...      ...     ...
886         0       2    male  27.0      0      0  13.0000        S  Second
887         1       1  female  19.0      0      0  30.0000        S   First
888         0       3  female   NaN      1      2  23.4500        S   Third
889         1       1    male  26.0      0      0  30.0000        C   First
890         0       3    male  32.0      0      0   7.7500        Q   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
..     ...         ...  ...          ...   ...    ...
886    man        True  NaN  Southampton    no   True
887  woman       False    B  Southampton   yes   True
888  woman       False  NaN  Southampton    no  False
889    man        True    C    Cherbourg   yes   True
890    man        True  NaN   Queenstown    no   True

[891 rows x 15 columns]
```

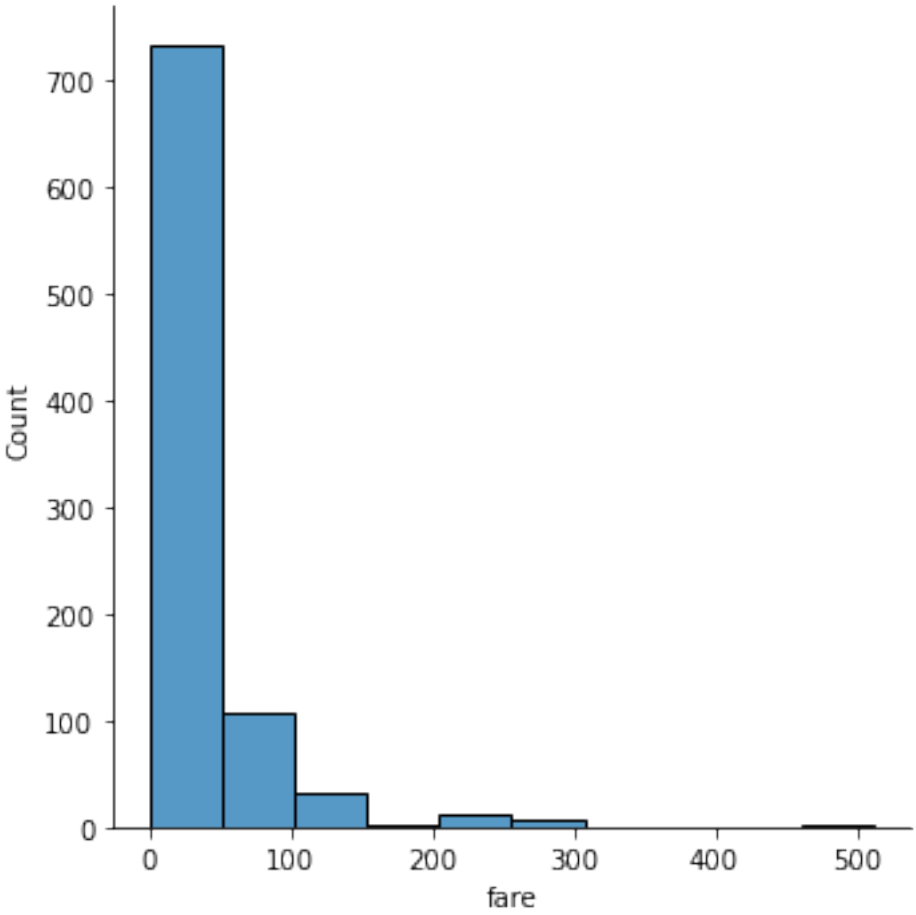
[4]:
```
sb.displot(data['fare'])
```

[4]: <seaborn.axisgrid.FacetGrid at 0x1ef049e2460>



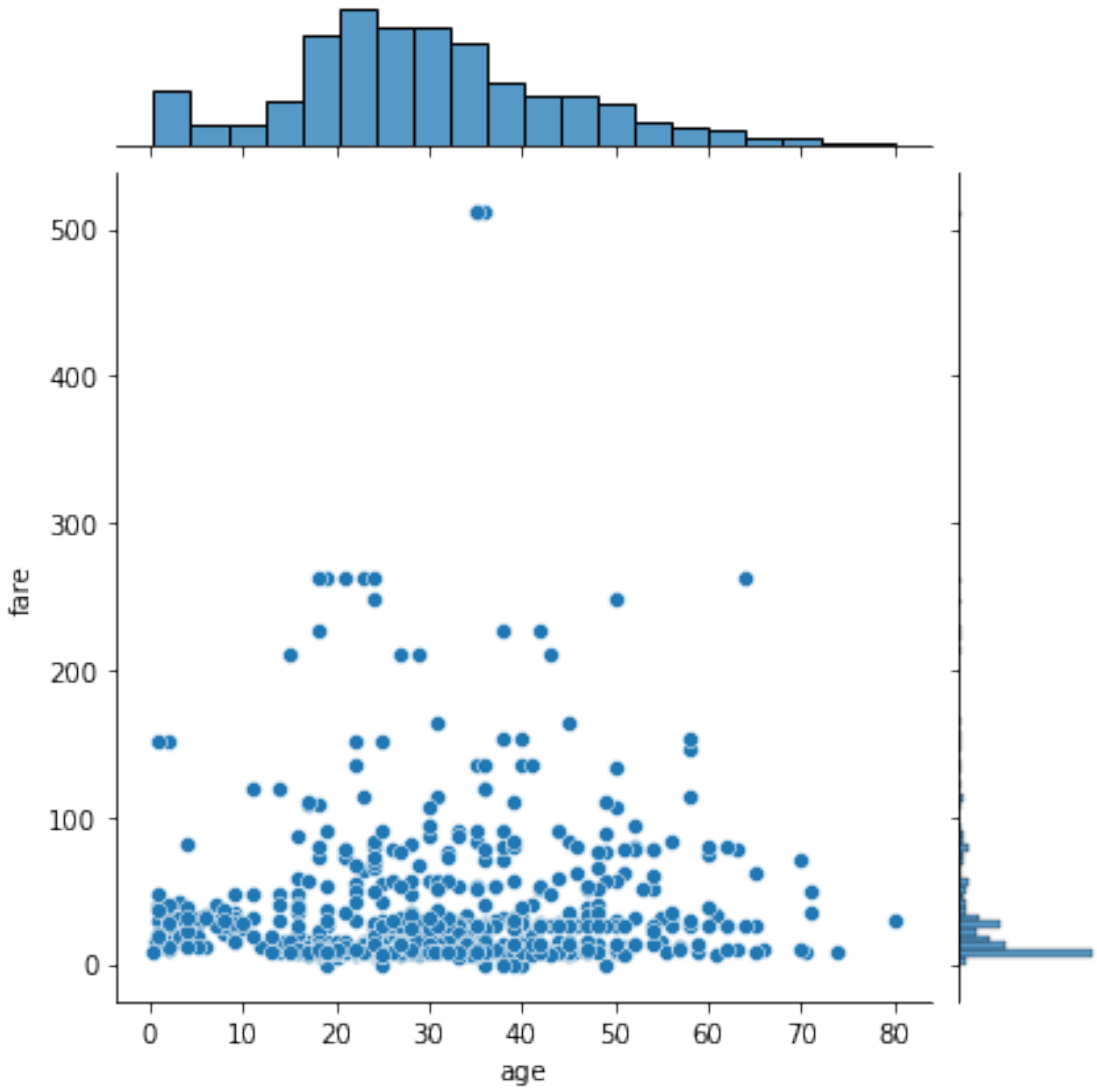
[5]:
```
sb.displot(data['fare'],kde=False,bins=10)
```

[5]: <seaborn.axisgrid.FacetGrid at 0x1ef05342970>



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

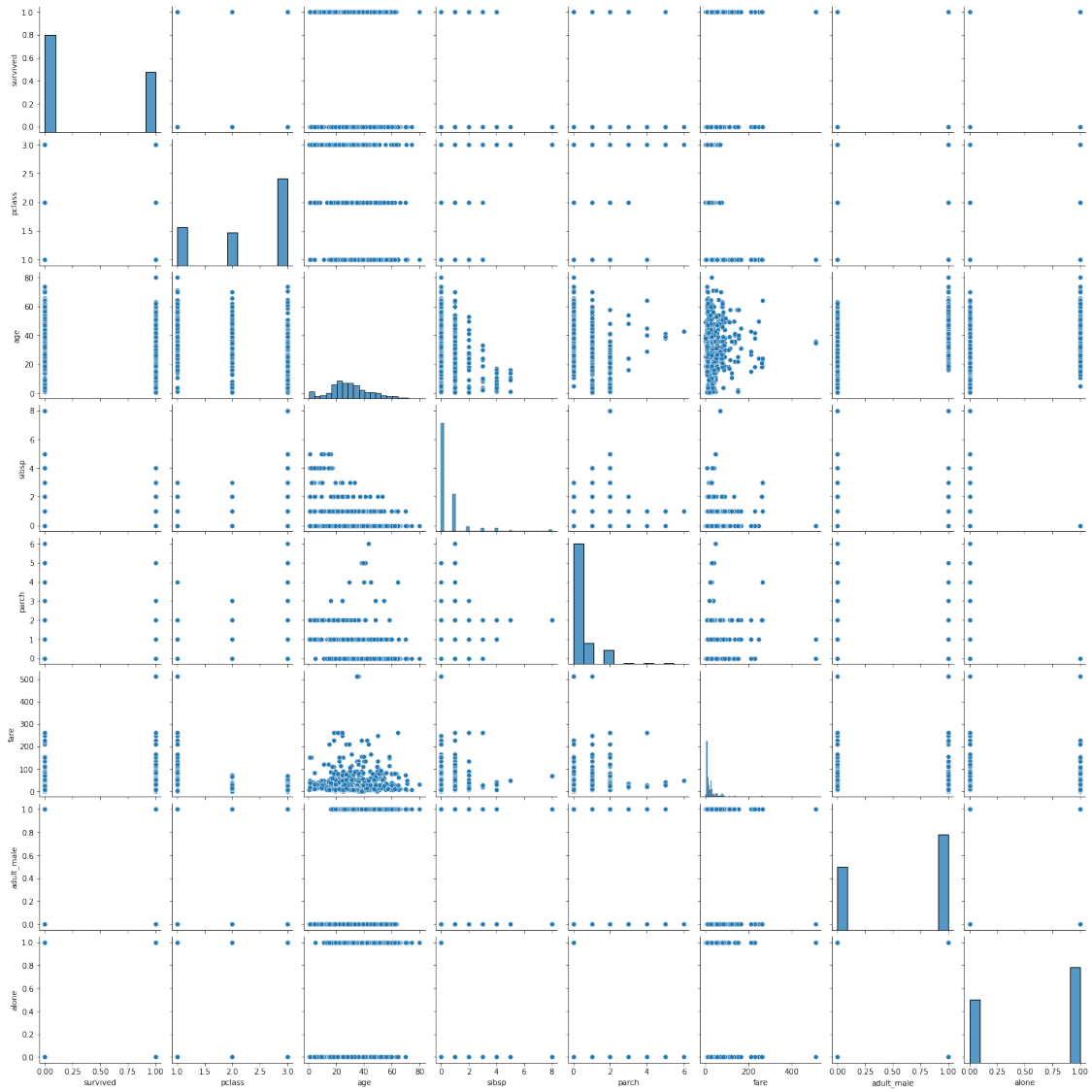
[6]: <seaborn.axisgrid.JointGrid at 0x1ef053bd760>



[7]:
```
sb.pairplot(data)
```

```
<__array_function__ internals>:5: RuntimeWarning: Converting input from bool to
<class 'numpy.uint8'> for compatibility.
<__array_function__ internals>:5: RuntimeWarning: Converting input from bool to
<class 'numpy.uint8'> for compatibility.
<__array_function__ internals>:5: RuntimeWarning: Converting input from bool to
<class 'numpy.uint8'> for compatibility.
<__array_function__ internals>:5: RuntimeWarning: Converting input from bool to
<class 'numpy.uint8'> for compatibility.
```

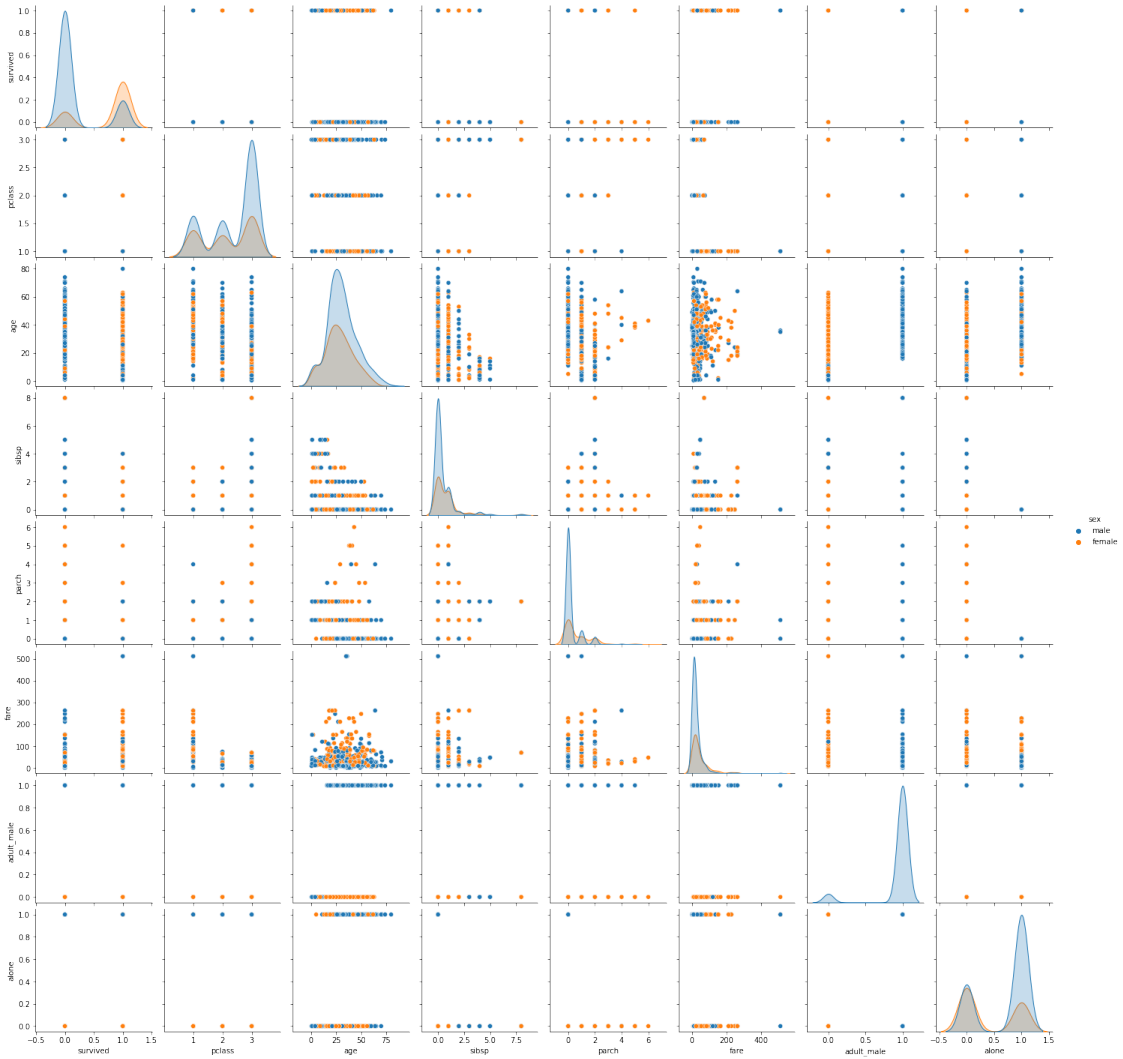
[7]:
```
<seaborn.axisgrid.PairGrid at 0x1ef054eed00>
```



[8]:
```
sb.pairplot(data,hue='sex')
```

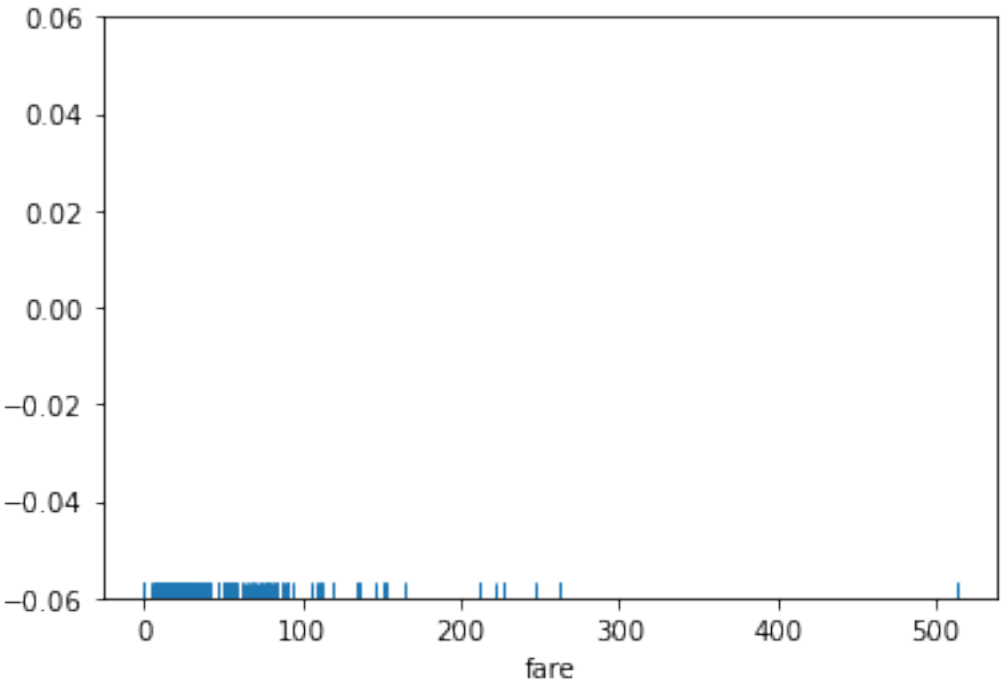
```
C:\Users\abc\anaconda3\lib\site-packages\seaborn\distributions.py:306:
UserWarning: Dataset has 0 variance; skipping density estimate.
  warnings.warn(msg, UserWarning)
```

[8]: <seaborn.axisgrid.PairGrid at 0x1ef0708be20>



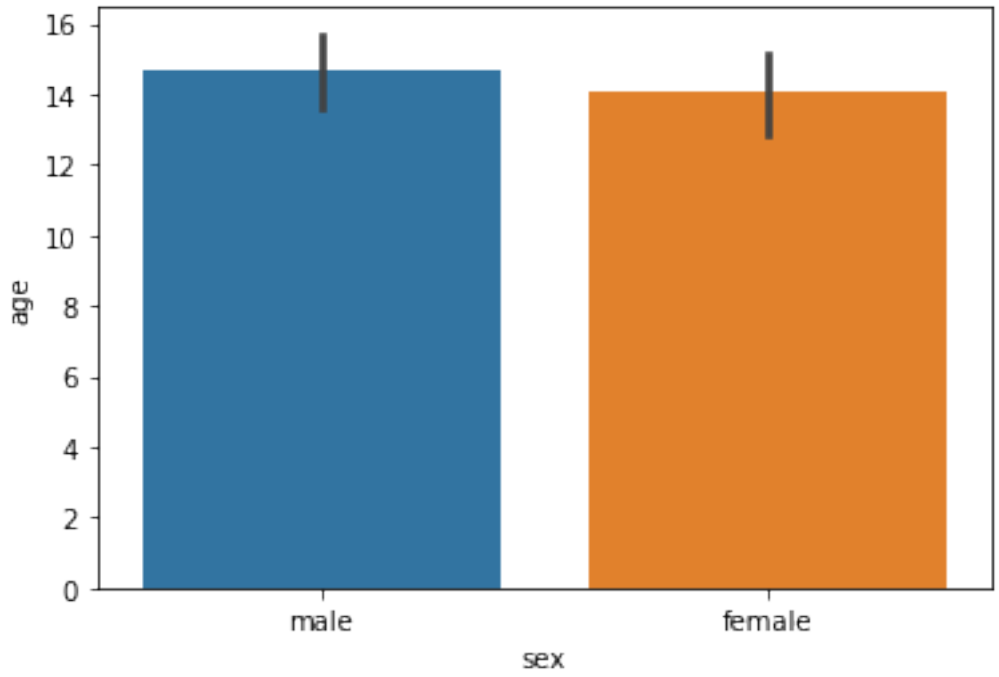
[9]:
```
sb.rugplot(data['fare'])
```

[9]: <AxesSubplot:xlabel='fare'>



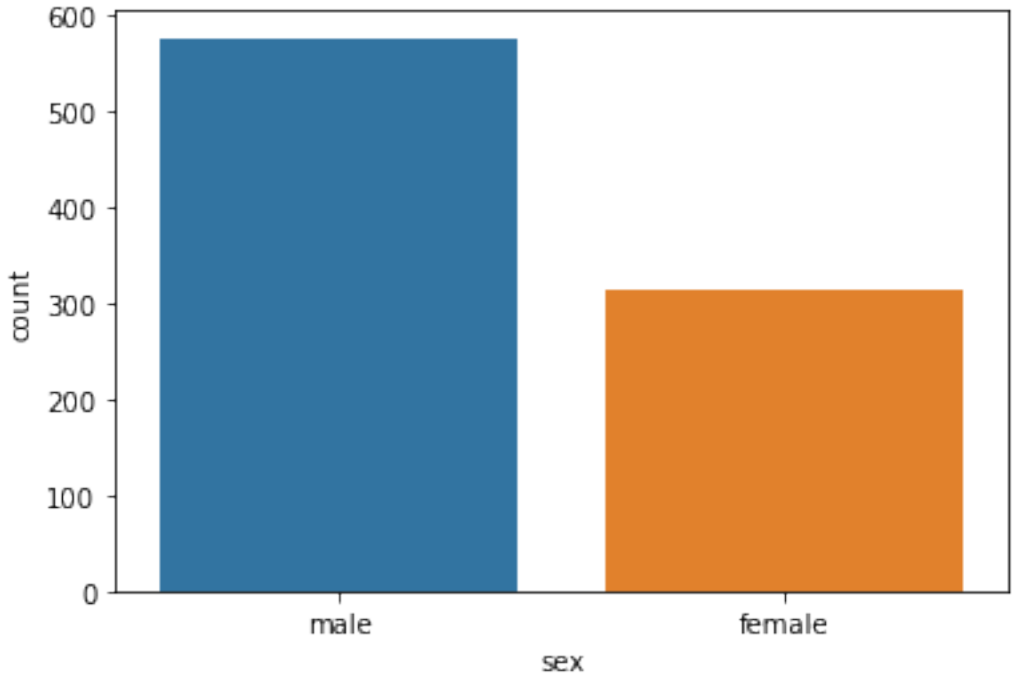
[10]:
```
sb.barplot(x='sex',y='age',data=data,estimator=np.std)
```

[10]: <AxesSubplot:xlabel='sex', ylabel='age'>



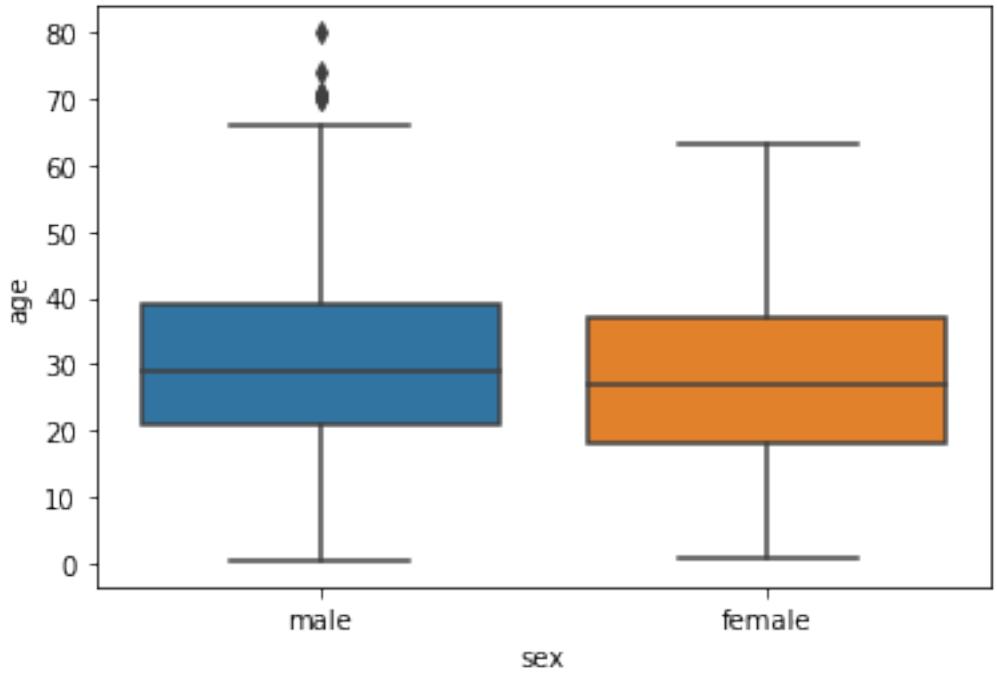
[11]:
```
sb.countplot(x='sex',data=data)
```

[11]: <AxesSubplot:xlabel='sex', ylabel='count'>



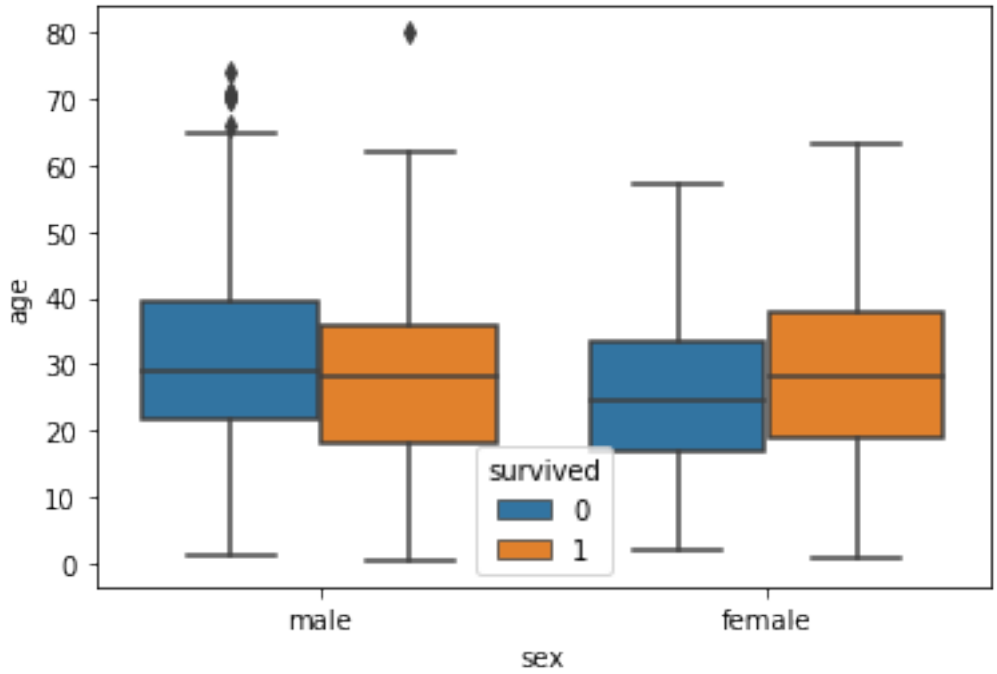
[12]:
```
sb.boxplot(x='sex',y='age',data=data)
```

[12]: <AxesSubplot:xlabel='sex', ylabel='age'>



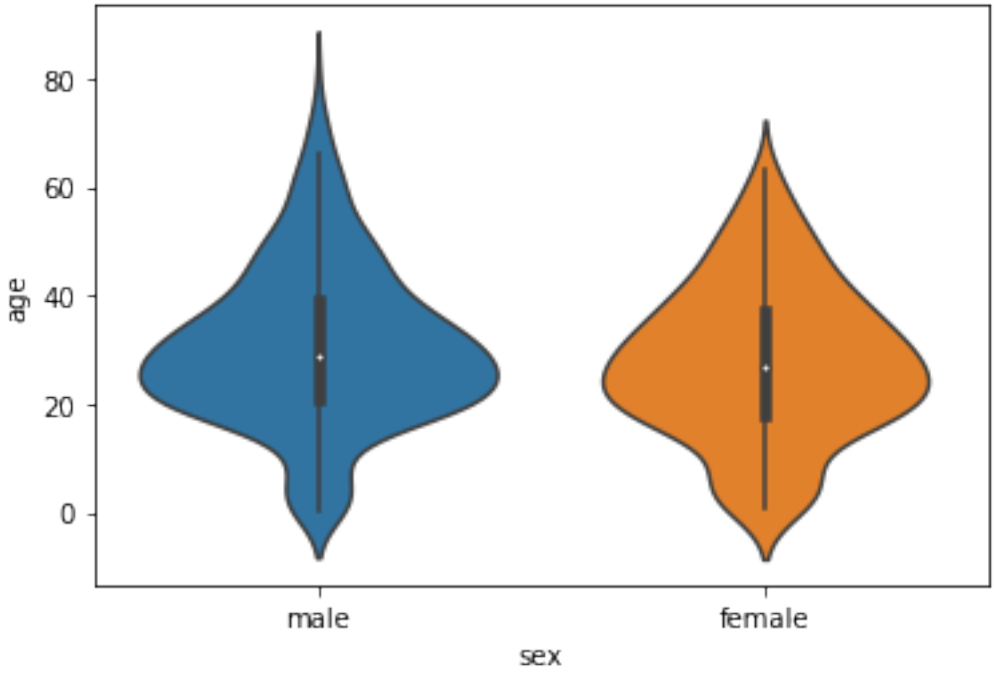
[13]:
```
sb.boxplot(x='sex',y='age',data=data,hue='survived')
```

[13]: <AxesSubplot:xlabel='sex', ylabel='age'>



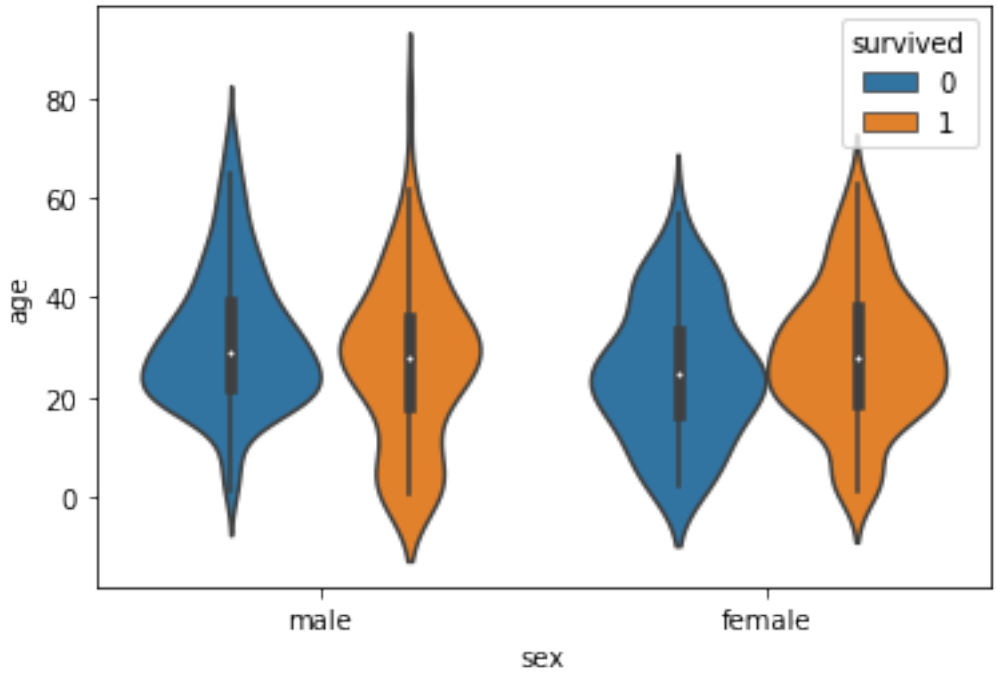
[14]:
```
sb.violinplot(x='sex',y='age',data=data)
```

[14]: <AxesSubplot:xlabel='sex', ylabel='age'>



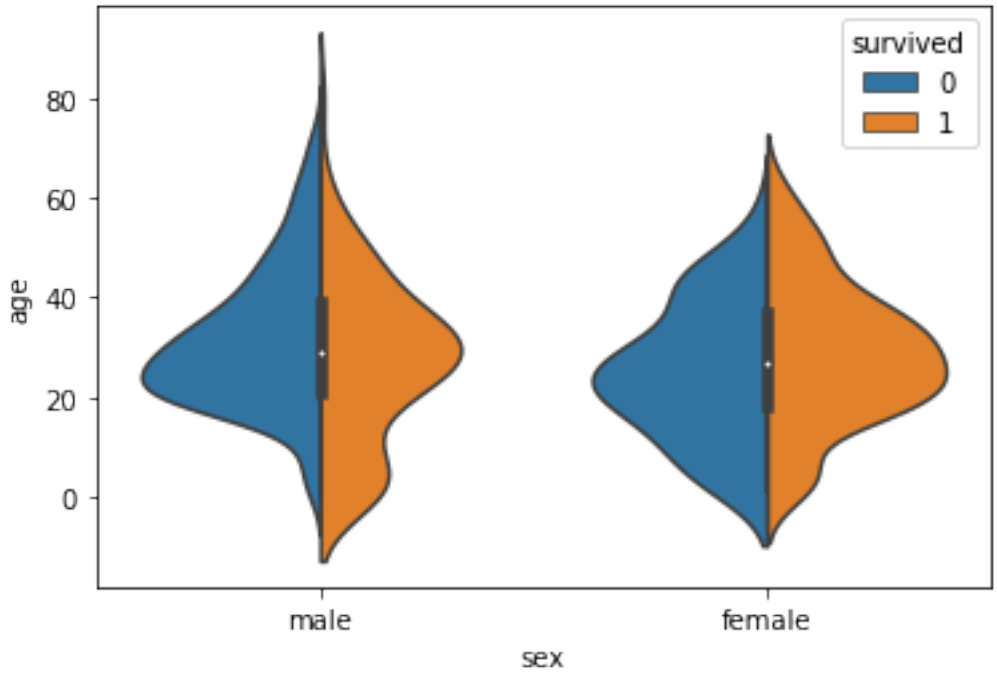
[15]:
```
sb.violinplot(x='sex',y='age',data=data,hue='survived')
```

[15]: <AxesSubplot:xlabel='sex', ylabel='age'>



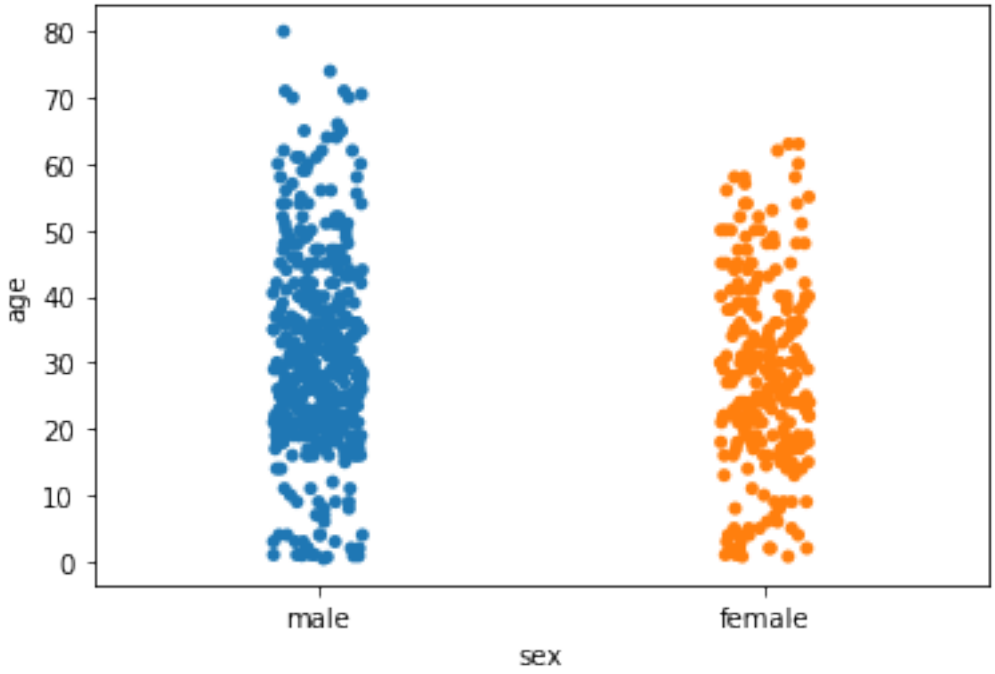
[16]:
```
sb.violinplot(x='sex',y='age',data=data,hue='survived',split=True)
```

[16]: <AxesSubplot:xlabel='sex', ylabel='age'>



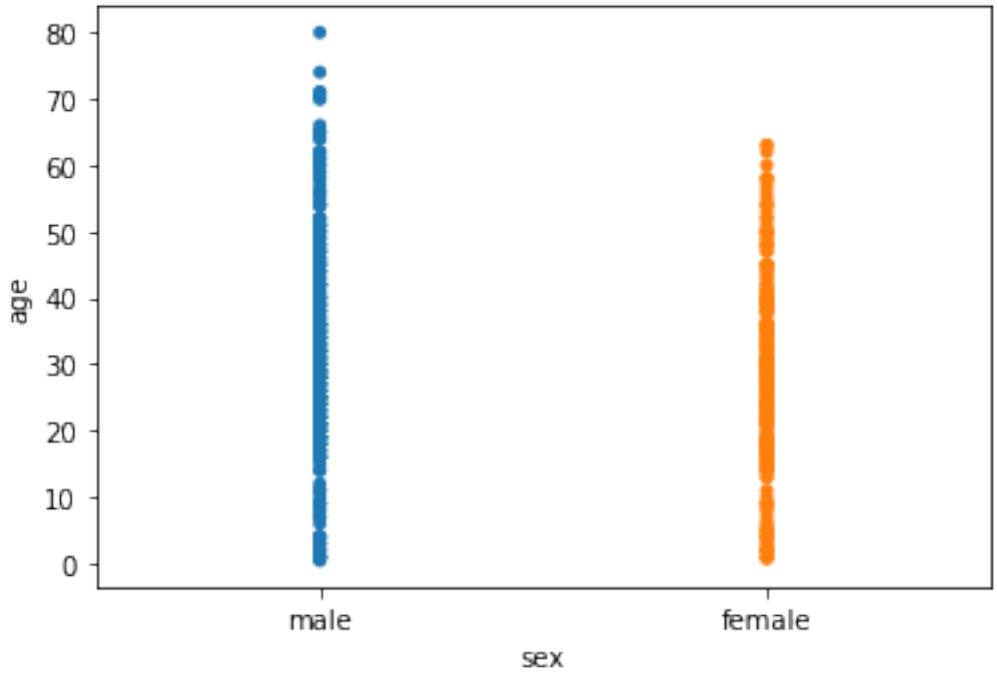
[17]:
```
sb.stripplot(x='sex',y='age',data=data)
```

[17]: <AxesSubplot:xlabel='sex', ylabel='age'>



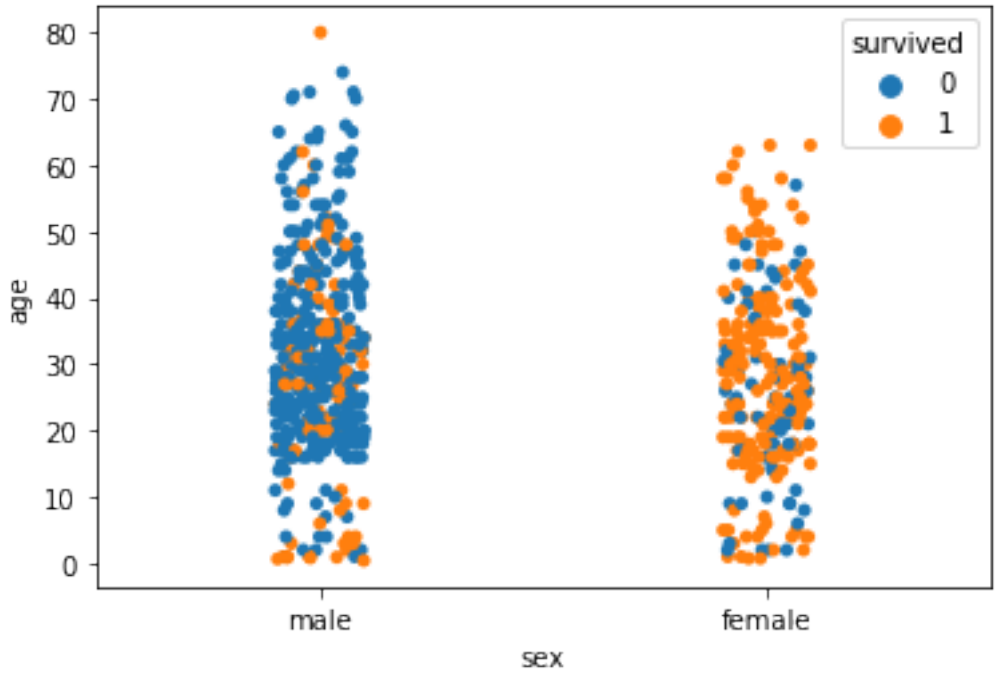
[18]:
```
sb.stripplot(x='sex',y='age',data=data,jitter=False)
```

[18]: <AxesSubplot:xlabel='sex', ylabel='age'>



[19]:
```
sb.stripplot(x='sex',y='age',data=data,hue='survived')
```

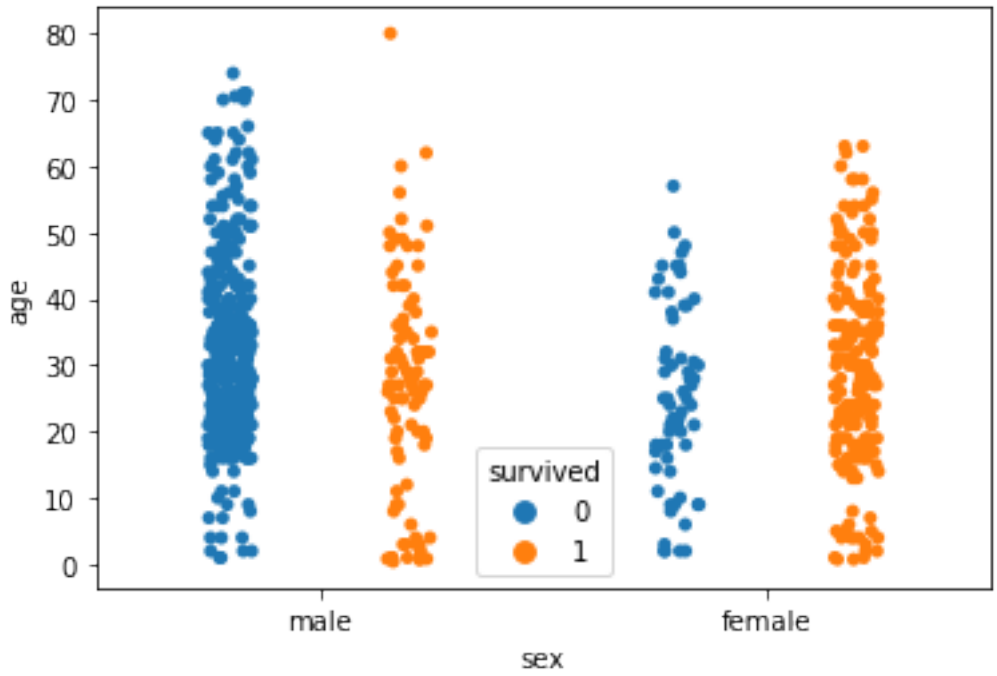
[19]: <AxesSubplot:xlabel='sex', ylabel='age'>



[20]:
```
sb.stripplot(x='sex',y='age',data=data,hue='survived',split=True)
```

```
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:2802:
UserWarning: The `split` parameter has been renamed to `dodge`.
  warnings.warn(msg, UserWarning)
```

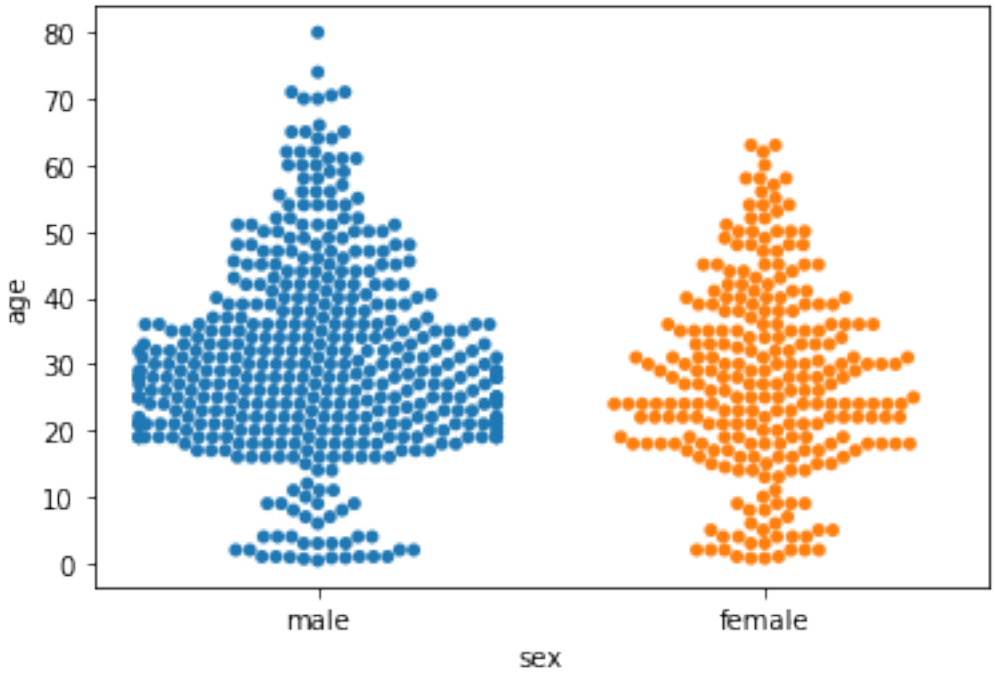
[20]: <AxesSubplot:xlabel='sex', ylabel='age'>



[21]:
```
sb.swarmplot(x='sex',y='age',data=data)
```

```
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:1296:
UserWarning: 5.9% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```

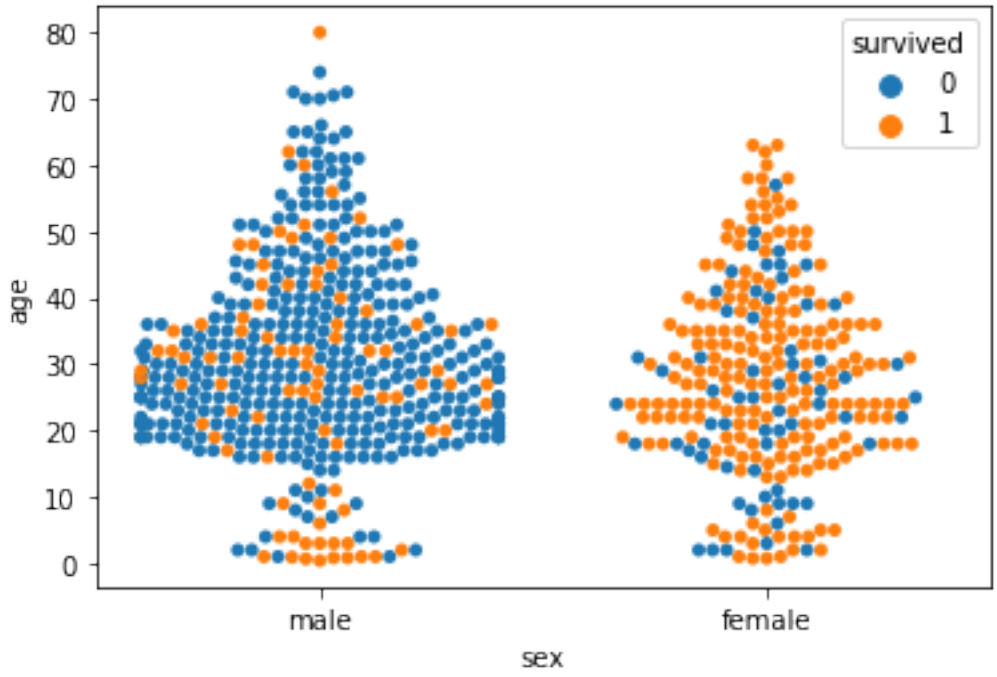
[21]: <AxesSubplot:xlabel='sex', ylabel='age'>



[22]:
```
sb.swarmplot(x='sex',y='age',data=data,hue='survived')
```

```
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:1296:
UserWarning: 5.9% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```

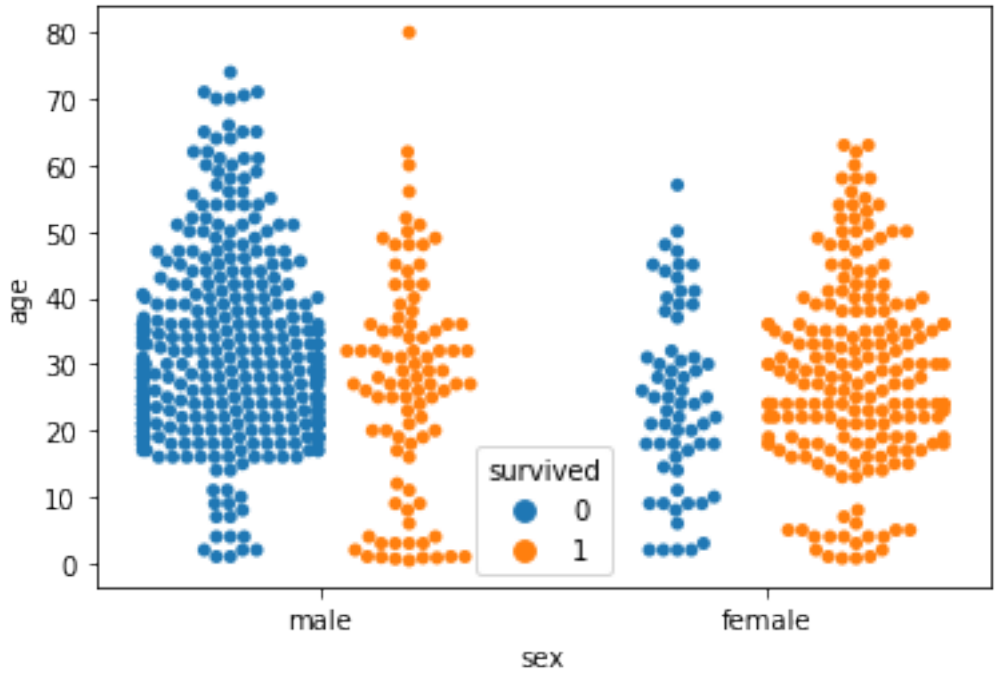
[22]:
```
<AxesSubplot:xlabel='sex', ylabel='age'>
```



[23]:
```
sb.swarmplot(x='sex',y='age',data=data,hue='survived',split=True)
```

```
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:2999:
UserWarning: The `split` parameter has been renamed to `dodge`.
  warnings.warn(msg, UserWarning)
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:1296:
UserWarning: 21.6% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:1296:
UserWarning: 7.7% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```

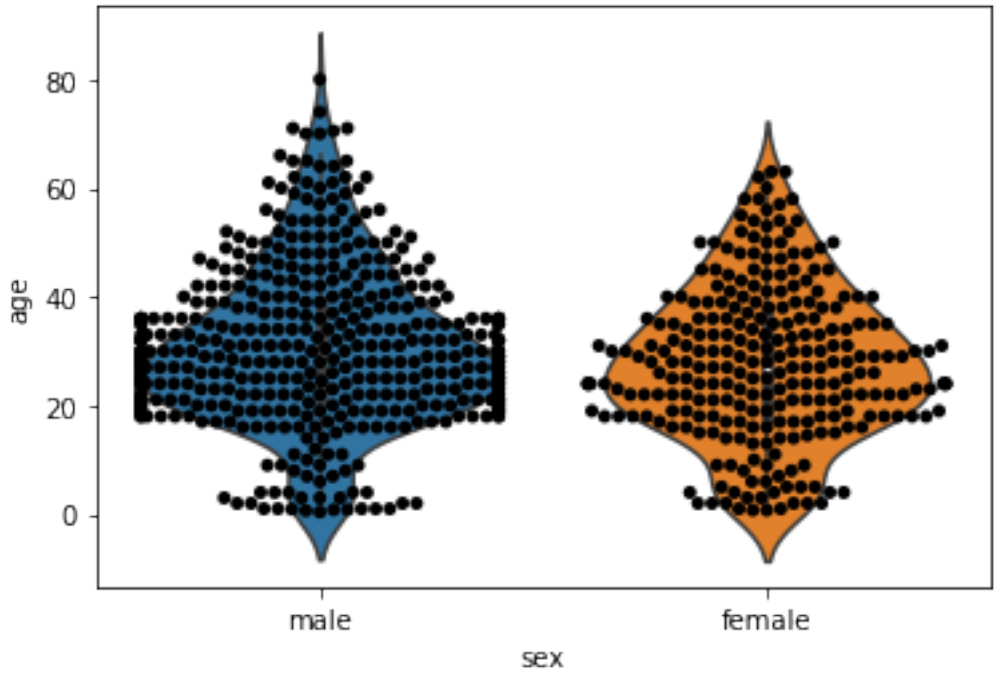
[23]:
```
<AxesSubplot:xlabel='sex', ylabel='age'>
```



[24]:
```
sb.violinplot(x='sex',y='age',data=data)
sb.swarmplot(x='sex',y='age',data=data,color='black')
```

```
C:\Users\abc\anaconda3\lib\site-packages\seaborn\categorical.py:1296:
UserWarning: 16.6% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```

[24]:
```
<AxesSubplot:xlabel='sex', ylabel='age'>
```


80
60
40
20
0
age
male
female
sex