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Practical 8: Use the inbuilt dataset "titanic" the dataset contains 891 rows and contains informationabout the passengers who boarded the unfortunate titanic ship use the seaborn liabrary to see if we can find any patterns in the data.

Import seaborn library

In [1]:
```
import seaborn as sns
```

Load the Titanic dataset using seaborn

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

In [ ]:

Display the dataframe

In [ ]:
```
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

891 rows × 15 columns

Select relevant columns from the dataframe

In [ ]:
```
df = df[['survived','class','sex','age','fare']]
```

Display the modified dataframe

In [ ]:
```
df
```

Out [5]:

	survived	class	sex	age	fare
0	0	Third	male	22.0	7.2500
1	1	First	female	38.0	71.2833
2	1	Third	female	26.0	7.9250
3	1	First	female	35.0	53.1000
4	0	Third	male	35.0	8.0500
...	...	...	...	...	...
886	0	Second	male	27.0	13.0000
887	1	First	female	19.0	30.0000
888	0	Third	female	NaN	23.4500
889	1	First	male	26.0	30.0000
890	0	Third	male	32.0	7.7500

891 rows × 5 columns

Create a joint plot to visualize the relationship between age and fare
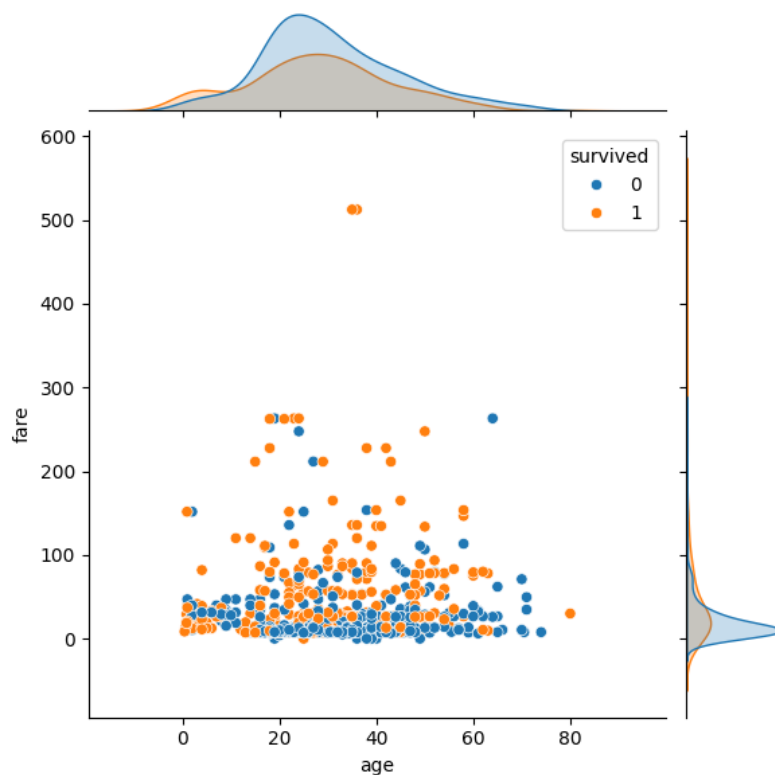
In [ ]:
```
sns.jointplot(x='age',y='fare', data=df)
```

Out [6]: <seaborn.axisgrid.JointGrid at 0x79aaa80b4d00>
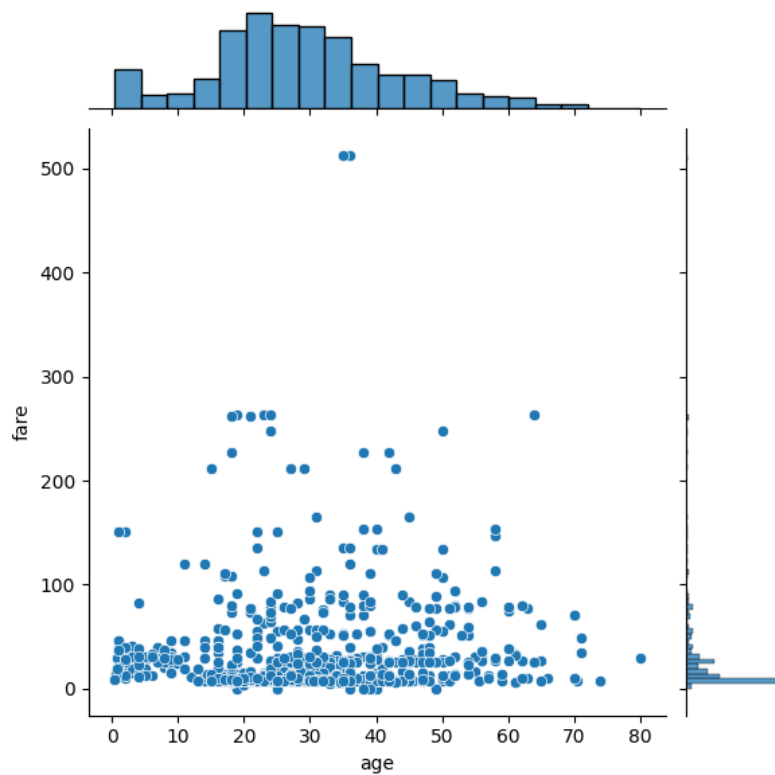
Create a joint plot with hue based on passenger class to explore the relationship between age, fare, and survival

In [ ]:
```
sns.jointplot(x='age',y='fare', data=df,hue ='survived')
```
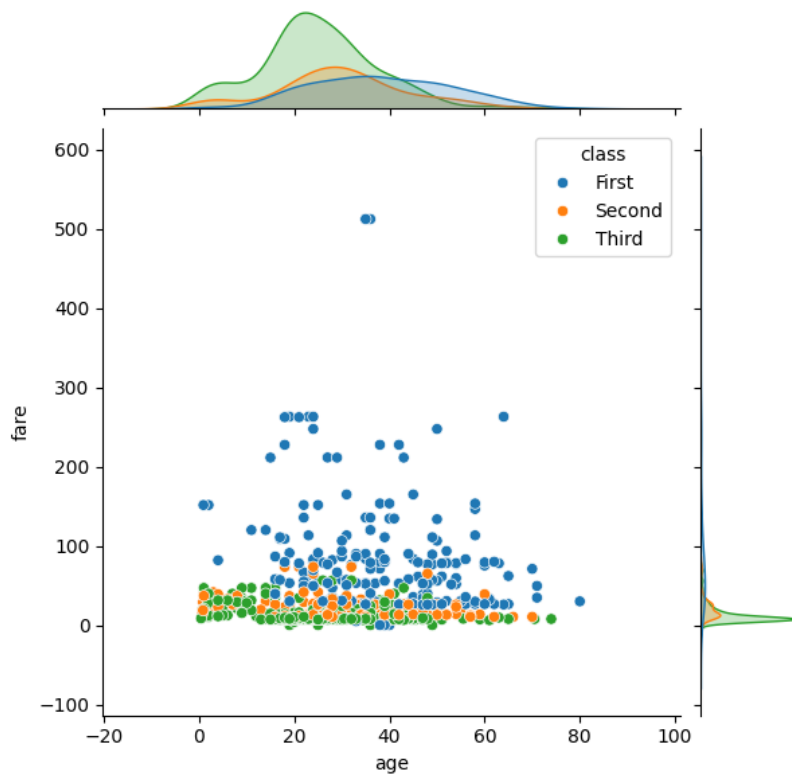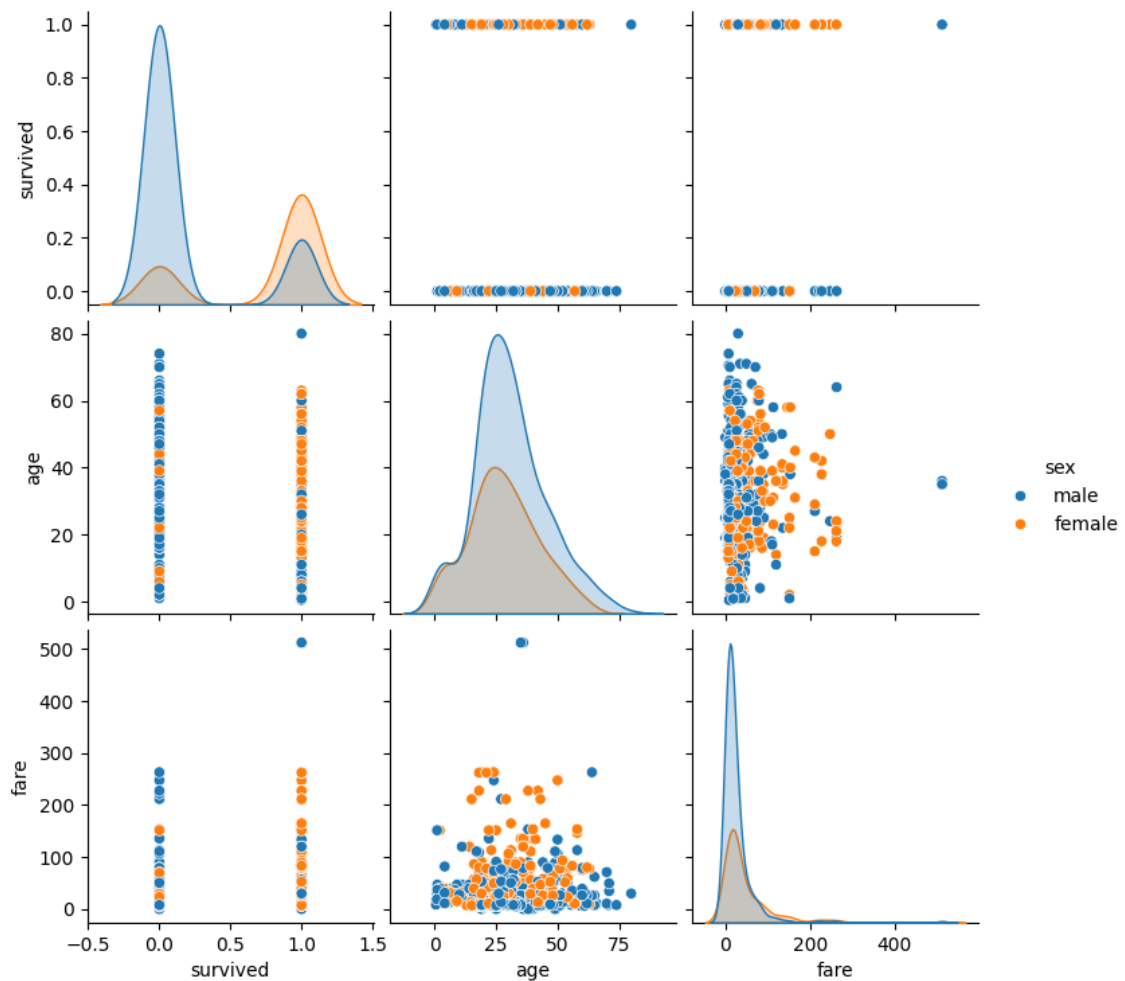
Out [7]: <seaborn.axisgrid.JointGrid at 0x79aaa5ce3760>

Create a joint plot with hue based on passenger class to explore the relationship between age, fare, and class

In [ ]:
```
sns.jointplot(x='age',y='fare', data=df,hue ='class')
```

Out [8]: <seaborn.axisgrid.JointGrid at 0x79aaa5ce2fb0>

Create a pair plot to visualize pairwise relationships between different variables with hue based on sex
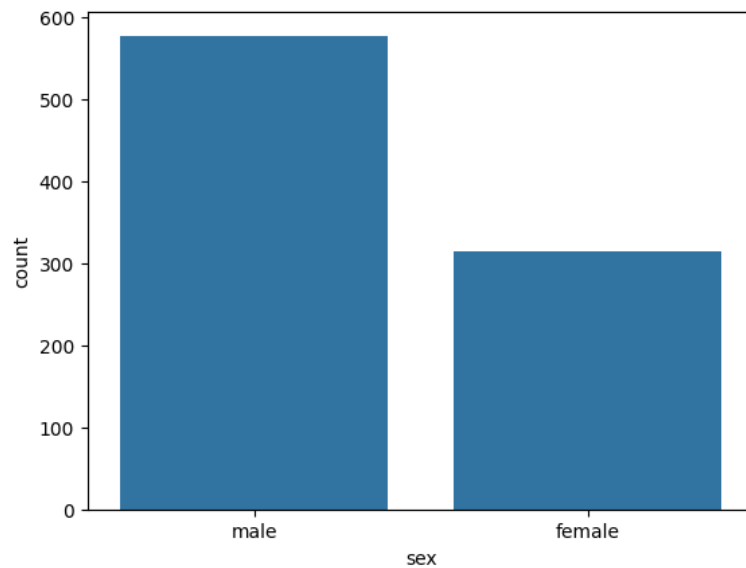
```
In [ ]: sns.pairplot(df,hue='sex')
```

Out [10]: <seaborn.axisgrid.PairGrid at 0x79aaa1ee1360>

Create a count plot to visualize the distribution of passengers by sex
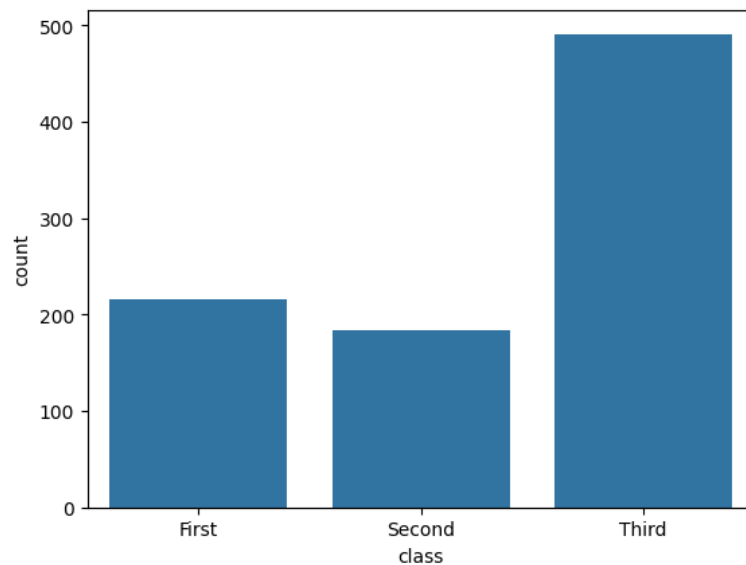
```
sns.countplot(x=df['sex'])
```

Out [12]: <Axes: xlabel='sex', ylabel='count'>

Create a count plot to visualize the distribution of passengers by class
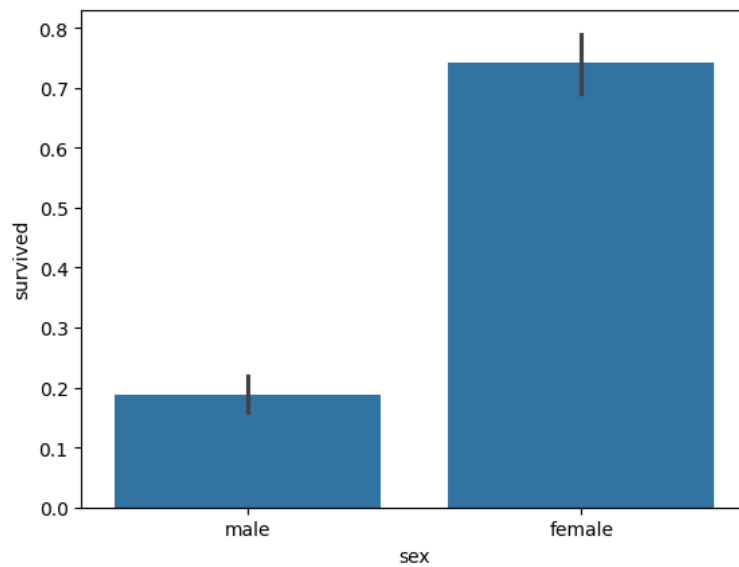
```
sns.countplot(x=df['class'])
```

Out [13]: <Axes: xlabel='class', ylabel='count'>

Create a bar plot to visualize the survival rate by sex

```
sns.barplot(x='sex',y='survived',data=df)
```
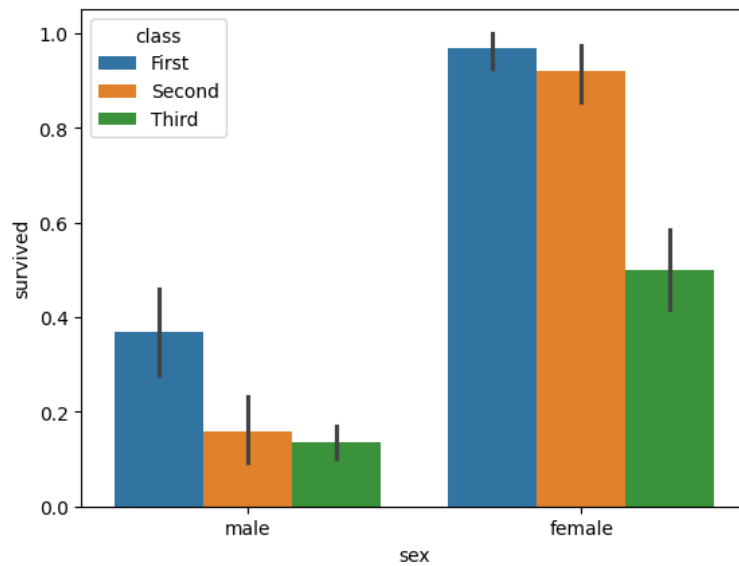
Out [14]: <Axes: xlabel='sex', ylabel='survived'>

Create a bar plot to visualize the survival rate by sex and class

```
In [ ]:  sns.barplot(x='sex',y='survived',hue='class',data=df)
```
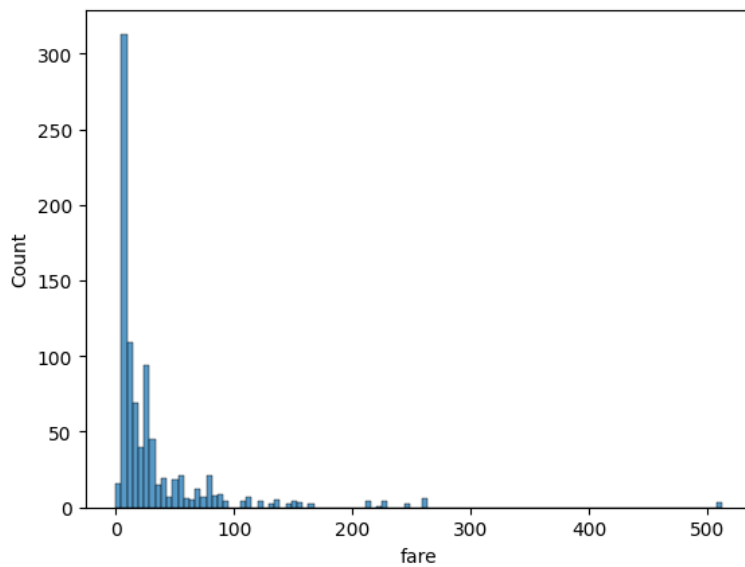
Out [15]: <Axes: xlabel='sex', ylabel='survived'>

Create a histogram to visualize the distribution of fares
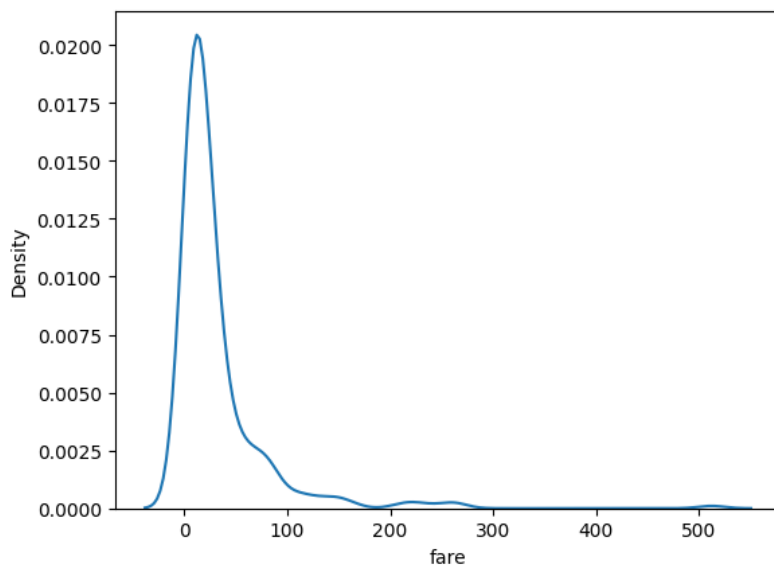
```
In [ ]:  sns.histplot(df['fare'])
```

Out [16]: <Axes: xlabel='fare', ylabel='Count'>

Create a kernel density estimate plot to visualize the distribution of fares

```
In [ ]:  sns.kdeplot(df['fare'])
```

Out [17]: <Axes: xlabel='fare', ylabel='Density'>


```
In [ ]:
```