In [1]:
```
# ignore warnings
import warnings
# set the warninig filter to ignore futurewarning
warnings.simplefilter(action="ignore",category=FutureWarning)
```

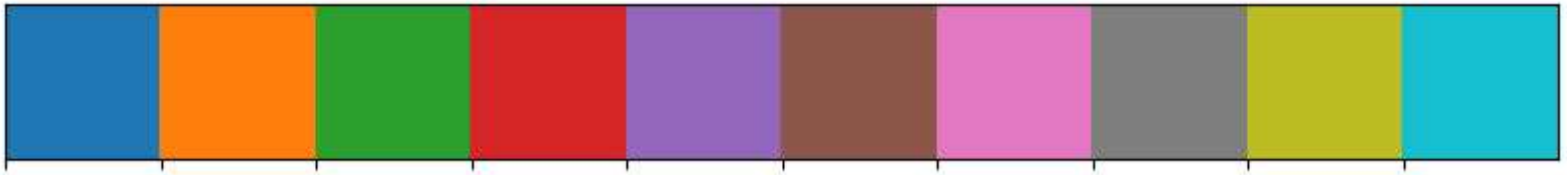
In [2]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

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

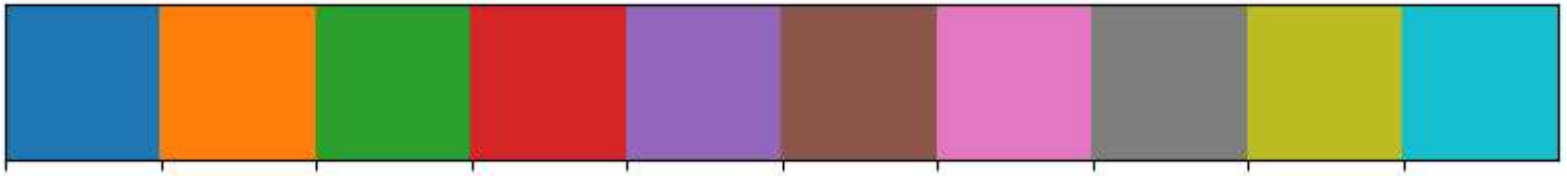
Out[3]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	deck	embark_town	alive	alone
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True	NaN	Southampton	no	False
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False	C	Cherbourg	yes	False
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False	NaN	Southampton	yes	True
3	1	1	female	35.0	1	0	53.1000	S	First	woman	False	C	Southampton	yes	False
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True	NaN	Southampton	no	True
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
886	0	2	male	27.0	0	0	13.0000	S	Second	man	True	NaN	Southampton	no	True
887	1	1	female	19.0	0	0	30.0000	S	First	woman	False	B	Southampton	yes	True
888	0	3	female	NaN	1	2	23.4500	S	Third	woman	False	NaN	Southampton	no	False
889	1	1	male	26.0	0	0	30.0000	C	First	man	True	C	Cherbourg	yes	True
890	0	3	male	32.0	0	0	7.7500	Q	Third	man	True	NaN	Queenstown	no	True

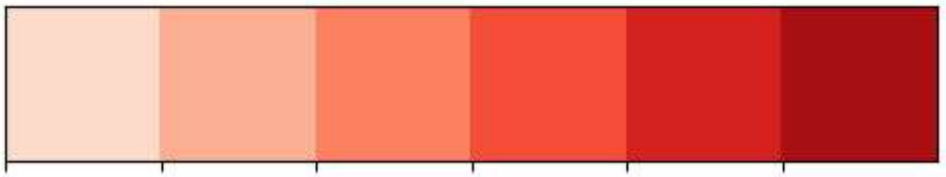
In [4]:
```
current_palette1=sns.color_palette()
sns.palplot(current_palette1)
plt.show()
```



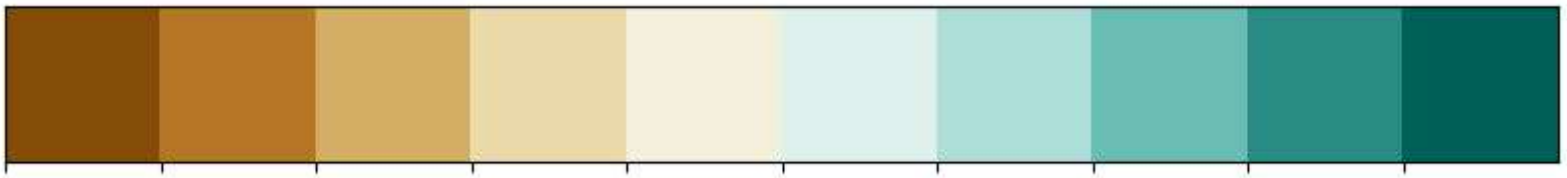
In [5]:
```
sns.palplot(sns.color_palette())
plt.show()
```



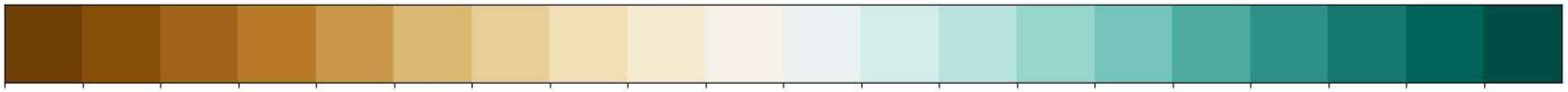
In [6]:
```
sns.palplot(sns.color_palette("Reds"))
plt.show()
```



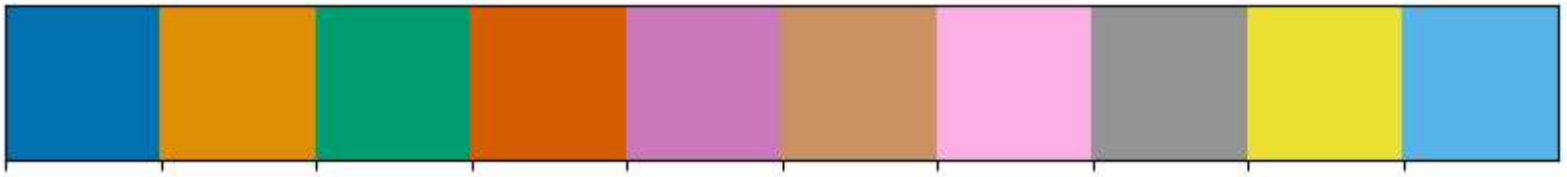
In [7]:
```
sns.palplot(sns.color_palette("BrBG",10))
plt.show()
```



In [8]:
```
1 sns.palplot(sns.color_palette("BrBG",20))
2 plt.show()
```



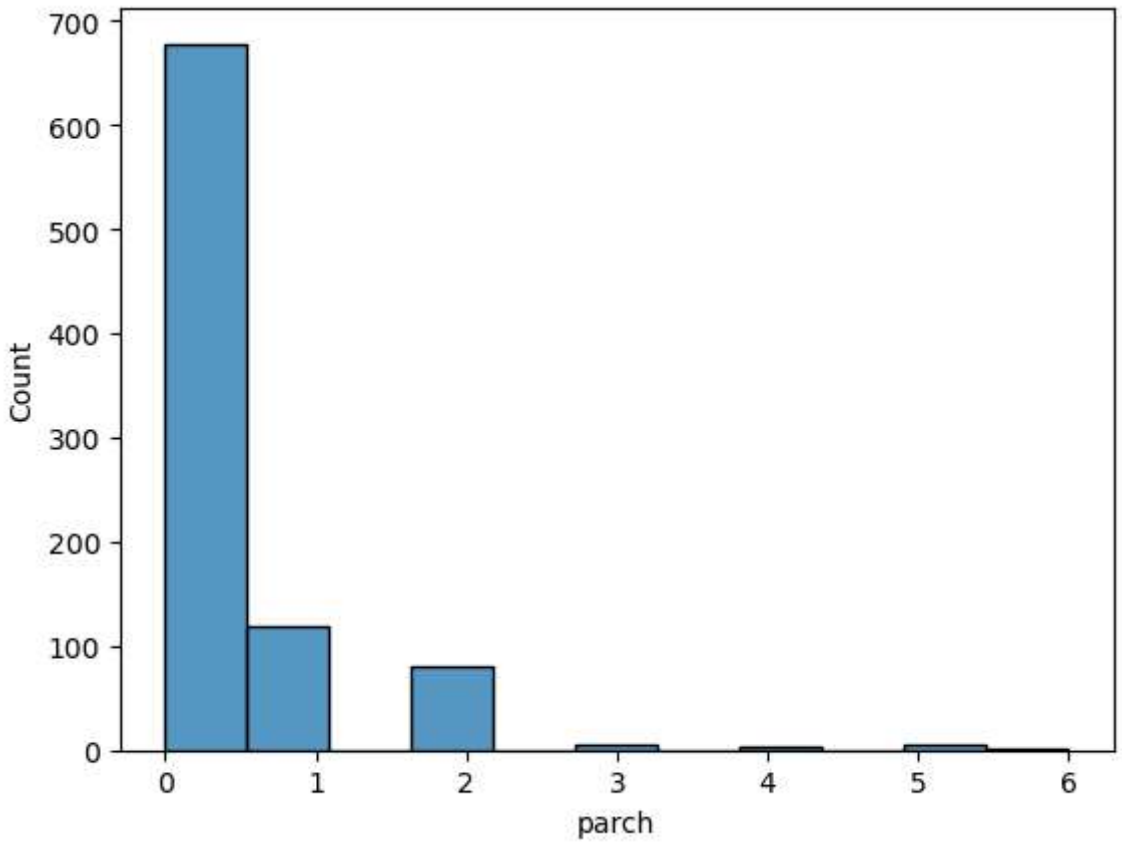
In [9]:
```
1 sns.palplot(sns.color_palette("colorblind"))
2 plt.show()
```



Displot

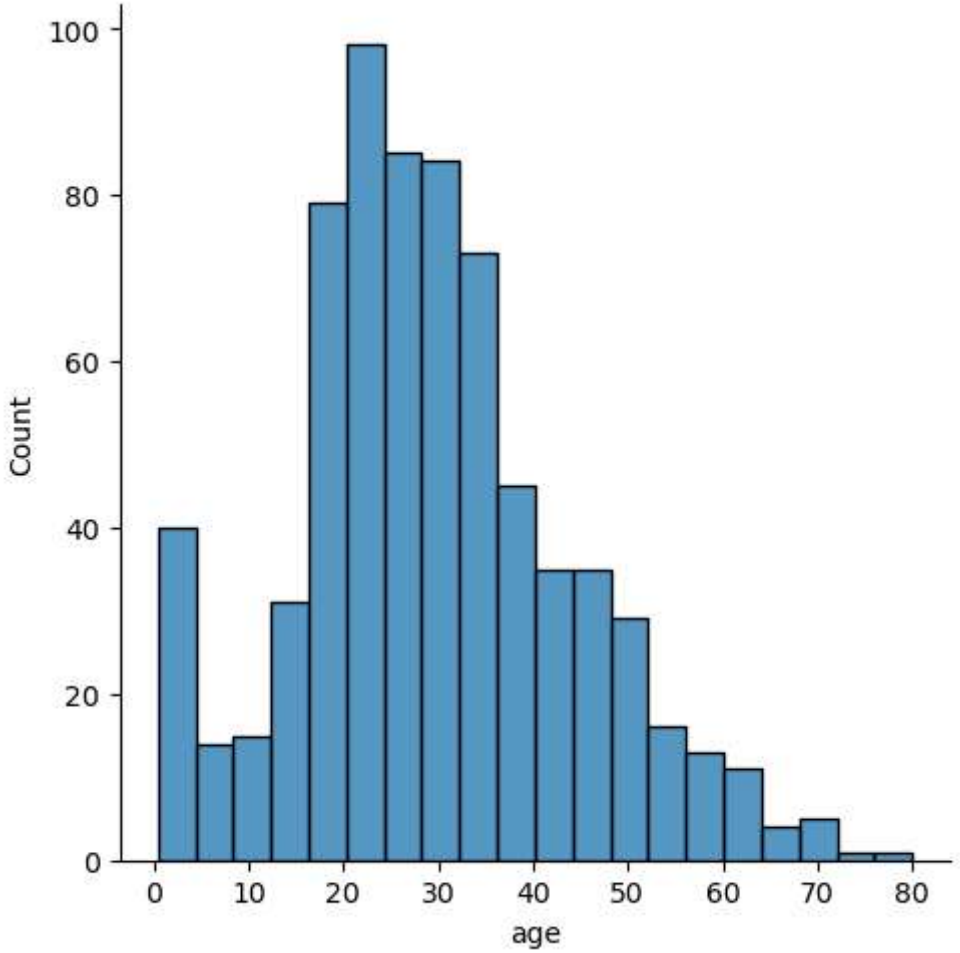
In [10]:

```
1 sns.histplot(df['parch'],kde=False)
2 plt.show()
```



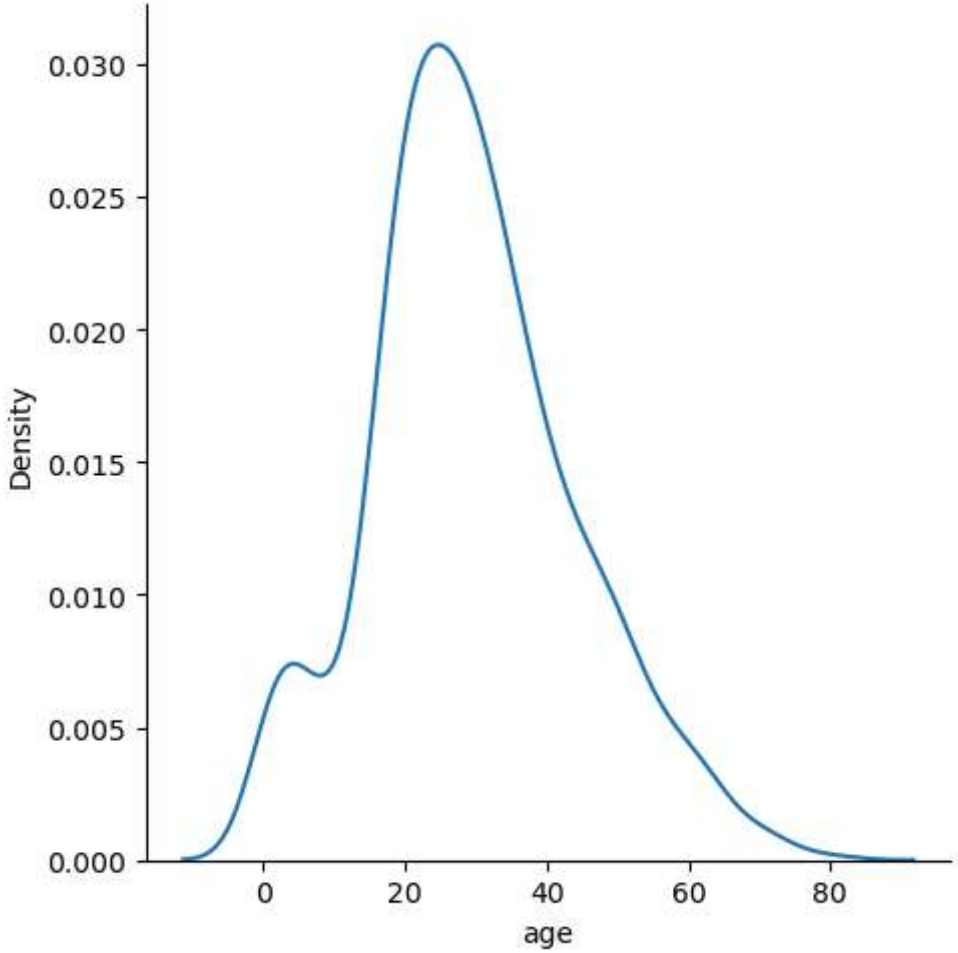
In [11]:

```
1 sns.displot(df['age'],)
2 plt.show()
```



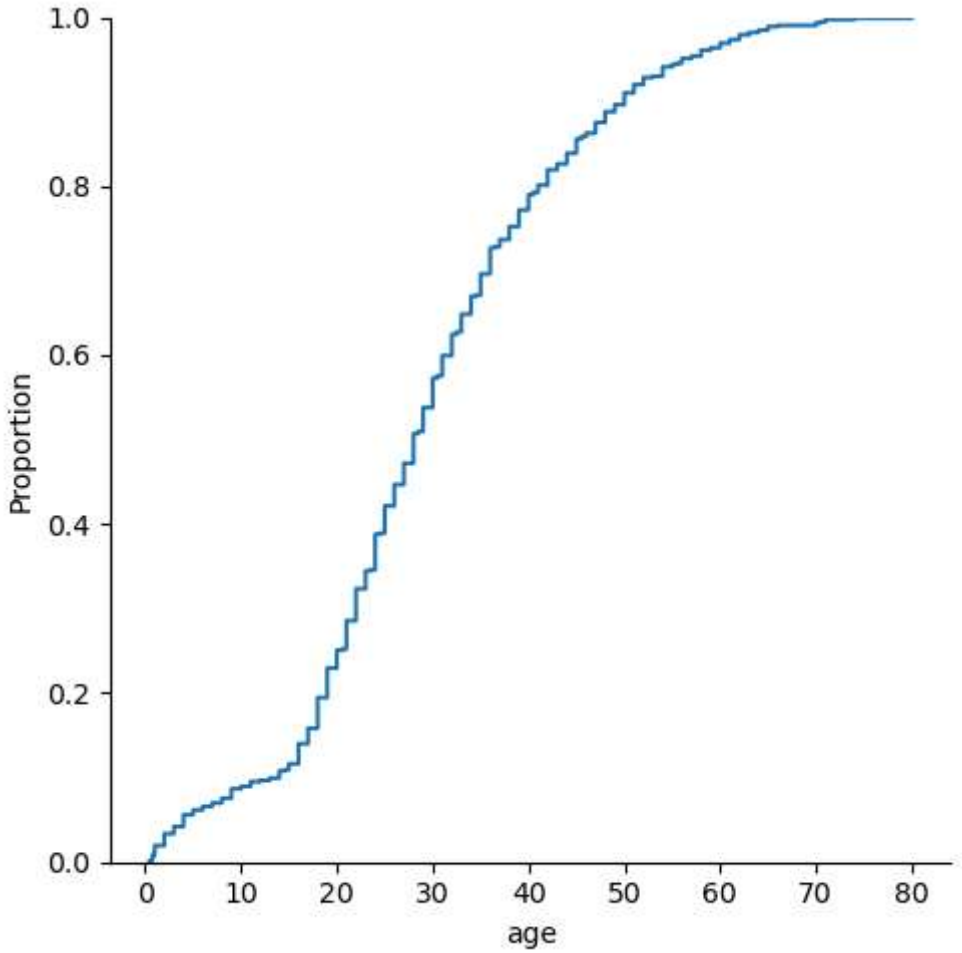
In [12]:

```
1 sns.displot(df['age'],kind="kde")
2 plt.show()
```



In [13]:

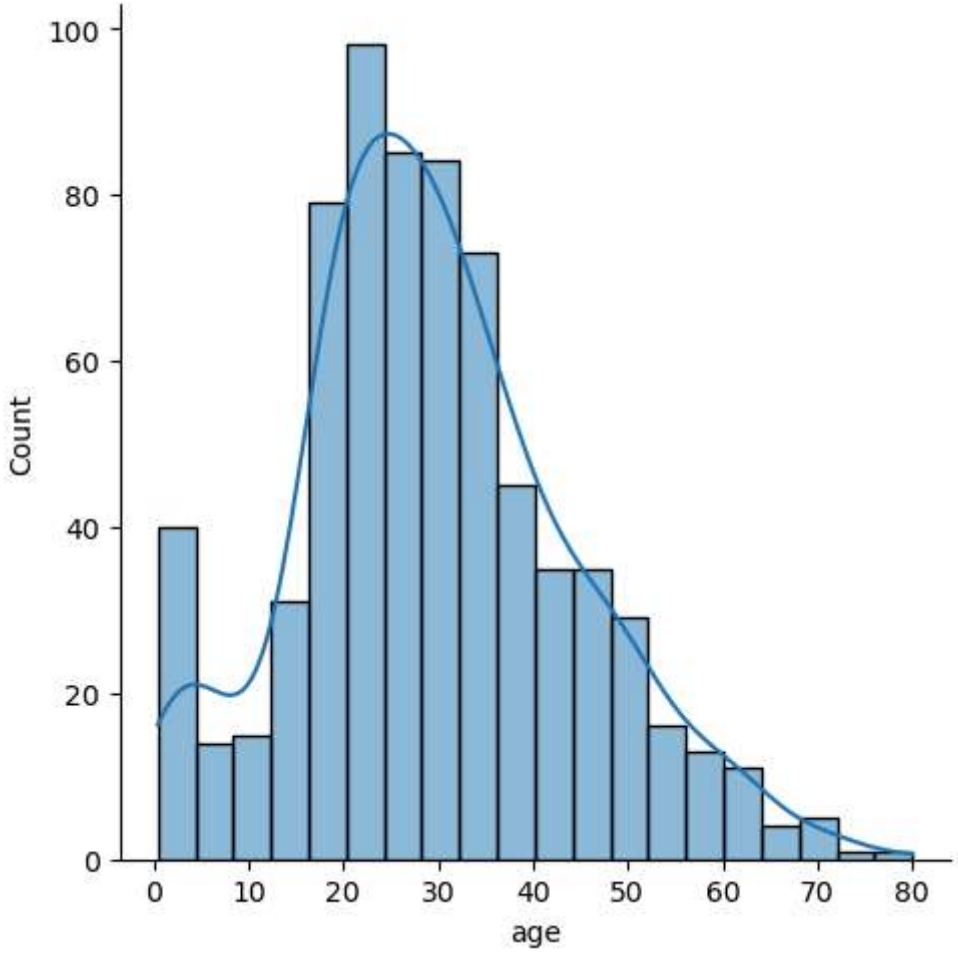
```
1 sns.displot(df['age'],kind="ecdf")
2 plt.show()
```



In [14]:

```
plt.figure(figsize=(15,15))
sns.displot(df['age'],kde=True)
plt.show()
```

```
<Figure size 1500x1500 with 0 Axes>
```



2# Relational plots

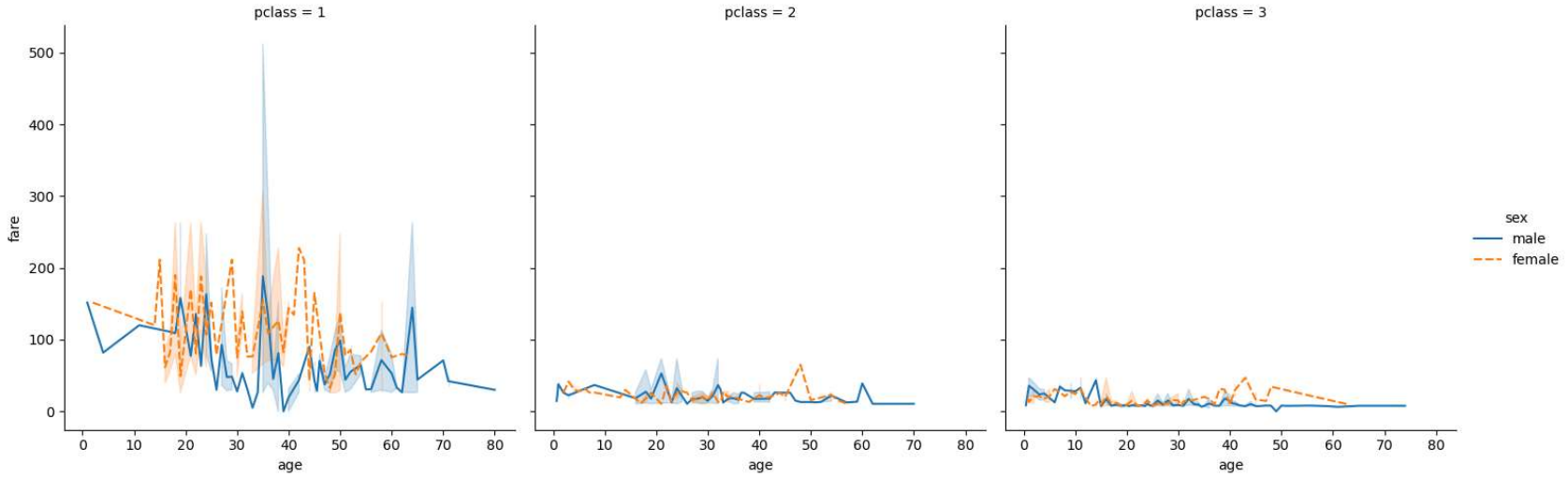
relplot()

In [15]:
```
1 df.head()
```

Out[15]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	deck	embark_town	alive	alone
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True	NaN	Southampton	no	False
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False	C	Cherbourg	yes	False
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False	NaN	Southampton	yes	True
3	1	1	female	35.0	1	0	53.1000	S	First	woman	False	C	Southampton	yes	False
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True	NaN	Southampton	no	True

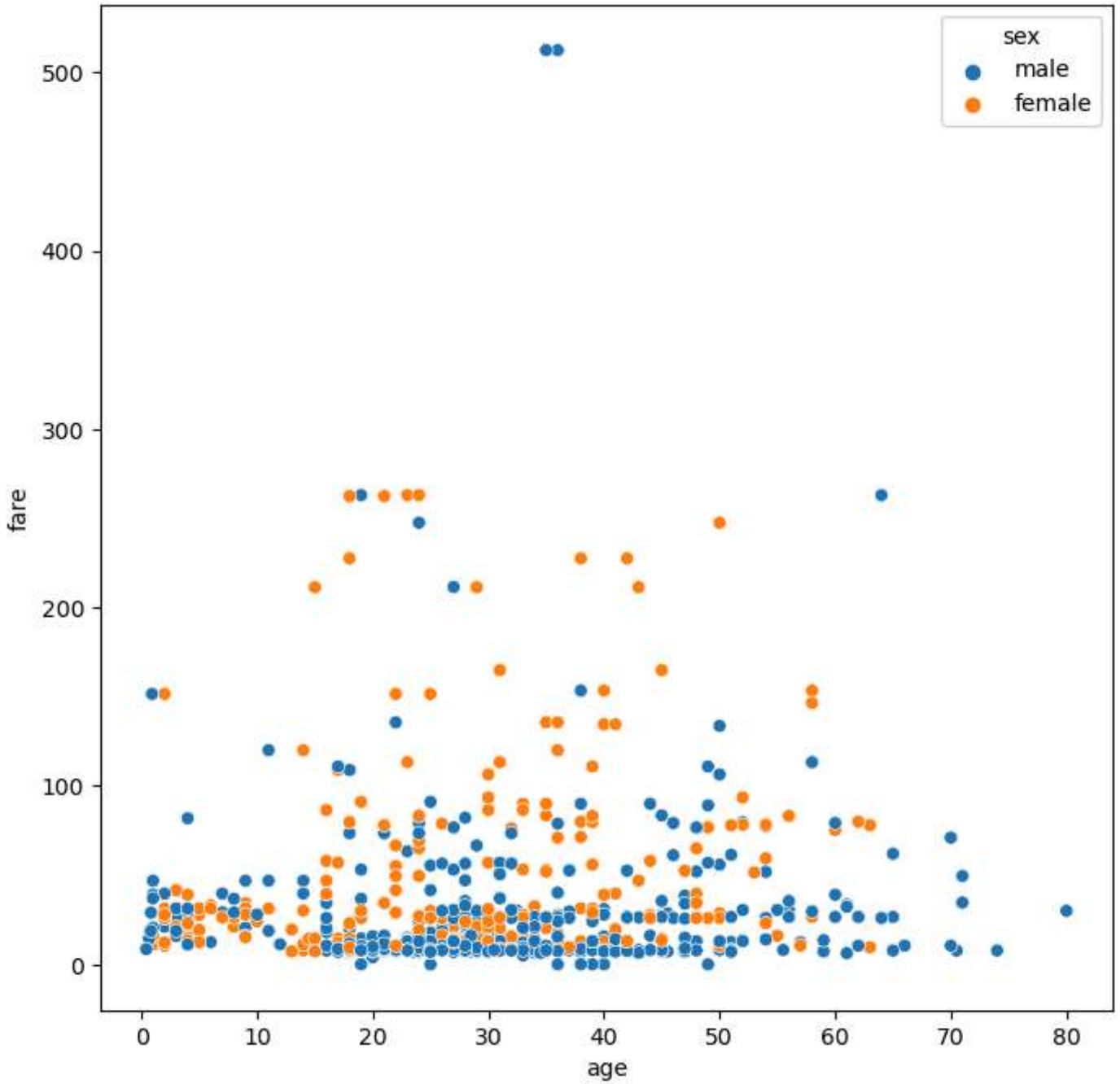
In [16]:
```
1 sns.relplot(x='age',y='fare',col='pclass',data=df,hue='sex',style='sex',kind='line')
2 plt.show()
```



scatter plot

In [17]:

```
plt.figure(figsize=(8,8))
sns.scatterplot(x='age',y='fare',hue='sex',data=df)
plt.show()
```

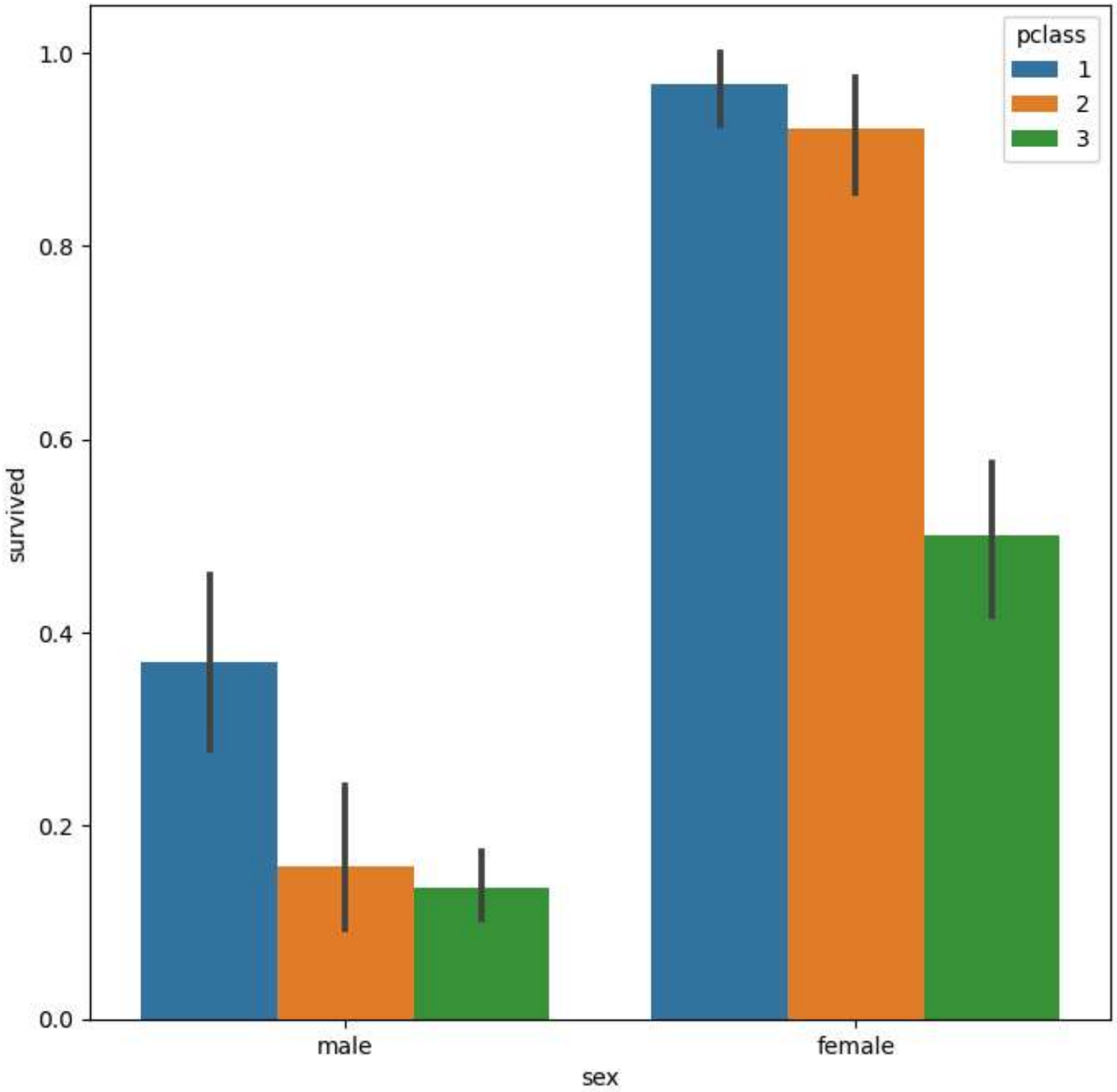

sex
male
female
500
400
300
200
100
0
fare
0
10
20
30
40
50
60
70
80
age

3 categorical plot

3.1 Barplot

In [18]:

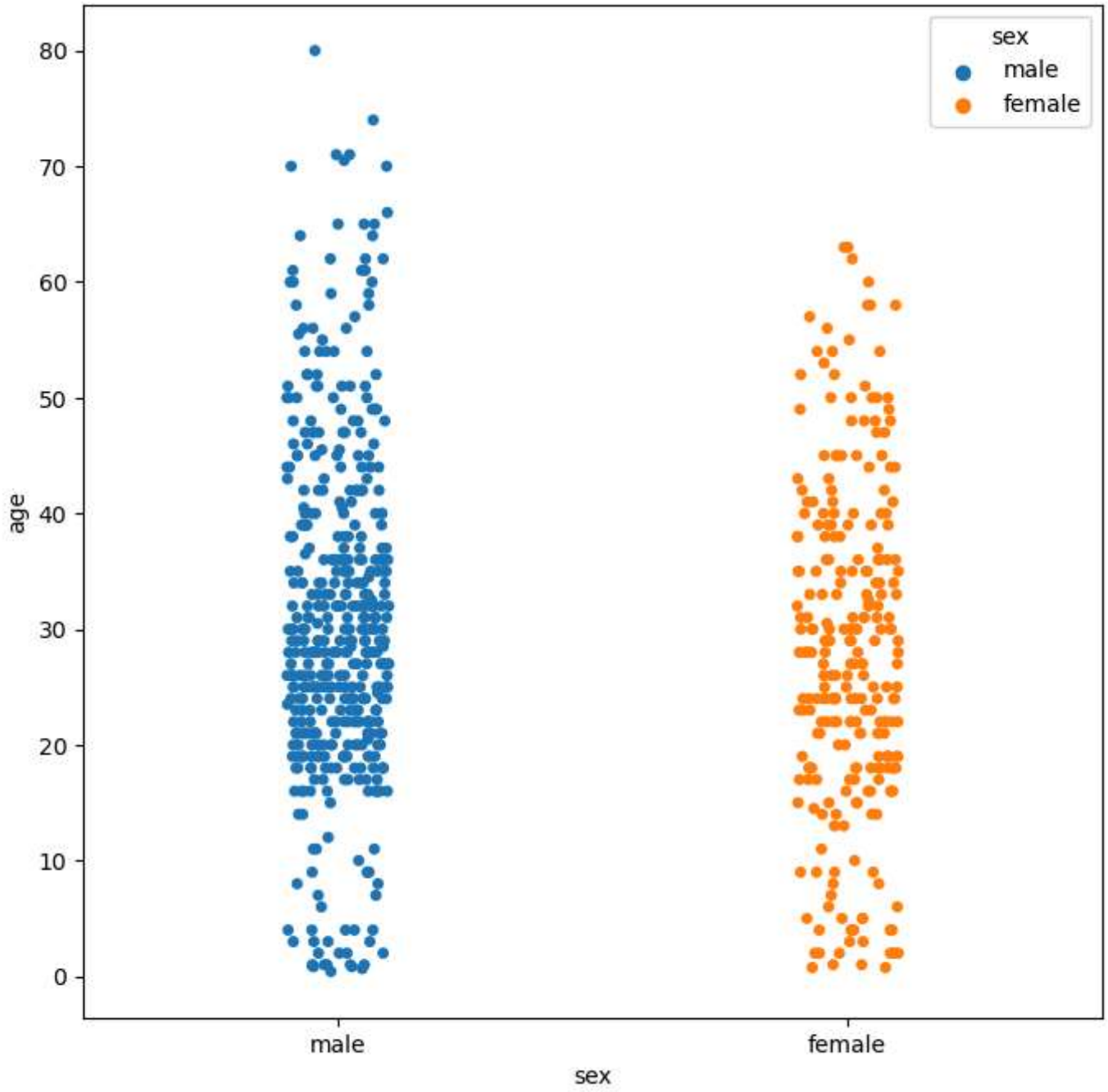
```
plt.figure(figsize=(8,8))
sns.barplot(x='sex',y='survived',hue='pclass',data=df)
plt.show()
```


pclass
1
2
3
1.0
0.8
0.6
0.4
0.2
0.0
survived
male
female
sex

3.2 stripplot

In [19]:

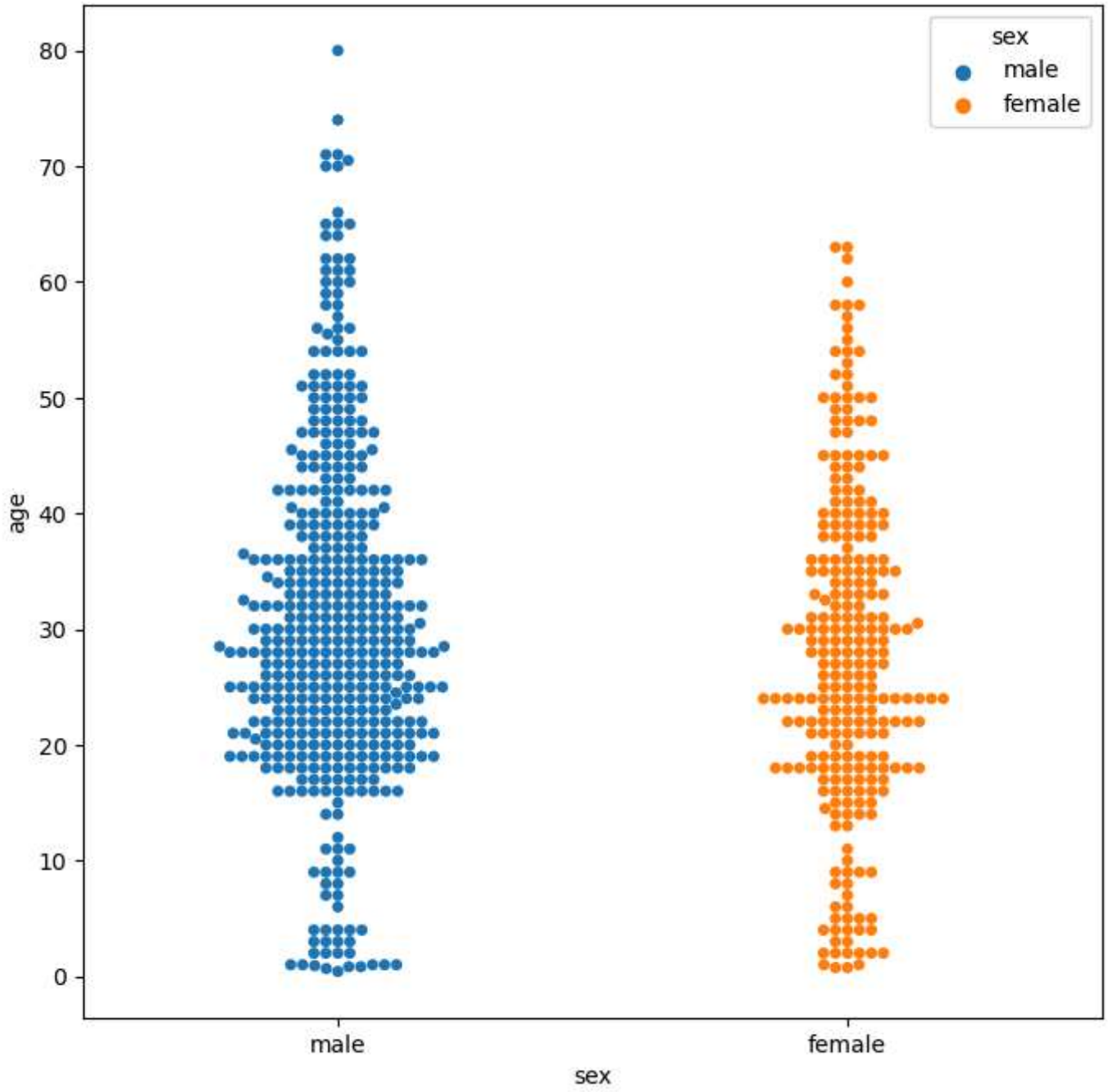
```
plt.figure(figsize=(8,8))
sns.stripplot(x='sex',y='age',hue='sex',data=df)
plt.show()
```


sex
male
female
80
70
60
50
40
30
20
10
0
age
male
female
sex

3.3 Swarmplot

In [20]:

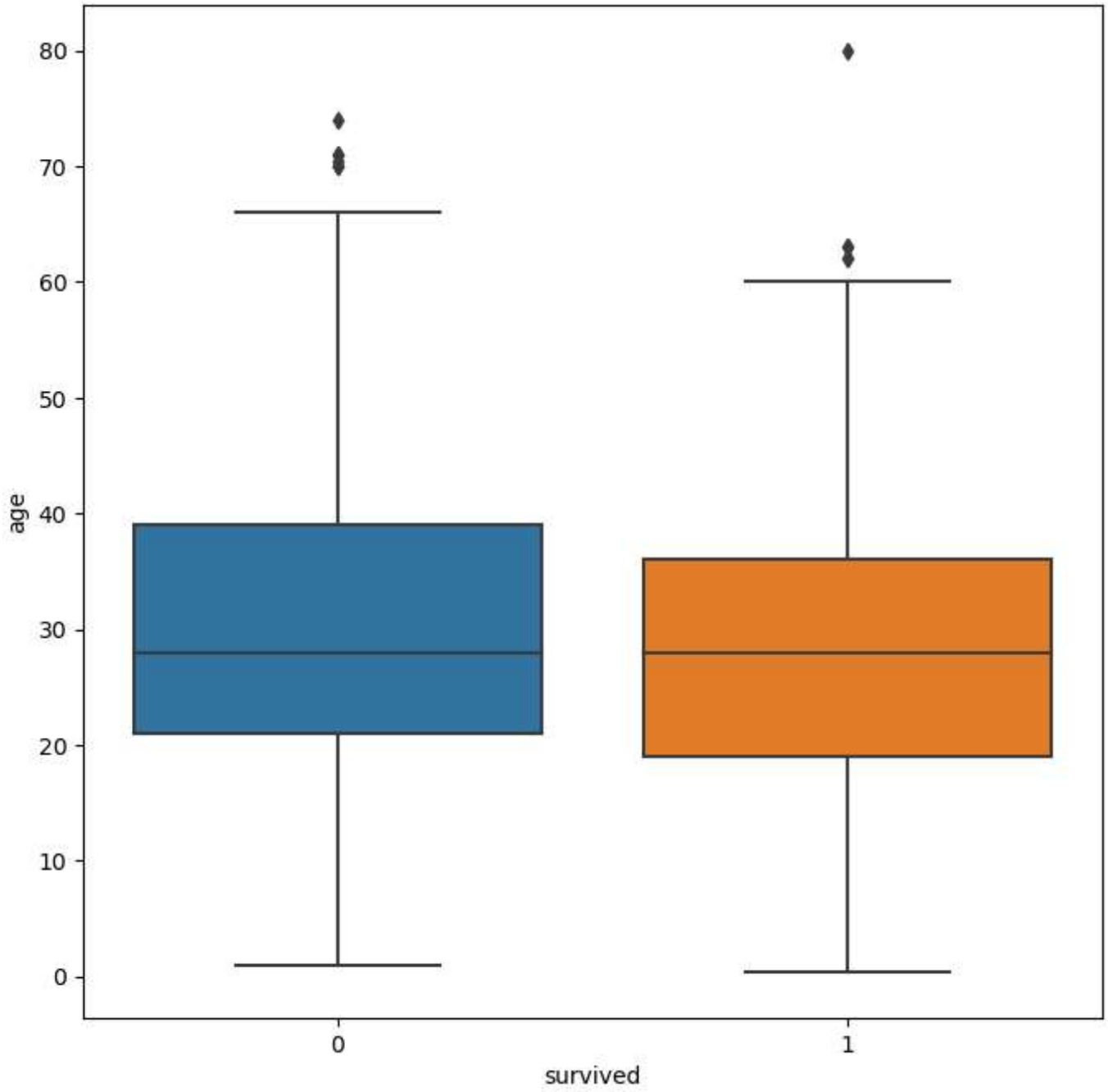
```
plt.figure(figsize=(8,8))
sns.swarmplot(x='sex',y='age',hue='sex',data=df)
plt.show()
```


sex
male
female
80
70
60
50
40
30
20
10
0
age
male
female
sex

3.4 Boxplot

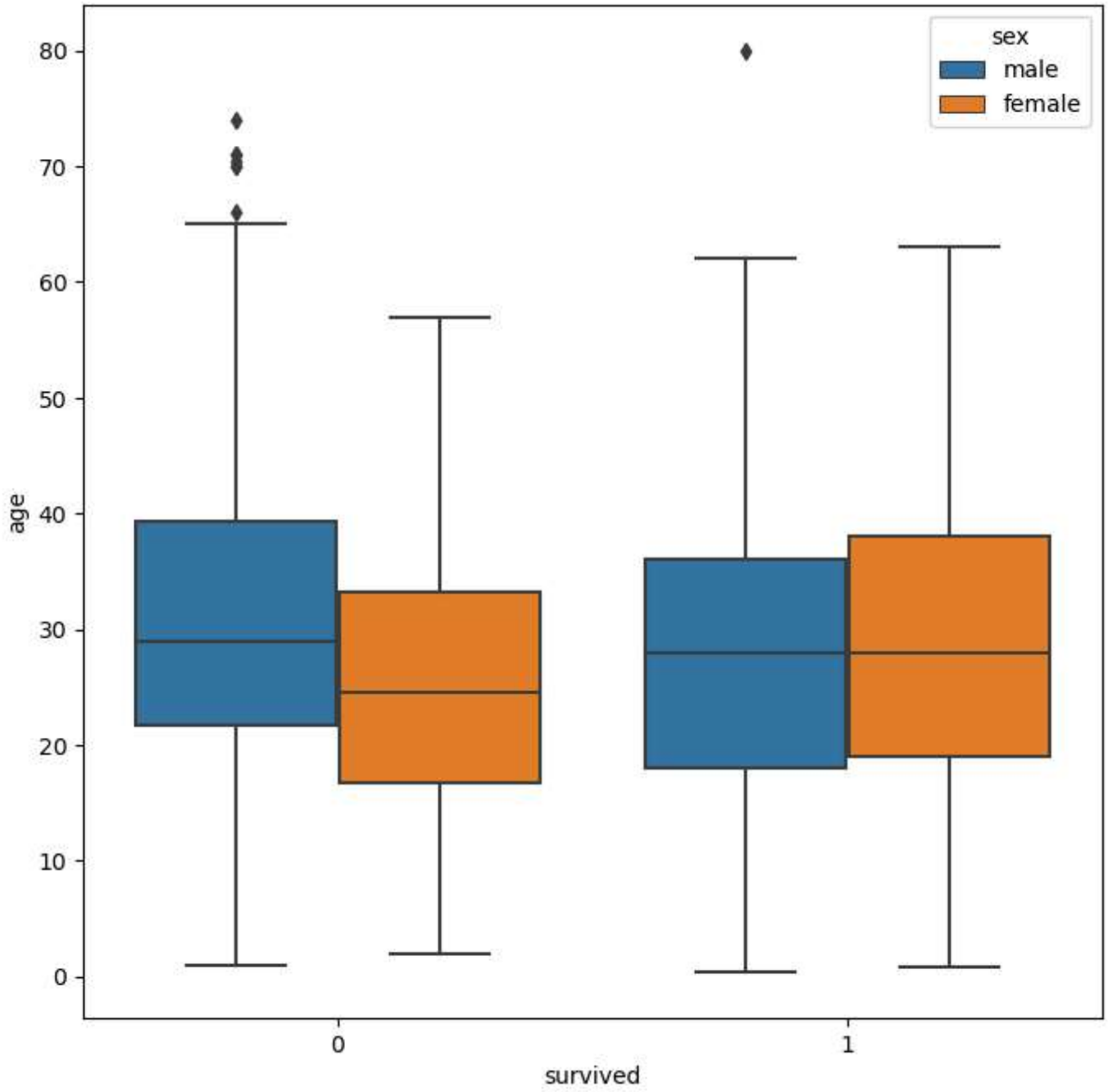
In [21]:

```
plt.figure(figsize=(8,8))
sns.boxplot(y='age',x='survived',data=df)
plt.show()
```


80
70
60
50
40
30
20
10
0
age
0
1
survived

In [22]:

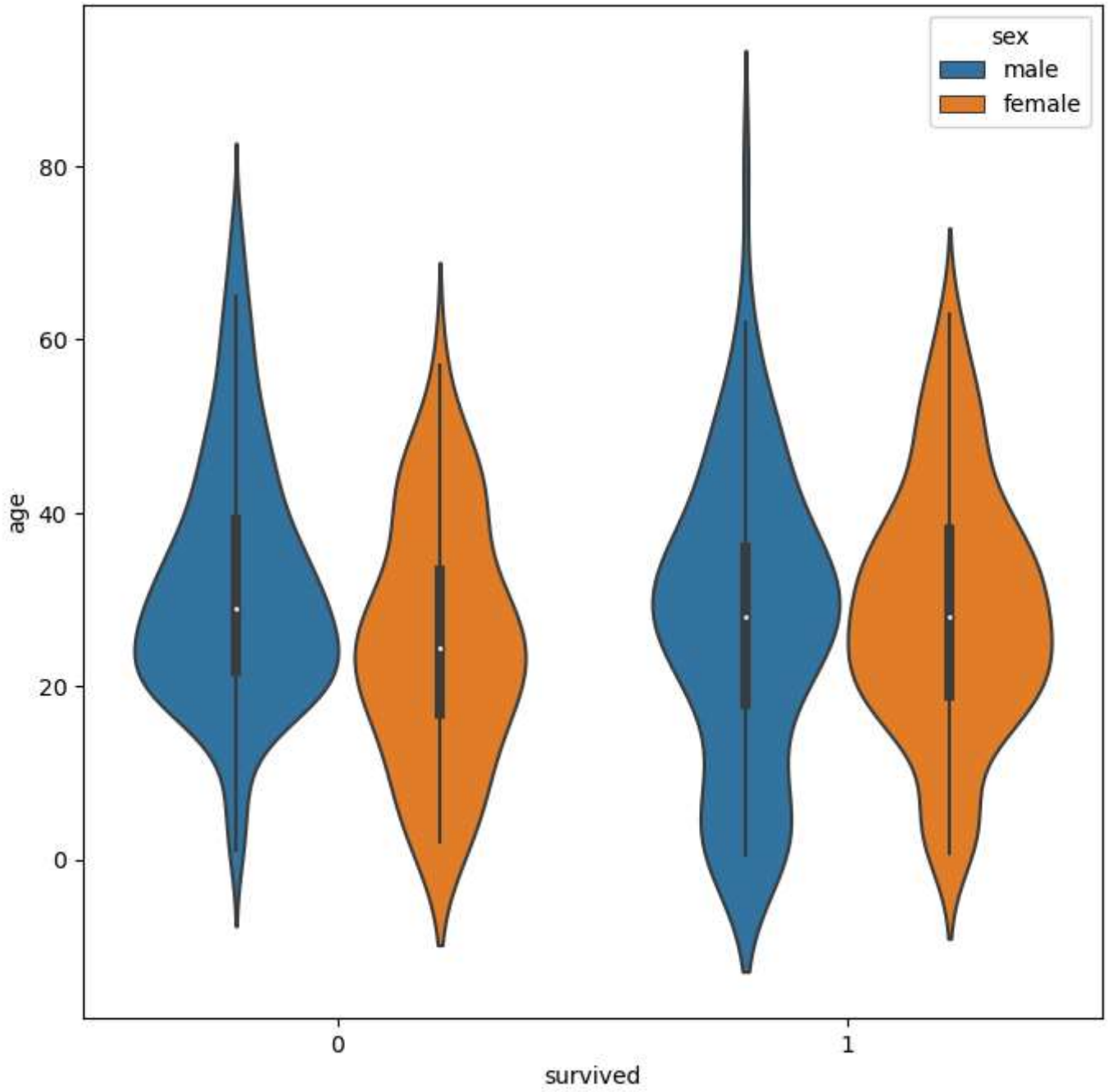
```
plt.figure(figsize=(8,8))
sns.boxplot(y='age',x='survived',hue='sex',data=df)
plt.show()
```


sex
male
female
80
70
60
50
40
30
20
10
0
age
0
1
survived

3.5 Violinplot

In [23]:

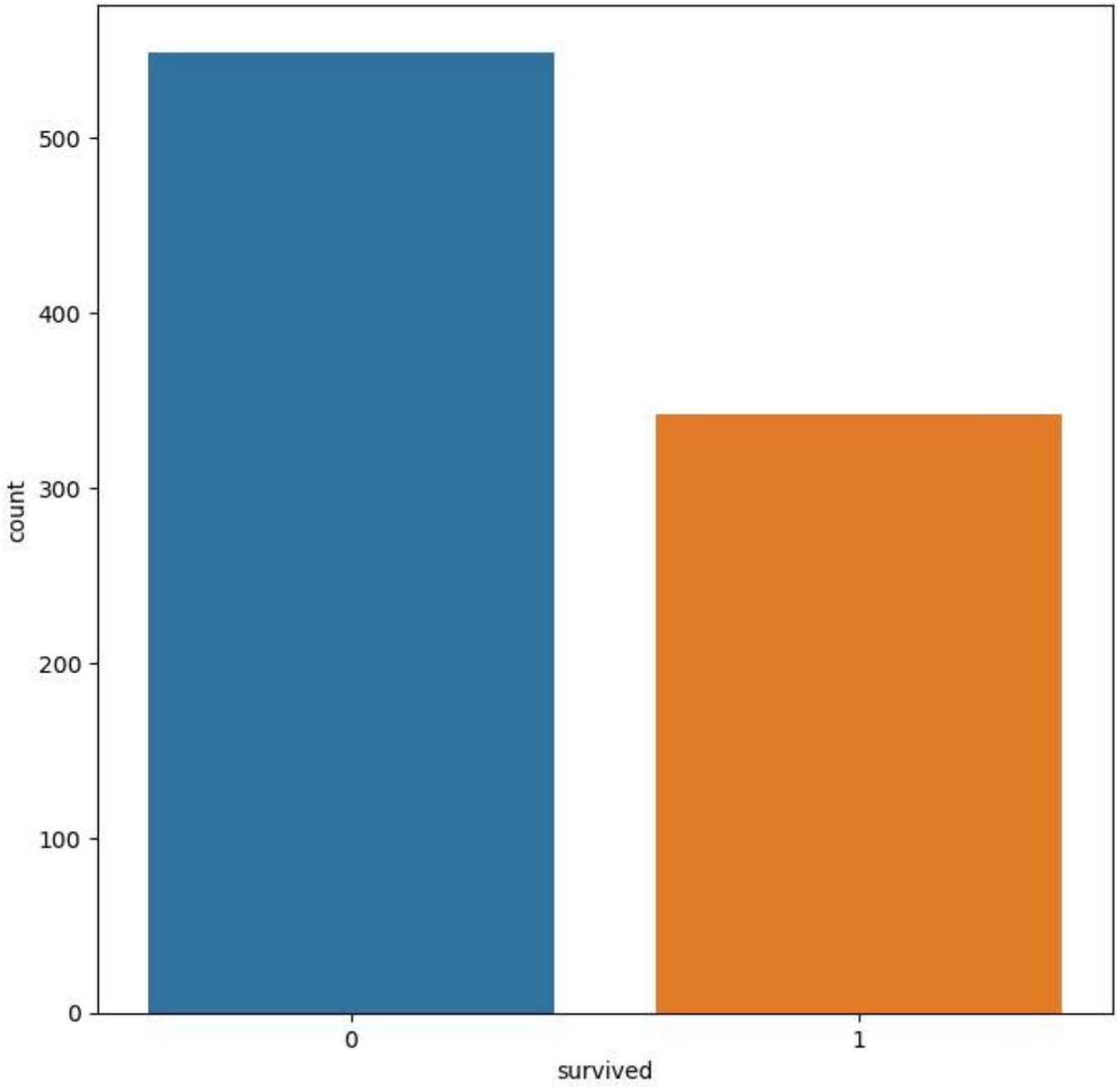
```
plt.figure(figsize=(8,8))
sns.violinplot(y='age',x='survived',hue='sex',data=df)
plt.show()
```


sex
male
female
80
60
40
20
0
age
0
1
survived

3.6 Countplot

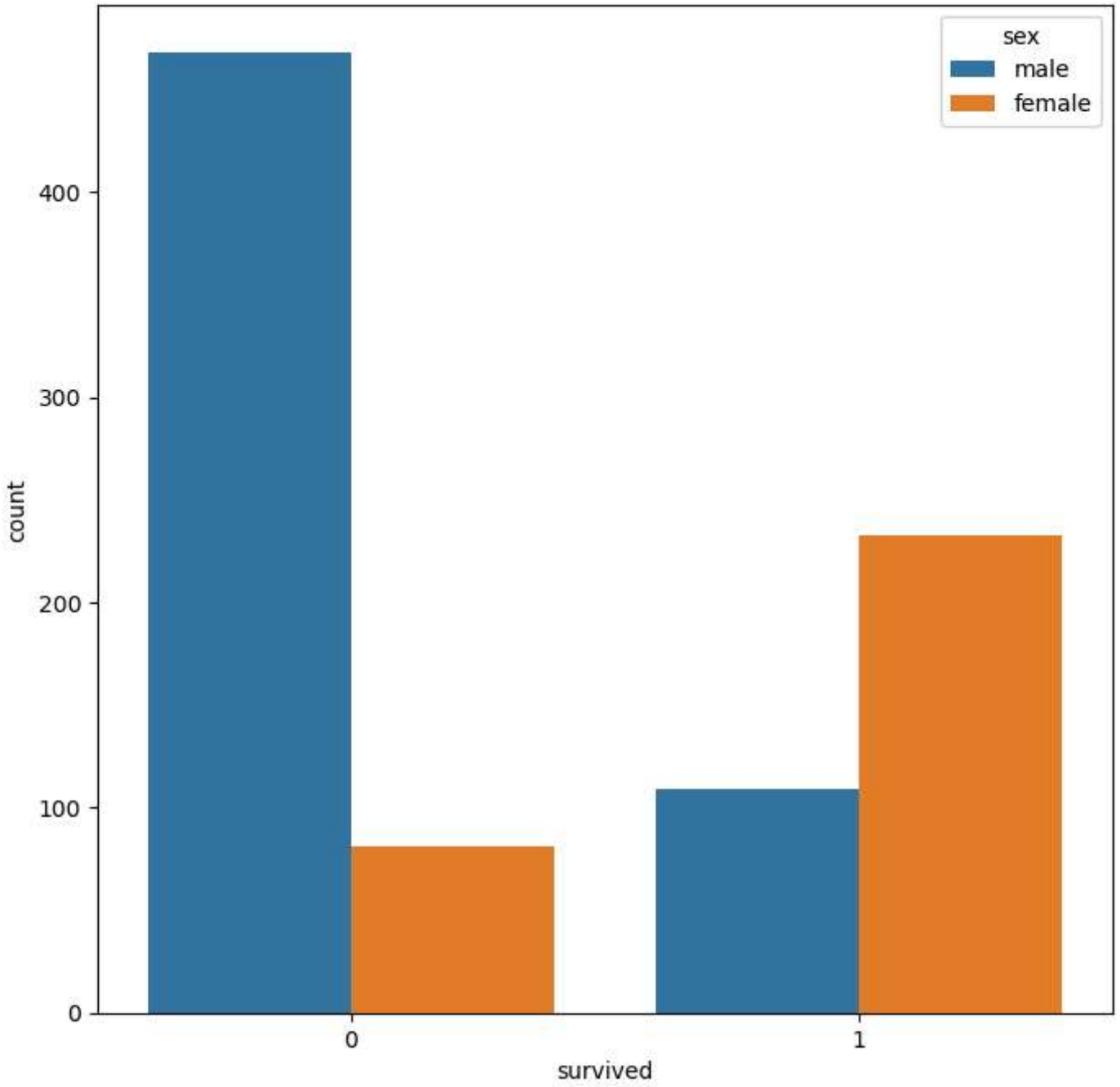
In [24]:

```
plt.figure(figsize=(8,8))
sns.countplot(x='survived',data=df)
plt.show()
```


500
400
300
200
100
0
count
0
1
survived

In [25]:

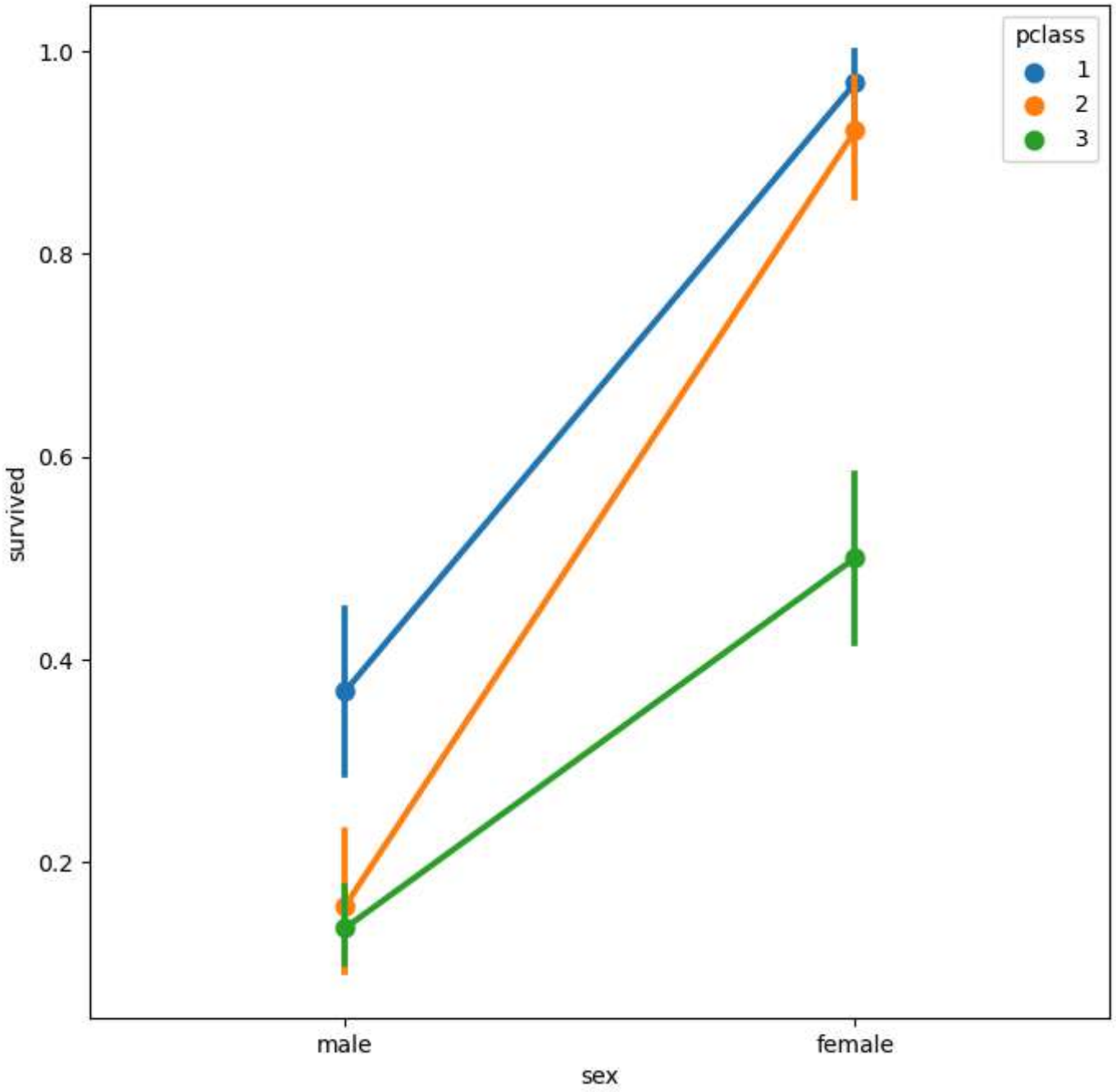
```
plt.figure(figsize=(8,8))
sns.countplot(x='survived',hue='sex',data=df)
plt.show()
```


sex
male
female
400
300
200
100
0
count
0
1
survived

3.7 pointplot

In [26]:

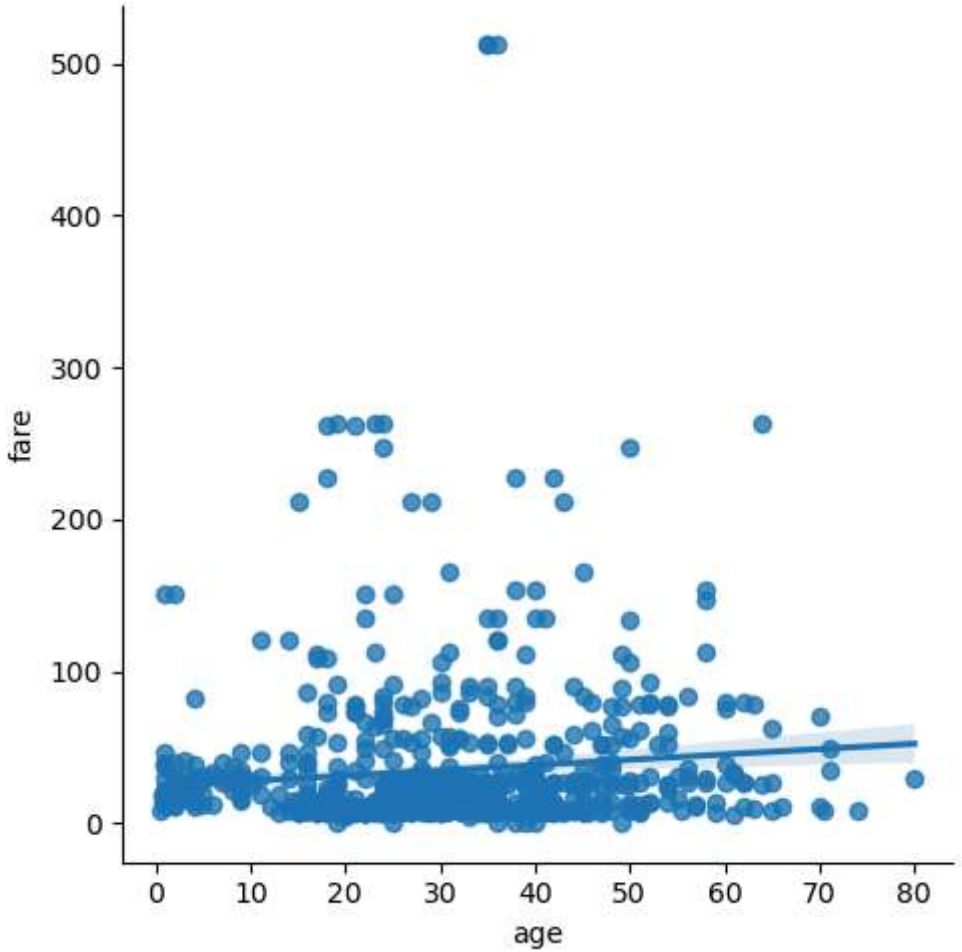
```
plt.figure(figsize=(8,8))
sns.pointplot(y='survived',x='sex',hue='pclass',data=df)
plt.show()
```


pclass
1
2
3
1.0
0.8
0.6
0.4
0.2
survived
male
female
sex

4 Regression plots

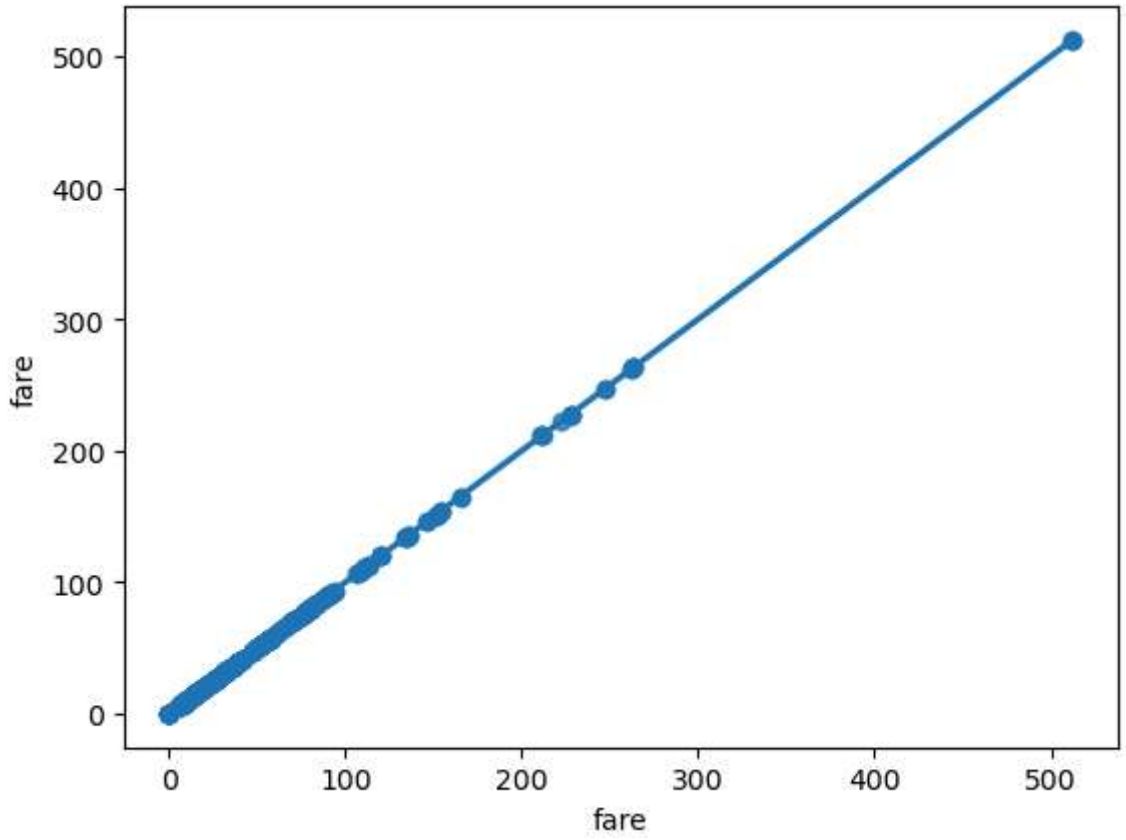
4.1 lmplot()

In [27]:
```
1 sns.lmplot(x='age', y='fare', data=df)
2 plt.show()
3 # not best correlation
```



4.2 Regplot

In [28]:
```
1 sns.regplot(x='fare', y='fare', data=df)
2 plt.show()
3 #strong correlation
```

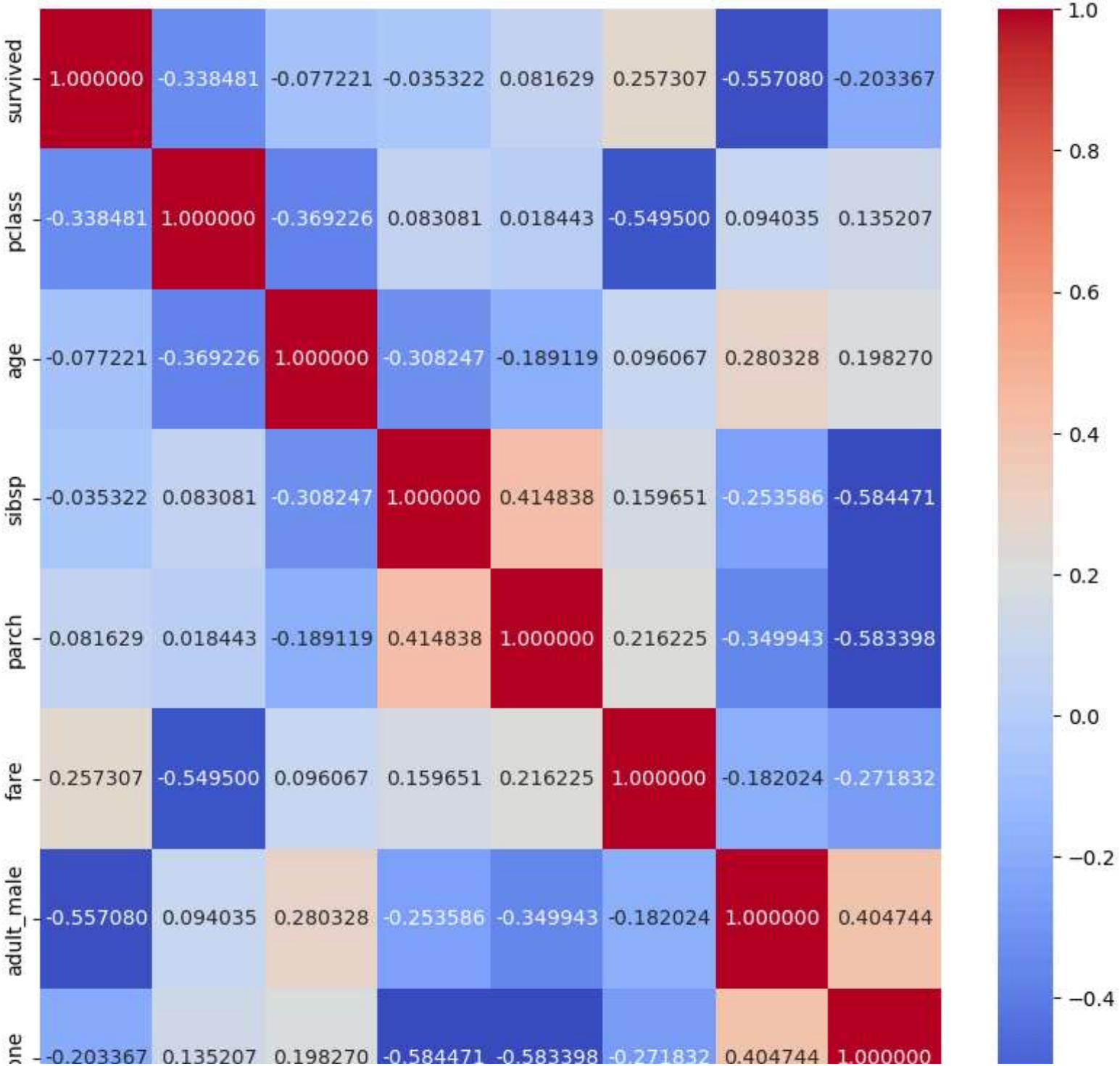


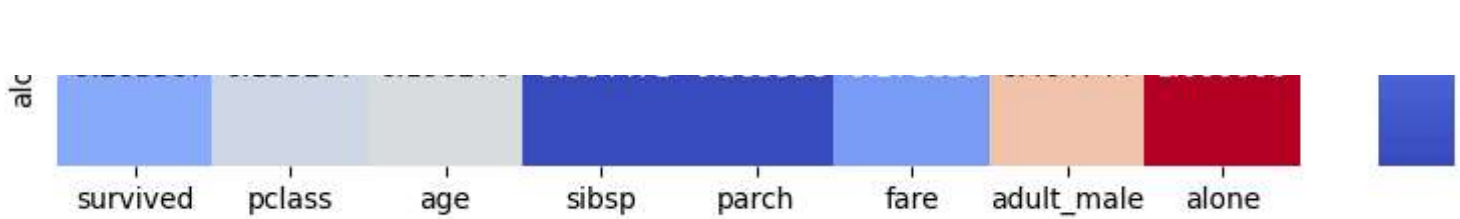
5 Matrix plots

5.1 Heatmap

In [35]:

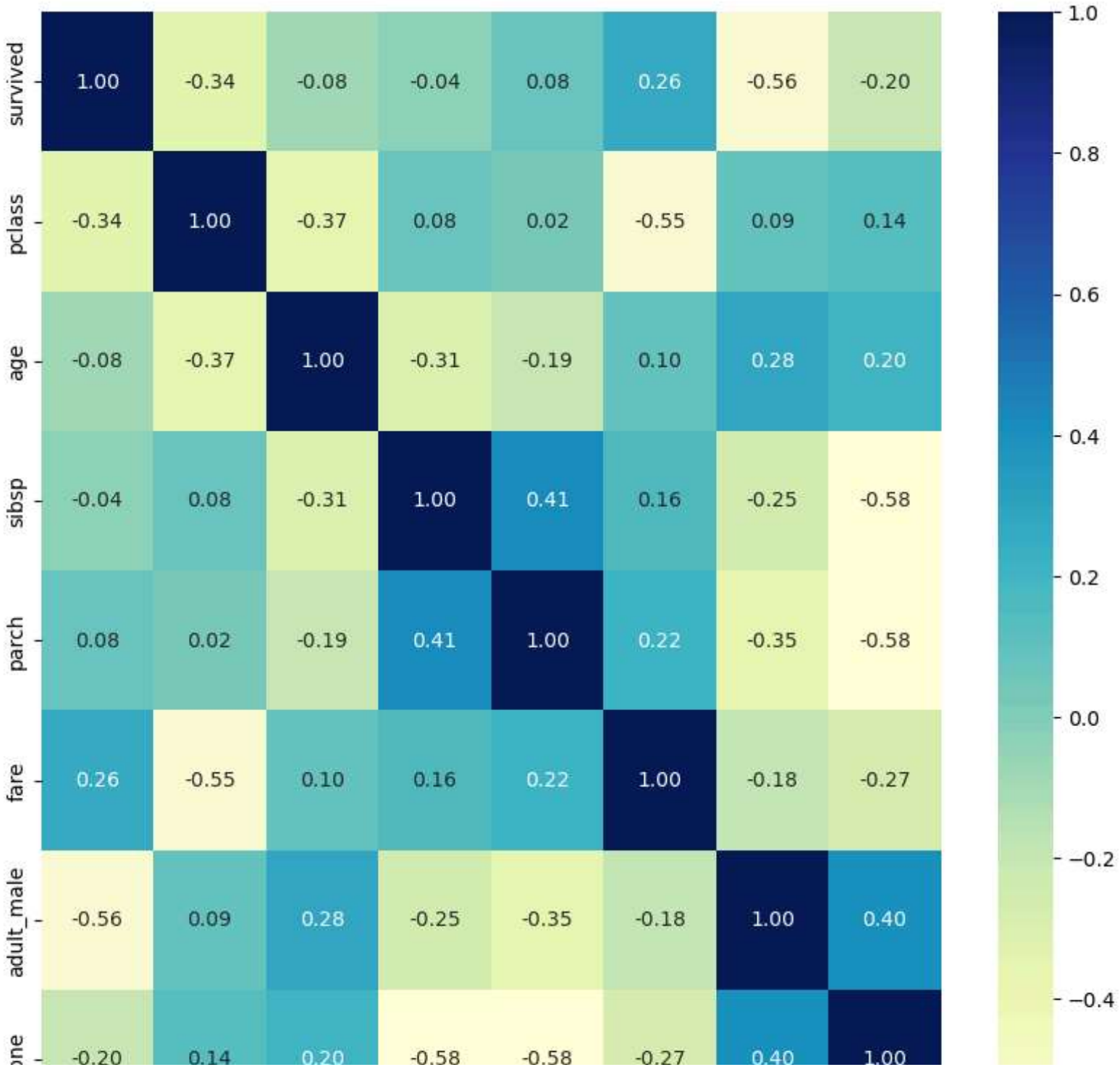
```
plt.subplots(figsize=(10,10))
sns.heatmap(df.corr(),cmap='coolwarm',annot=True,fmt='2f')
plt.show()
```

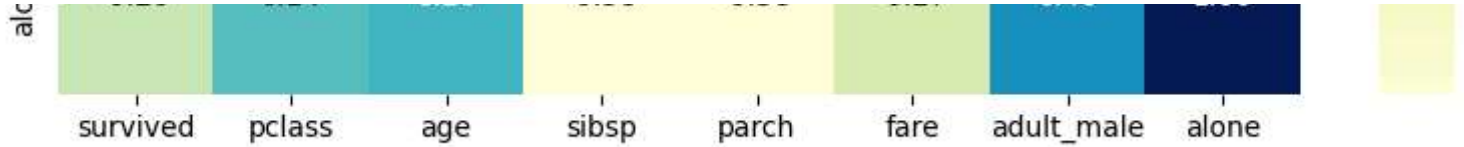

survived
pclass
age
sibsp
parch
fare
adult_male
one
1.000000 -0.338481 -0.077221 -0.035322 0.081629 0.257307 -0.557080 -0.203367
-0.338481 1.000000 -0.369226 0.083081 0.018443 -0.549500 0.094035 0.135207
-0.077221 -0.369226 1.000000 -0.308247 -0.189119 0.096067 0.280328 0.198270
-0.035322 0.083081 -0.308247 1.000000 0.414838 0.159651 -0.253586 -0.584471
0.081629 0.018443 -0.189119 0.414838 1.000000 0.216225 -0.349943 -0.583398
0.257307 -0.549500 0.096067 0.159651 0.216225 1.000000 -0.182024 -0.271832
-0.557080 0.094035 0.280328 -0.253586 -0.349943 -0.182024 1.000000 0.404744
-0.203367 0.135207 0.198270 -0.584471 -0.583398 -0.271832 0.404744 1.000000
1.0
0.8
0.6
0.4
0.2
0.0
−0.2
−0.4


survived
pclass
age
sibsp
parch
fare
adult_male
alone

In [33]:

```
plt.subplots(figsize=(10,10))
sns.heatmap(df.corr(),cmap='YlGnBu',annot=True,fmt='.2f')
plt.show()
```


survived
pclass
age
sibsp
parch
fare
adult_male
1.00 -0.34 -0.08 -0.04 0.08 0.26 -0.56 -0.20
-0.34 1.00 -0.37 0.08 0.02 -0.55 0.09 0.14
-0.08 -0.37 1.00 -0.31 -0.19 0.10 0.28 0.20
-0.04 0.08 -0.31 1.00 0.41 0.16 -0.25 -0.58
0.08 0.02 -0.19 0.41 1.00 0.22 -0.35 -0.58
0.26 -0.55 0.10 0.16 0.22 1.00 -0.18 -0.27
-0.56 0.09 0.28 -0.25 -0.35 -0.18 1.00 0.40
-0.20 0.14 0.20 -0.58 -0.58 -0.27 0.40 1.00
1.0
0.8
0.6
0.4
0.2
0.0
−0.2
−0.4



In [ ]:

```
1
```