Assignment 10

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Class :- SY-AIDS(B)

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Title:. Data Visualization I

1. Use the inbuilt dataset 'titanic'. The dataset contains 891 rows and contains information about the passengers who boarded the unfortunate Titanic ship. Use the Seaborn library to see if we can find any patterns in the data.
2. Write a code to check how the price of the ticket (column name: 'fare') for each passenger is distributed by plotting a histogram
3. Plot a box plot for distribution of age with respect to each gender along with the information about whether they survived or not. (Column names: 'sex' and 'age')
4. Write observations on the inference from the above statistics.

In [2]:

```
import matplotlib.pyplot as plt
import pandas as pd import
seaborn as sns
```

In [3]:

```
df=sns.load_dataset("iris") df
```

Out[3]:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica

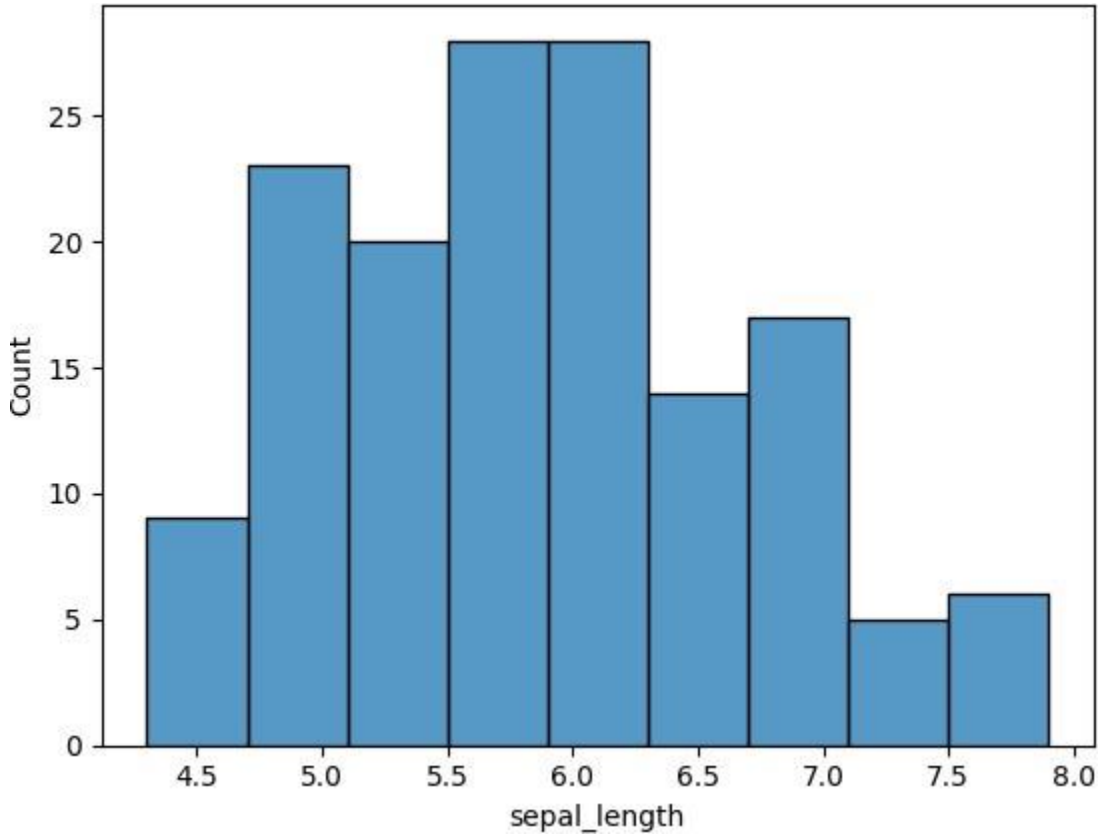
149	5.9	3.0	5.1	virginica
		1.8		
150	rows × 5 columns			

In [4]:


```
sns.histplot(df['sepal_length'])
```

Out[4]:

```
<Axes: xlabel='sepal_length', ylabel='Count'>
```

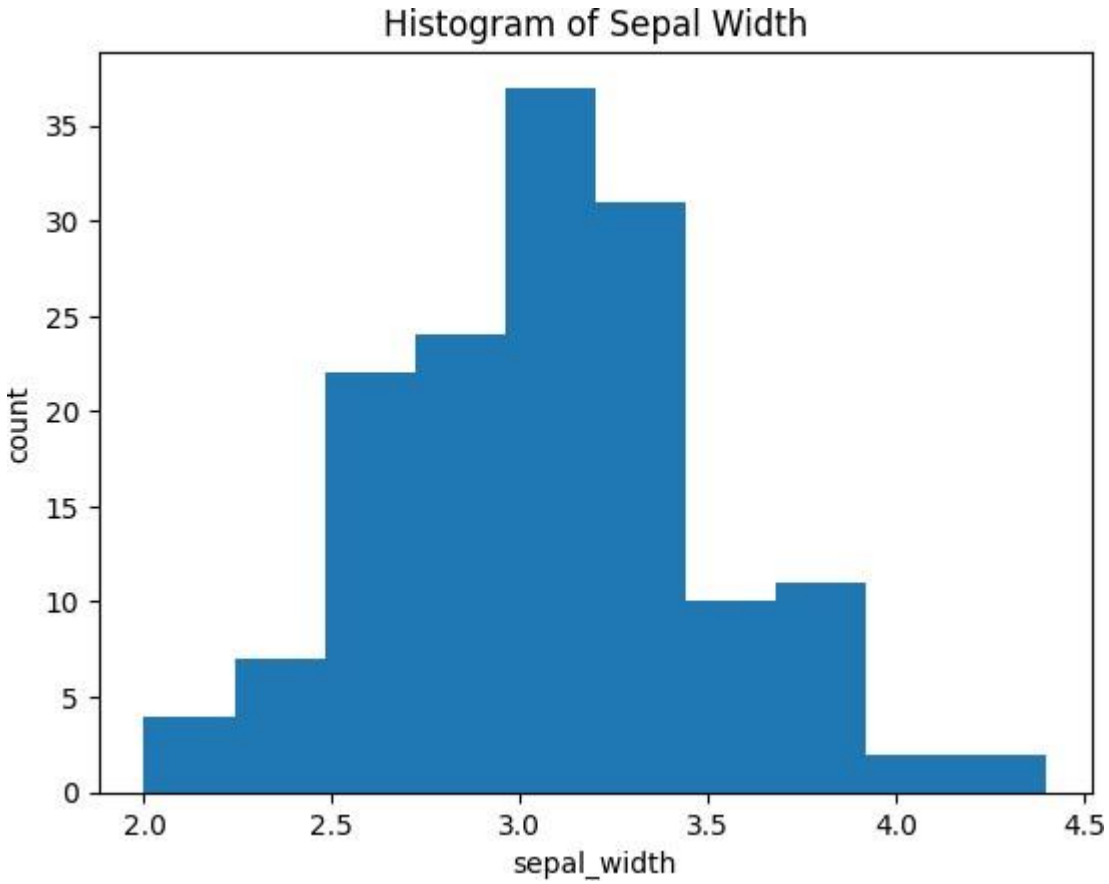


In [5]:

```
plt.hist(df['sepal_width'])
plt.xlabel('sepal_width')
plt.ylabel('count')
plt.title("Histogram of Sepal Width")
```

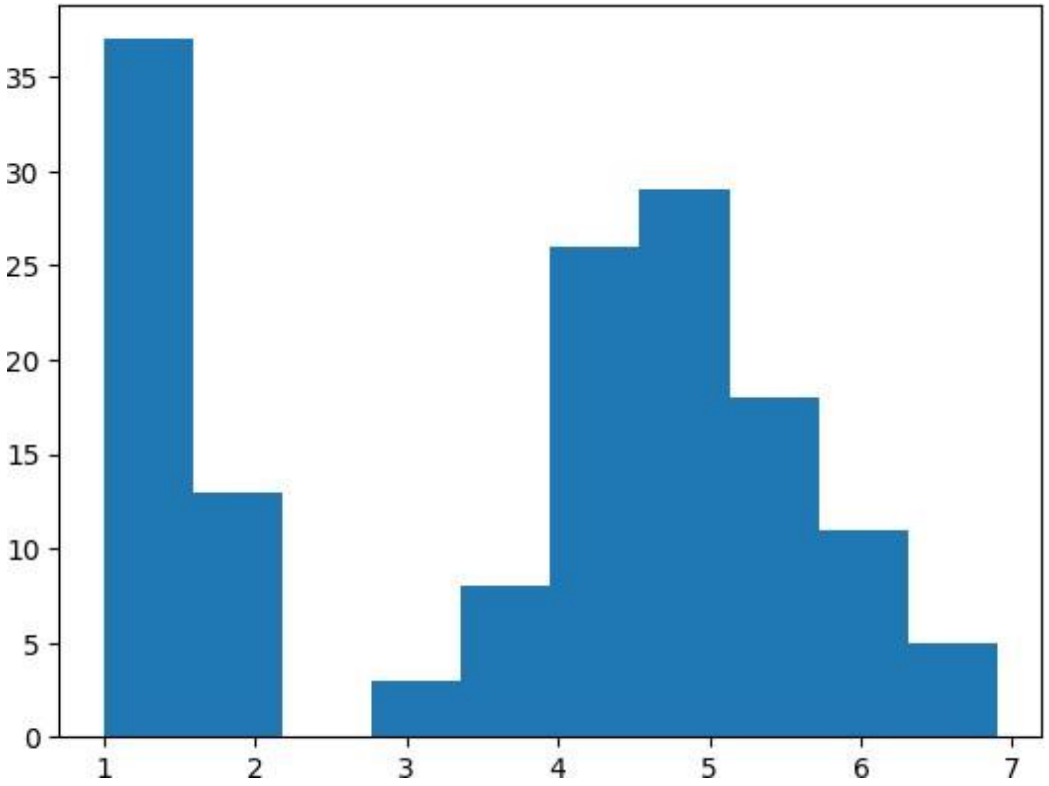
Out[5]:

```
Text(0.5, 1.0, 'Histogram of Sepal Width')
```



In [6]:
```
plt.hist(df["petal_length"])
```

Out[6]:
```
(array([37., 13., 0., 3., 8., 26., 29., 18., 11., 5.]), array([1.  , 1.59,
 2.18, 2.77, 3.36, 3.95, 4.54, 5.13, 5.72, 6.31, 6.9 ]), <BarContainer object
 of 10 artists>)
```

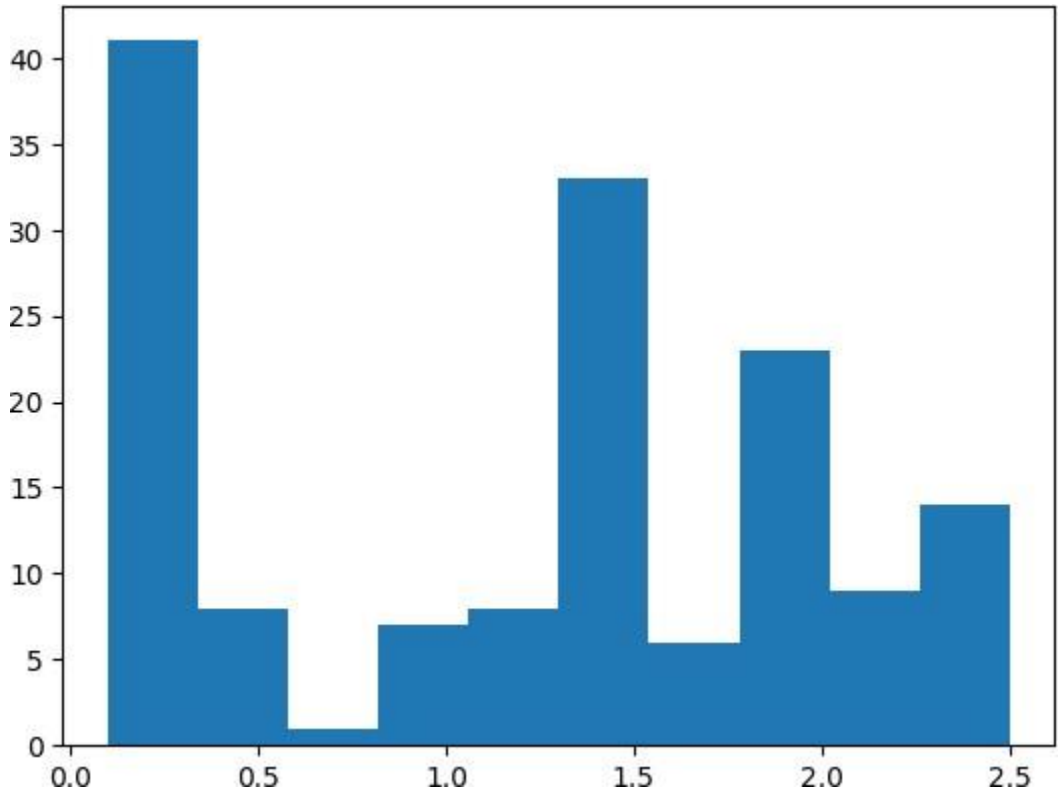


In [7]:

```
plt.hist(df["petal_width"])
```

Out[7]:

```
(array([41., 8., 1., 7., 8., 33., 6., 23., 9., 14.]), array([0.1 , 0.34, 0.58,
 0.82, 1.06, 1.3 , 1.54, 1.78, 2.02, 2.26, 2.5 ]), <BarContainer object of 10
 artists>)
```

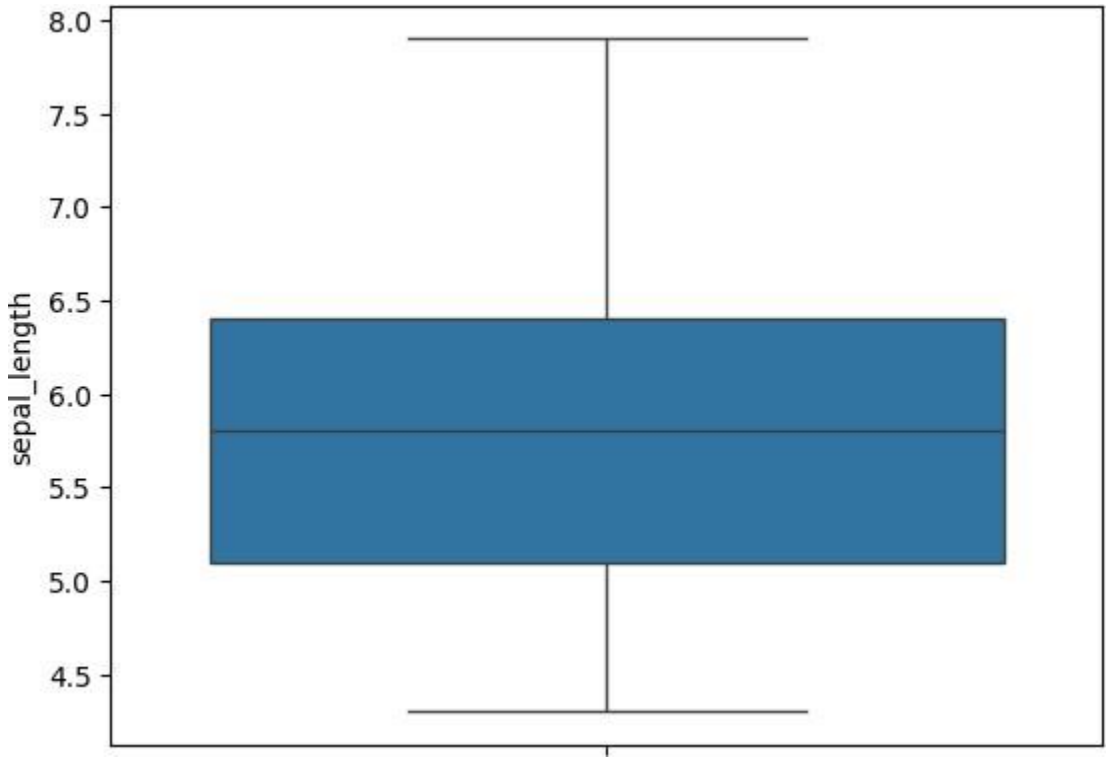


In [8]:

```
sns.boxplot(df["sepal_length"])
```

Out[8]:

```
<Axes: ylabel='sepal_length'>
```

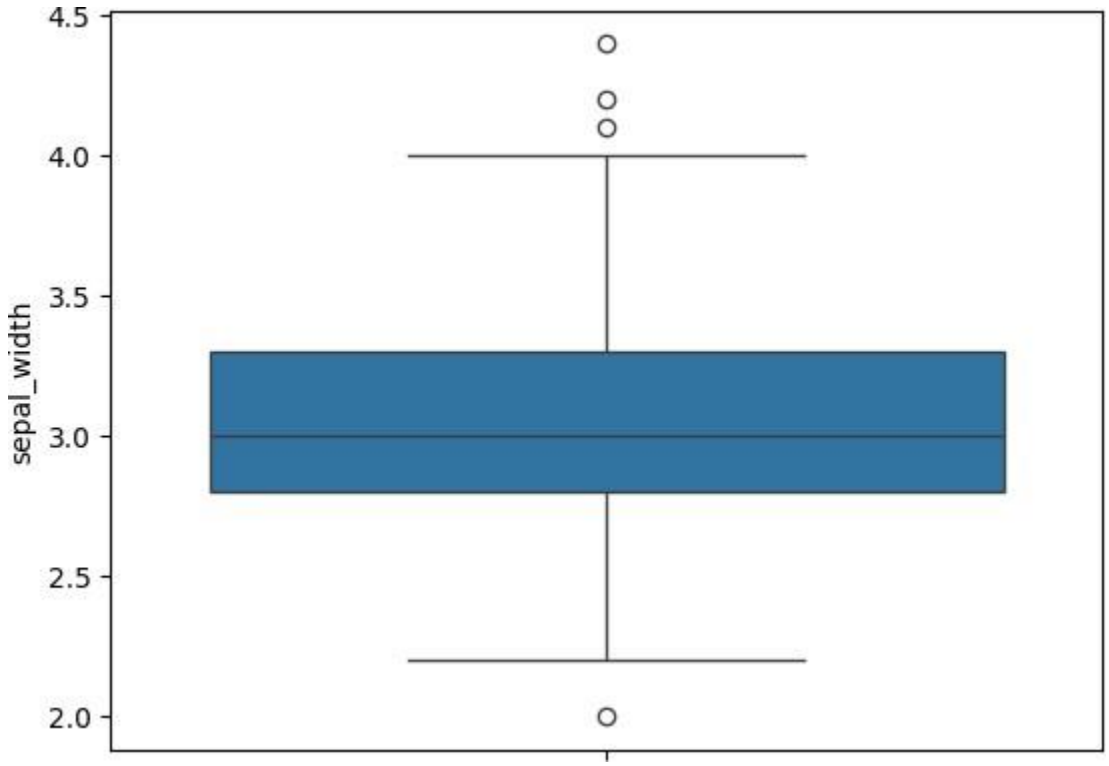


In [9]:

```
sns.boxplot(df["sepal_width"])
```

Out[9]:

```
<Axes: ylabel='sepal_width'>
```

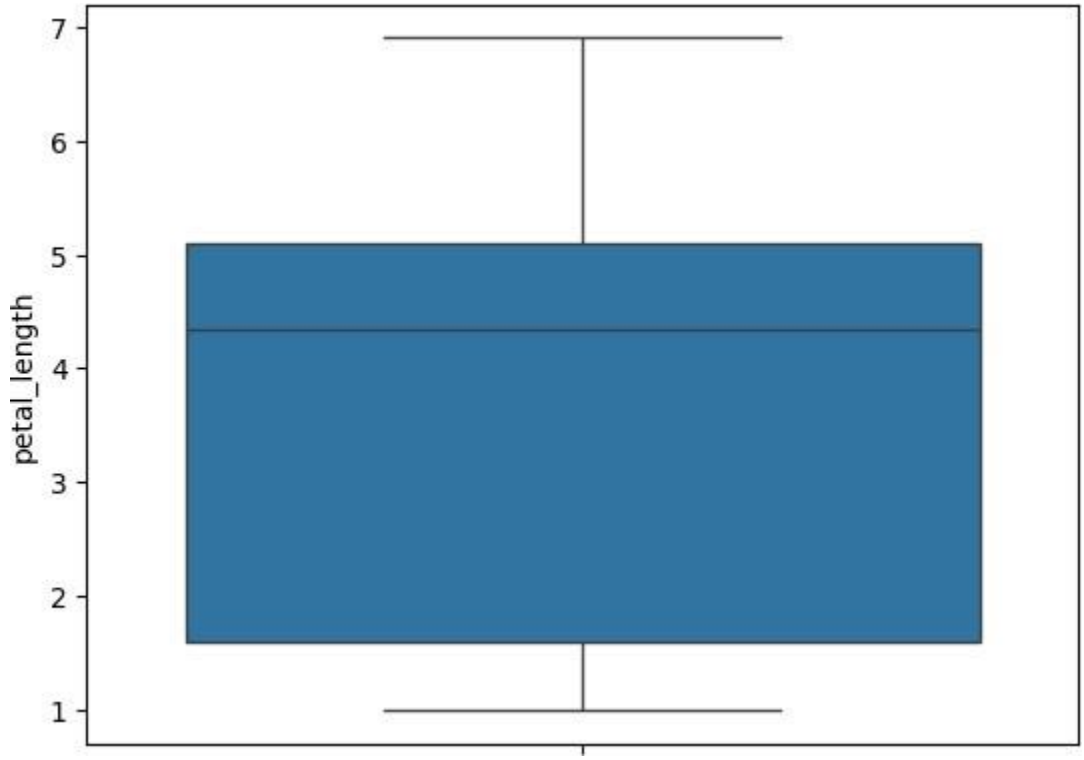


In [10]:

```
sns.boxplot(df["petal_length"])
```

Out[10]:

<Axes: ylabel='petal_length'>

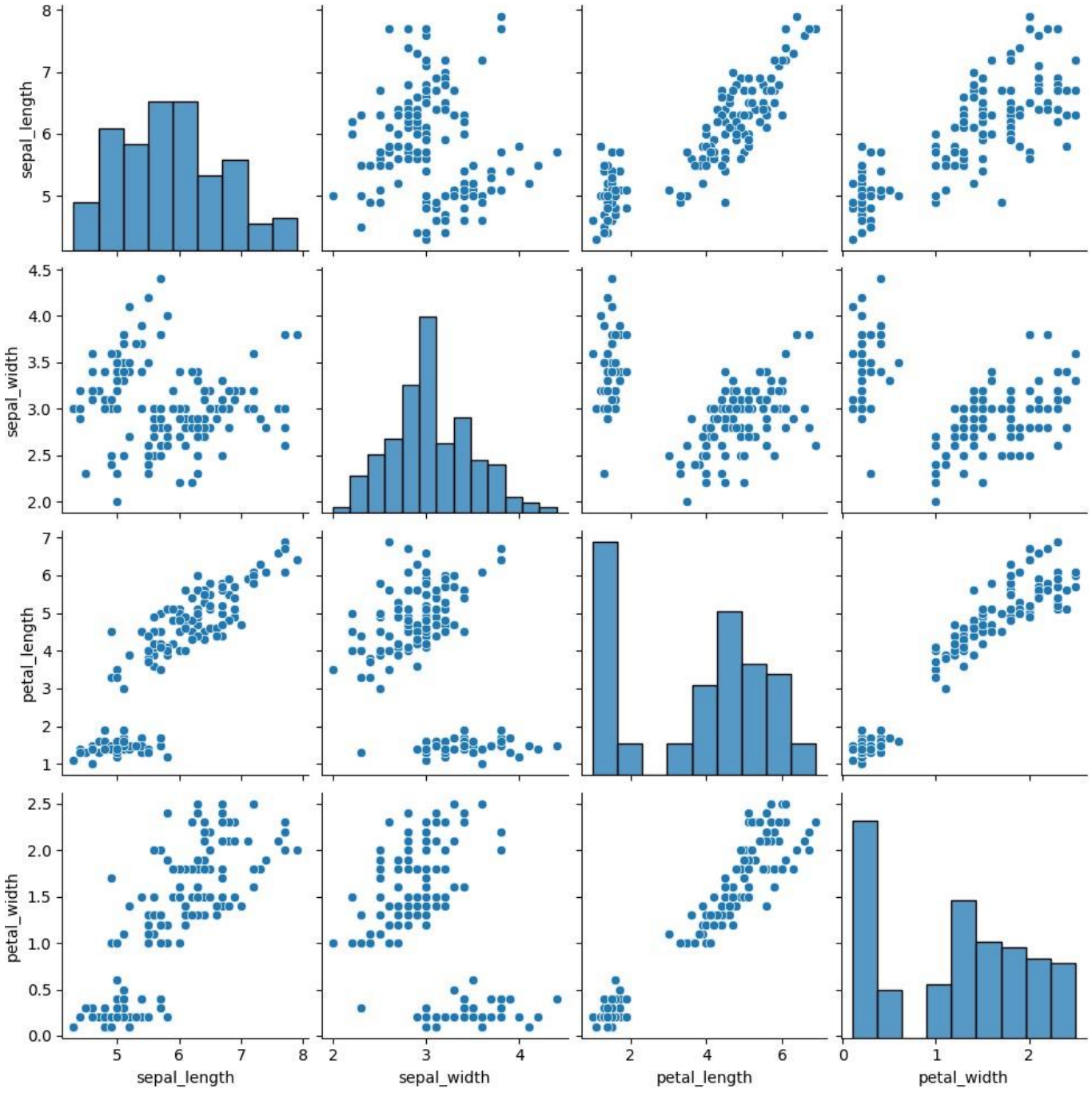


In [11]:

```
sns.pairplot(df)
```

Out[11]:

<seaborn.axisgrid.PairGrid at 0x16a0ab93020>



In [12]:

```
df1=sns.load_dataset("titanic")
```

In [13]:

```
df1
```

Out[13]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	de
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True	Na
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False	
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False	Na

3	1	1	female	35.0	1	0	53.1000	S	First	woman	False		
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True	Na	

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	de
...	...	...	...	...	...	...	...	...	...	...	...	...
886	0	2	male	27.0	0	0	13.0000	S	Second	man	True	Na
887	1	1	female	19.0	0	0	30.0000	S	First	woman	False	
888	0	3	female	NaN	1	2	23.4500	S	Third	woman	False	Na
889	1	1	male	26.0	0	0	30.0000	C	First	man	True	
890	0	3	male	32.0	0	0	7.7500	Q	Third	man	True	Na

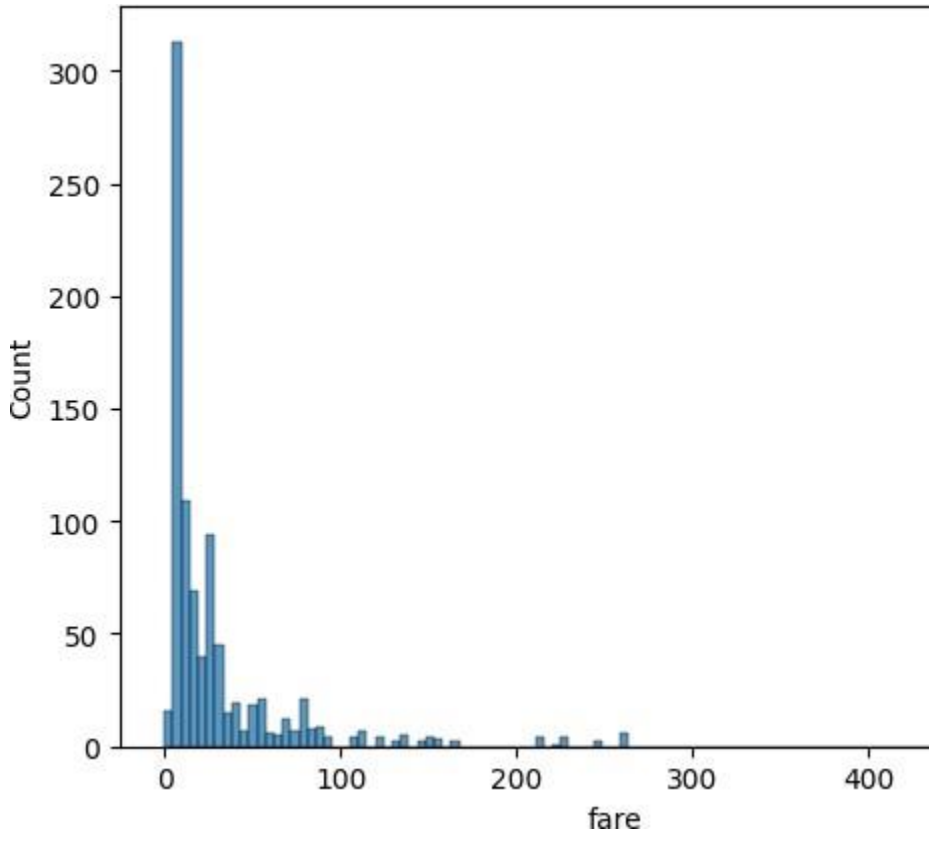
891 rows × 15 columns

In [14]:

```
sns.histplot(df1['fare'])
```

Out[14]:

<Axes: xlabel='fare', ylabel='Count'>

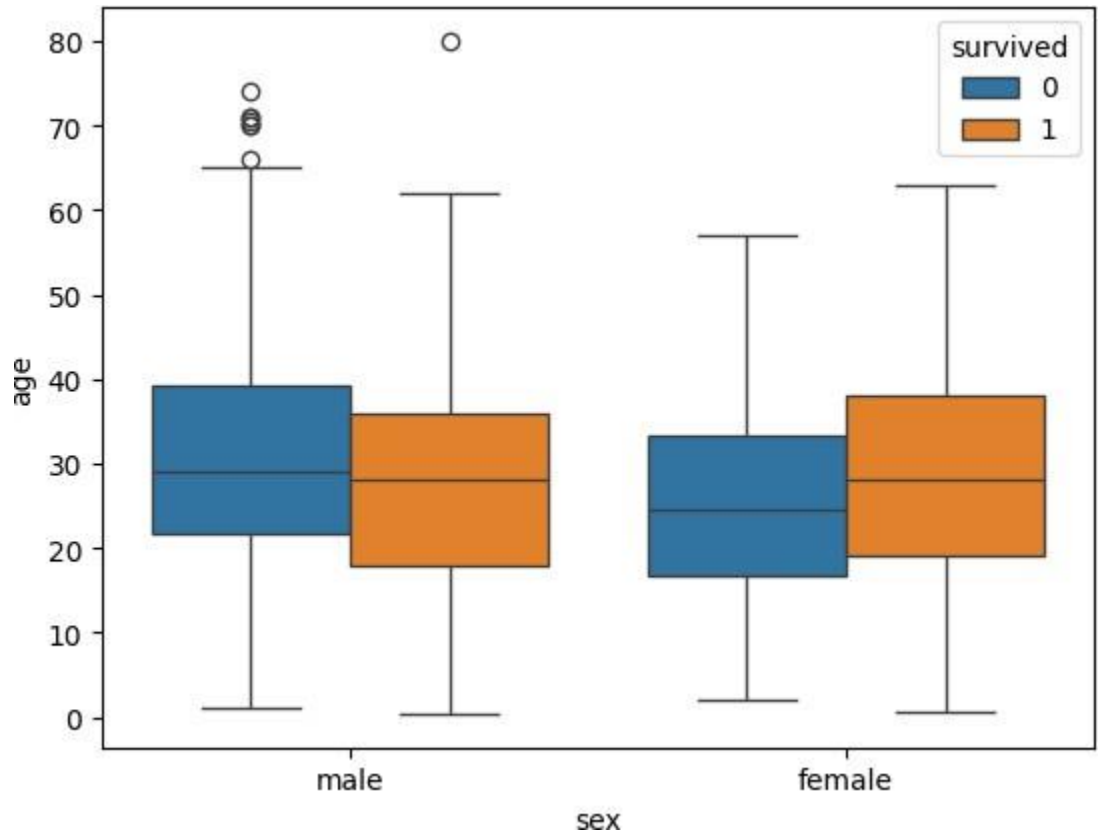


In [15]:

```
sns.boxplot(x=df1["sex"],y=df1["age"]                    ,hue=df1["survive
                                                          d"])
```

Out[15]:

```
<Axes: xlabel='sex', ylabel='age'>
```

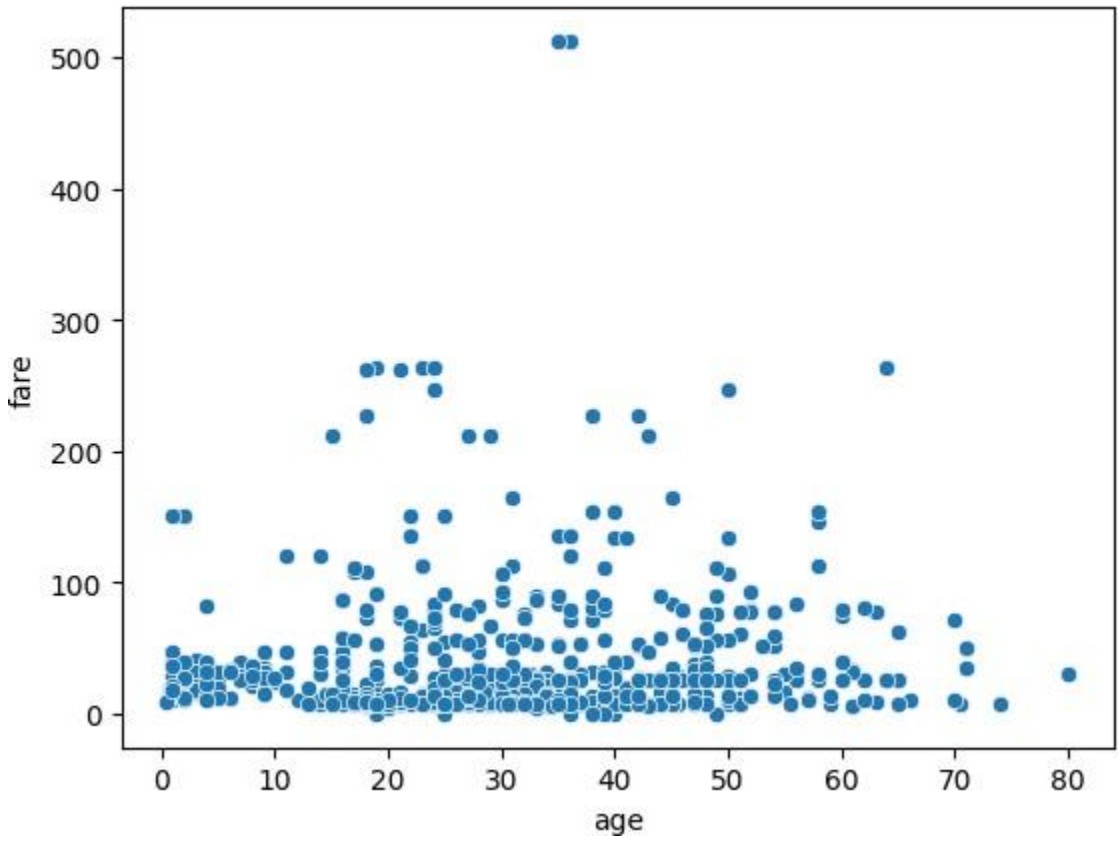


In [16]:

```
sns.scatterplot(x=df1["age"],y=df1["fare"])
```

Out[16]:

```
<Axes: xlabel='age', ylabel='fare'>
```



In [17]:
```
sns.distplot(df1["fare"])
```

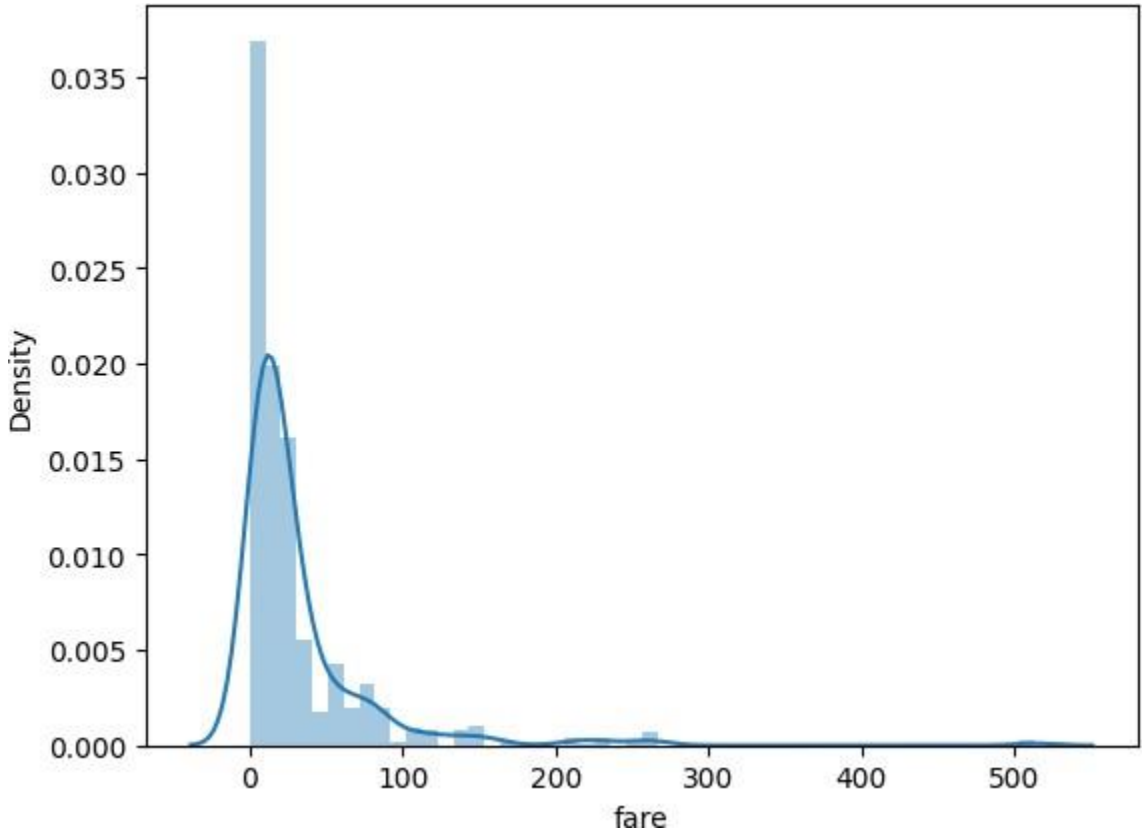
```
C:\Users\wasek\AppData\Local\Temp\ipykernel_6672\701554700.py:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751
 sns.distplot(df1["fare"])
```

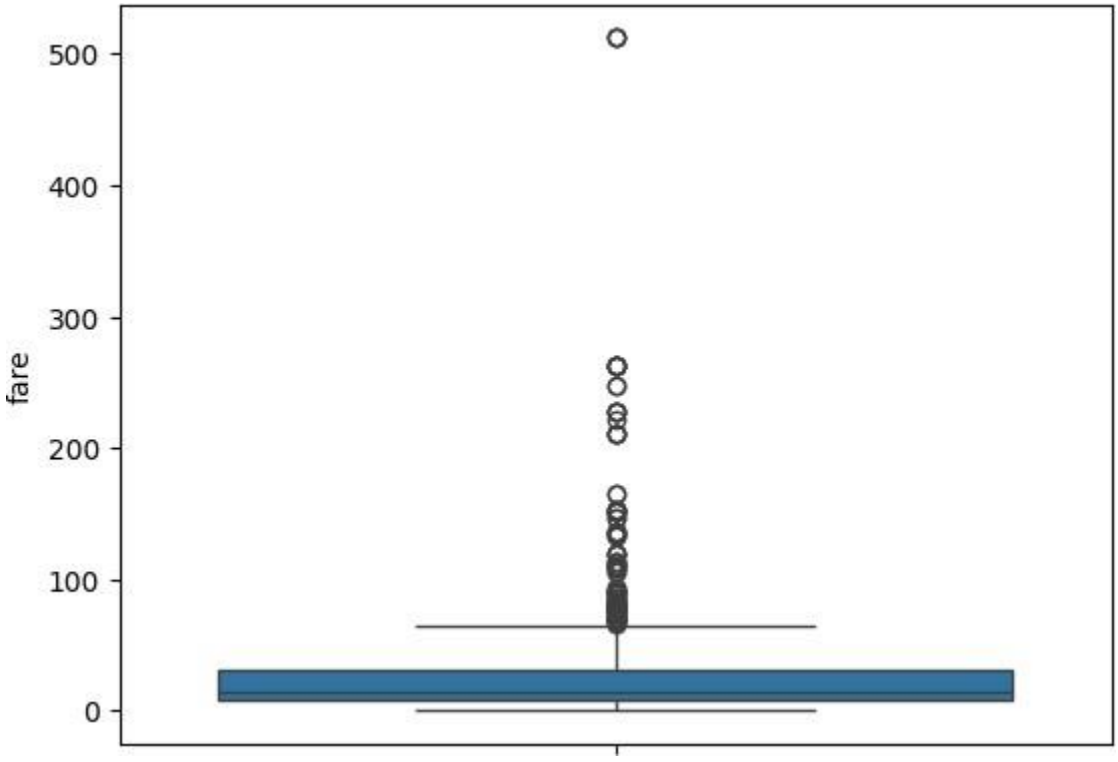
Out[17]:
```
<Axes: xlabel='fare', ylabel='Density'>
```




```
In [18]: sns.boxplot(df1["fare"])
```

Out[18]:

```
<Axes: ylabel='fare'>
```

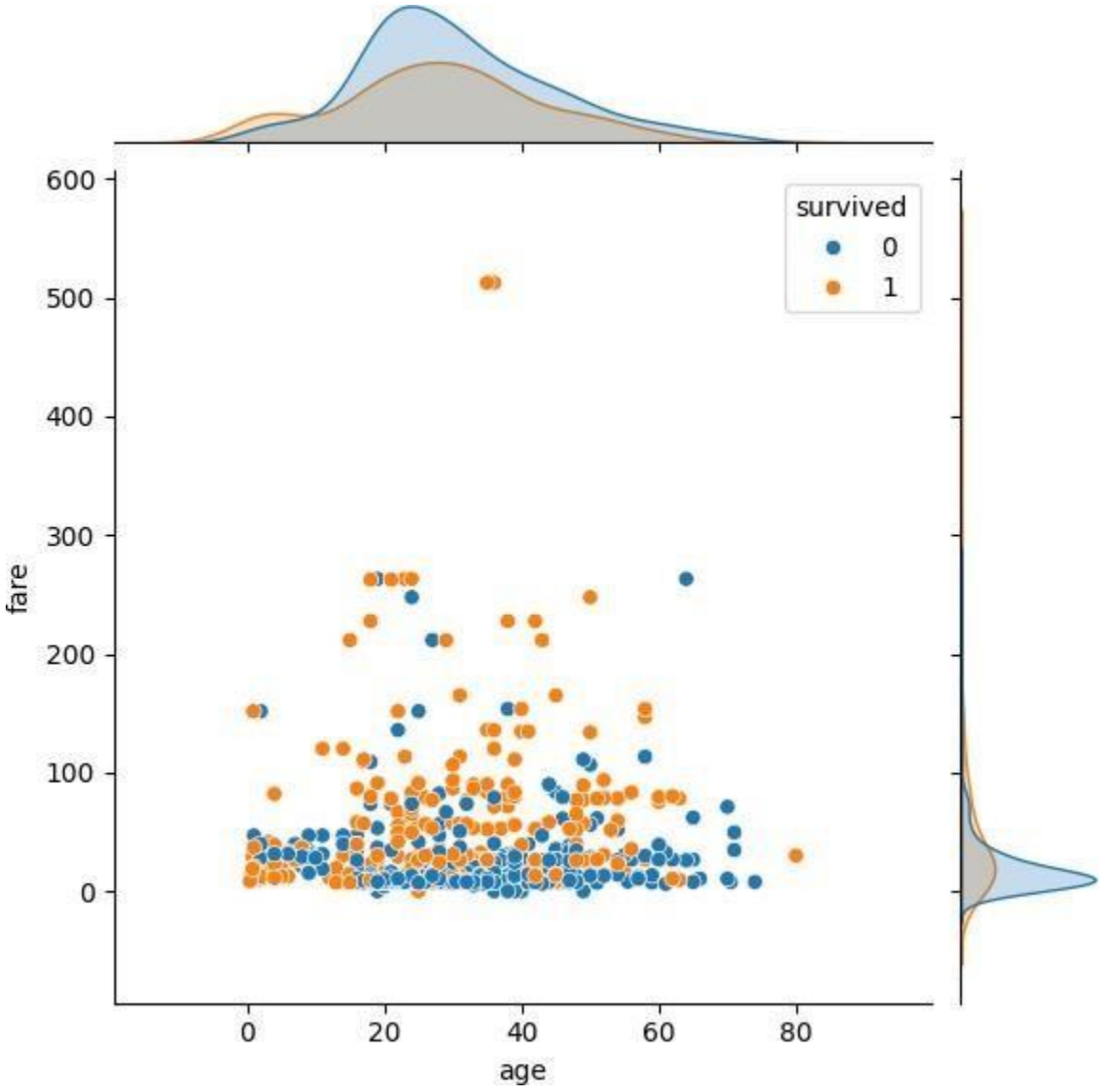


In [19]:

```
sns.jointplot(x=df1["age"],y=df1["fare"],hue=df1["survived"])
```

Out[19]:

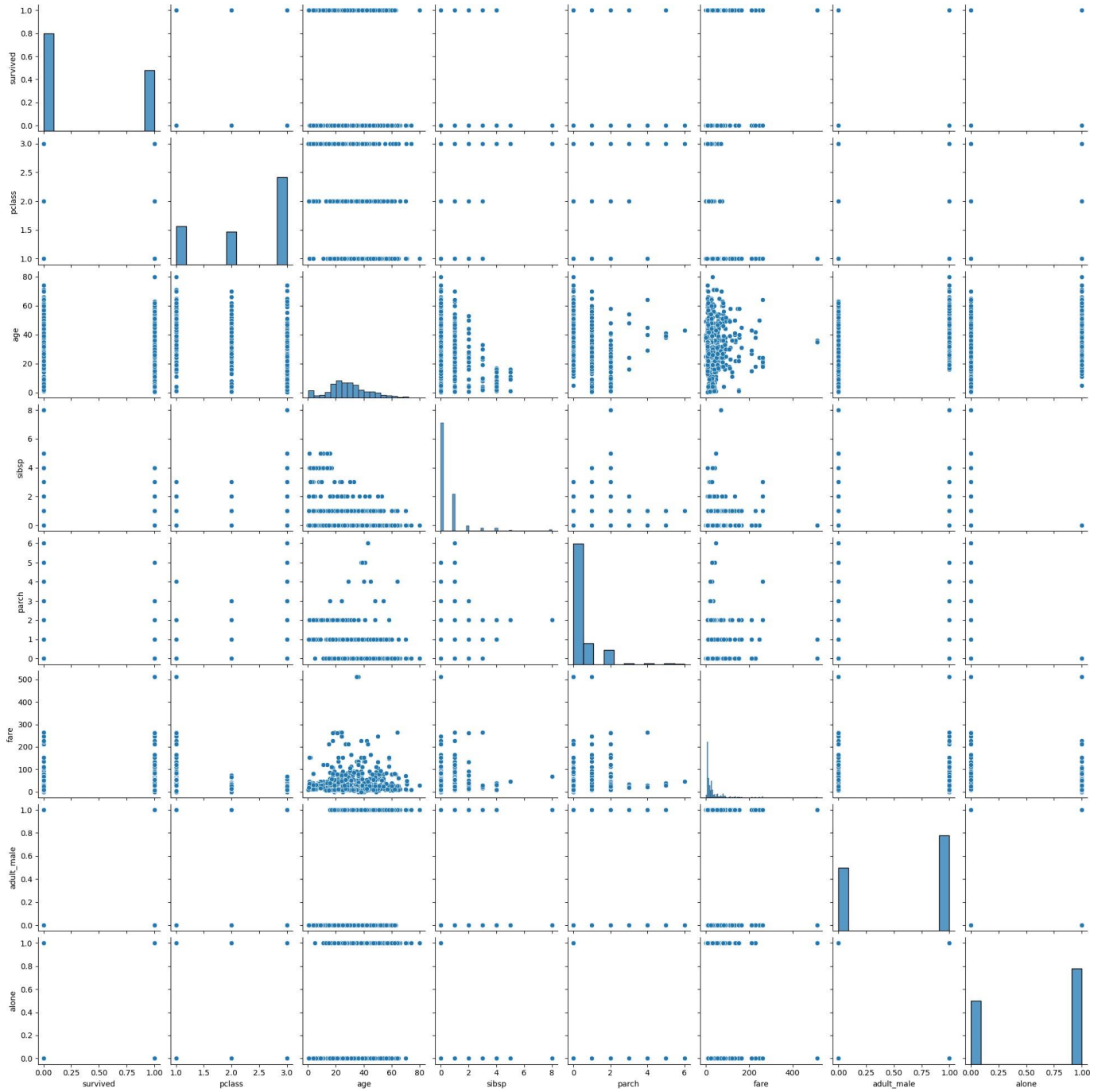
```
<seaborn.axisgrid.JointGrid at 0x16a0cc4c440>
```




```
In [20]: sns.pairplot(df1)
```

Out[20]:

```
<seaborn.axisgrid.PairGrid at 0x16a0bea2810>
```

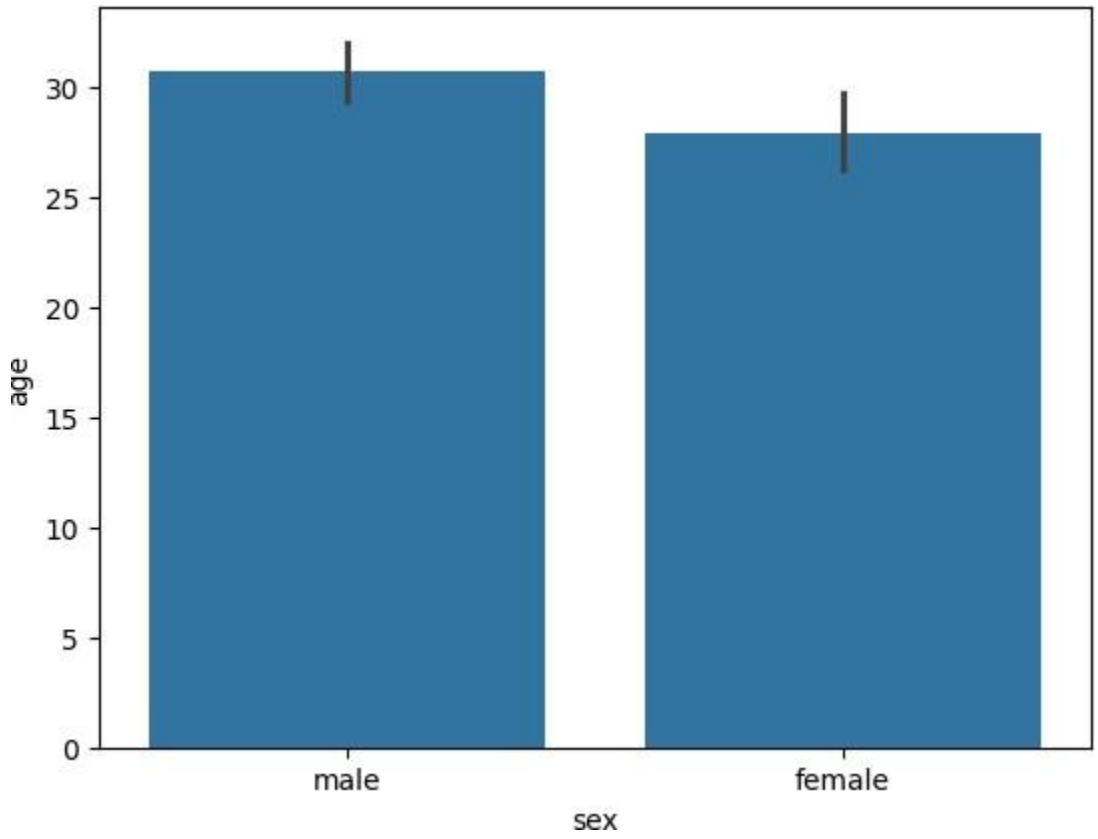


In [21]:

```
sns.barplot(x=df1["sex"],y=df1["age"])
```

Out[21]:

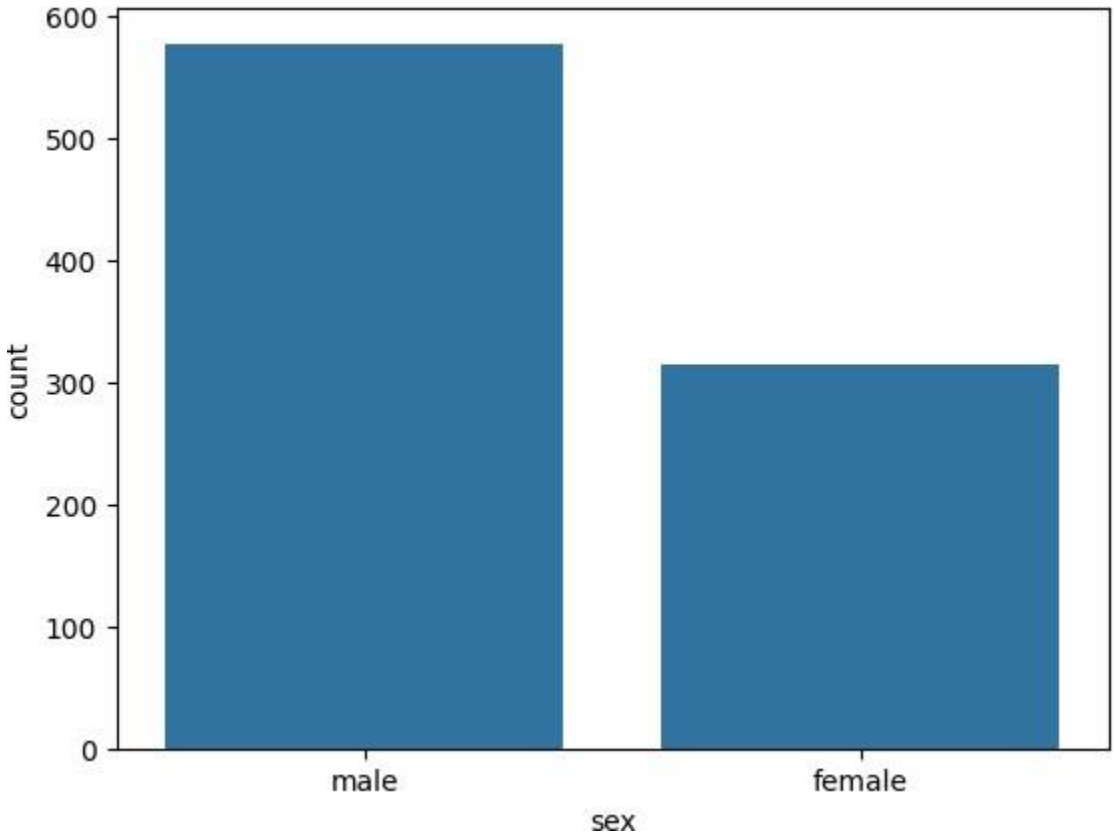
```
<Axes: xlabel='sex', ylabel='age'>
```




```
In [22]: sns.countplot(x=df1["sex"])
```

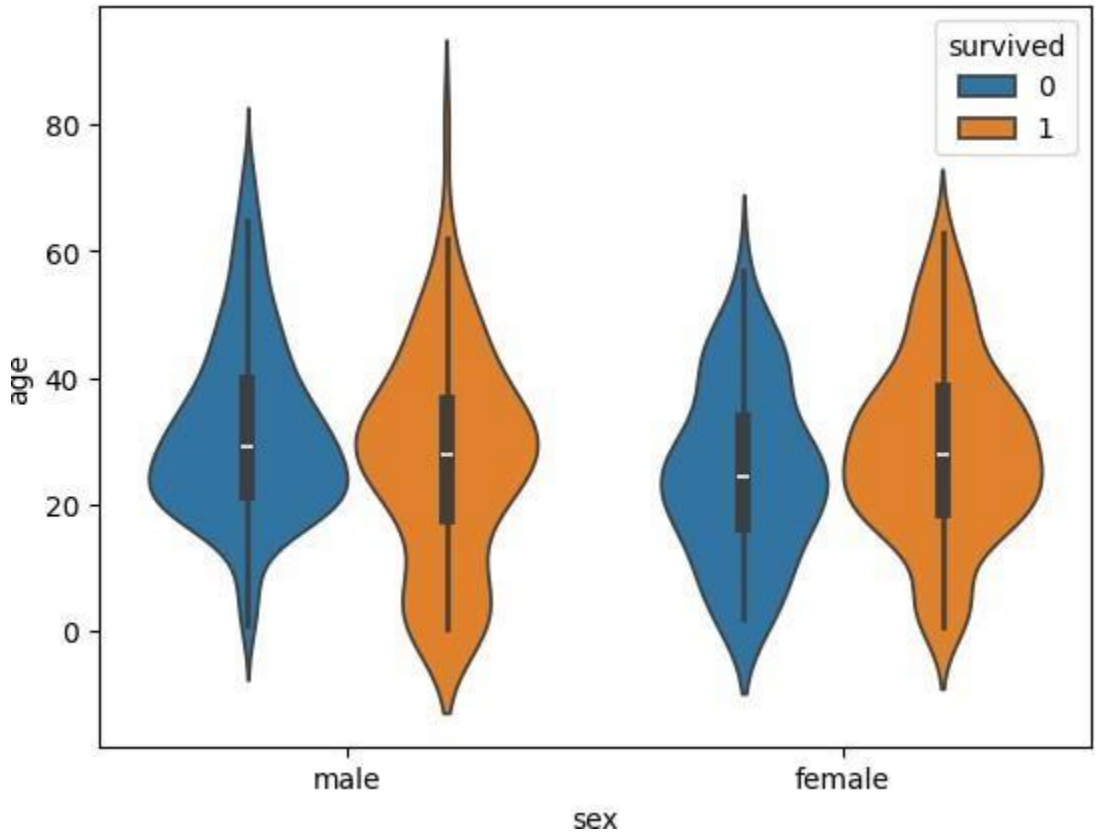
Out[22]:

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



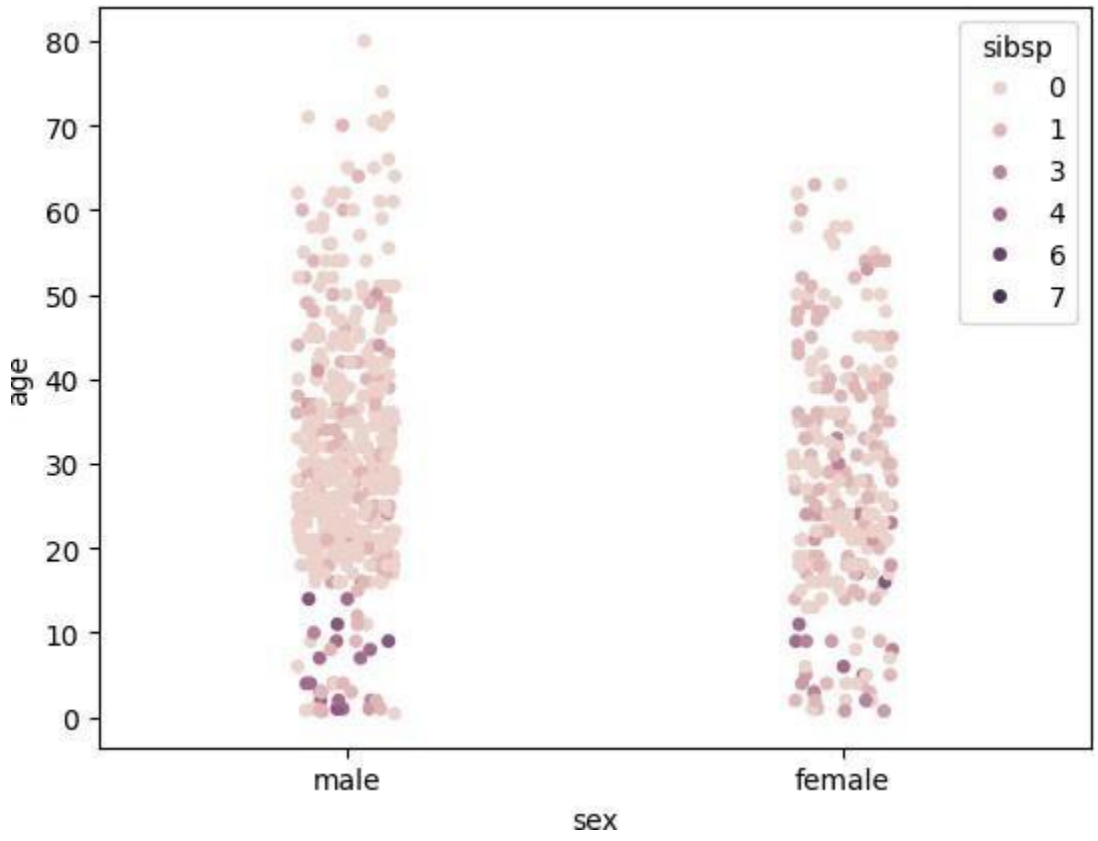
In [23]:
```
sns.violinplot(x=df1["sex"],y=df1["age"], hue=df1["survived"])
```

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



In [24]:
```
sns.stripplot(x=df1["sex"],y=df1["age"],hue=df1["sibsp"])
```

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

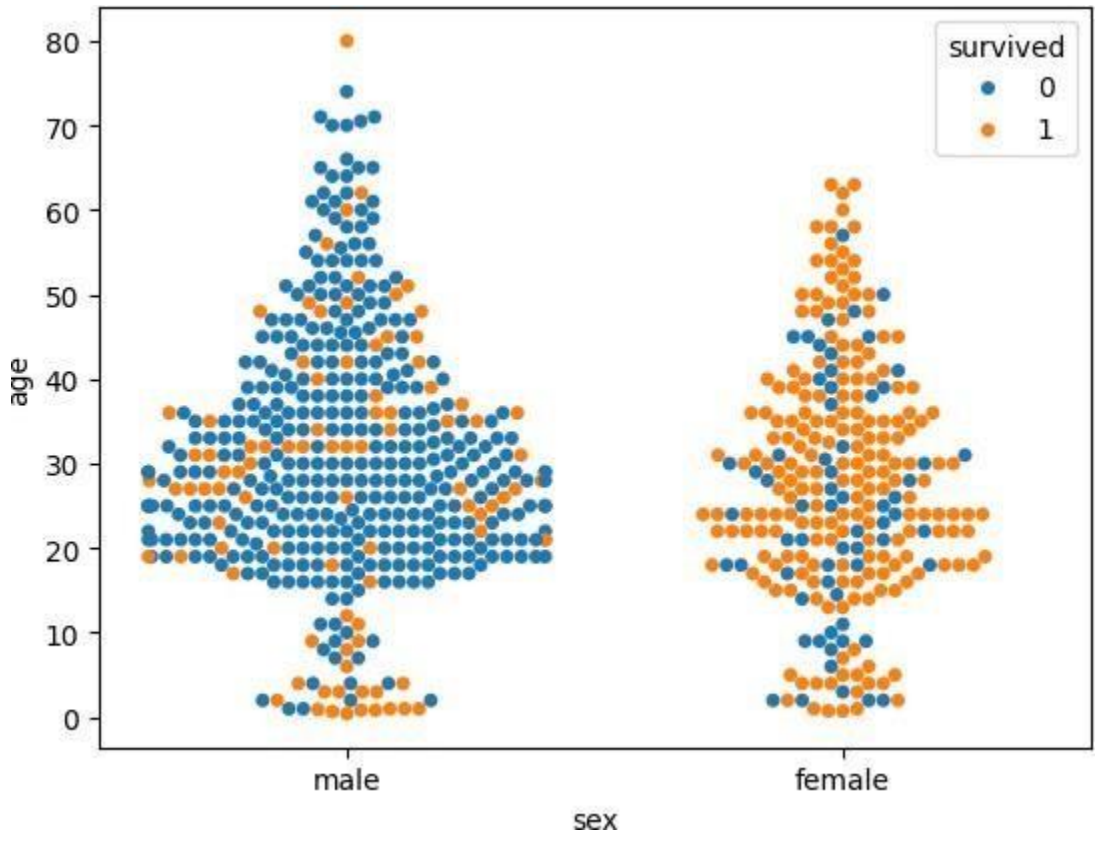


In [25]:

```
sns.swarmplot(x=df1["sex"],y=df1["age"],hue=df1["survived"])
```

Out[25]:

```
<Axes: xlabel='sex', ylabel='age'>
```



In [
]:

```

```