In [3]:
```
pip install plotly
```

```
Requirement already satisfied: plotly in c:\users\rohan\appdata\local\programs\pytho
n\python310\lib\site-packages (5.20.0)
Requirement already satisfied: tenacity>=6.2.0 in c:\users\rohan\appdata\local\progr
ams\python\python310\lib\site-packages (from plotly) (8.2.3)
Requirement already satisfied: packaging in c:\users\rohan\appdata\local\programs\py
thon\python310\lib\site-packages (from plotly) (23.2)
Note: you may need to restart the kernel to use updated packages.
```

In [4]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import plotly.express as px
import warnings
warnings.filterwarnings("ignore")
%matplotlib inline
```

In [5]:
```
sns.get_dataset_names()
```

Out[5]:
```
['anagrams',
 'anscombe',
 'attention',
 'brain_networks',
 'car_crashes',
 'diamonds',
 'dots',
 'dowjones',
 'exercise',
 'flights',
 'fmri',
 'geyser',
 'glue',
 'healthexp',
 'iris',
 'mpg',
 'penguins',
 'planets',
 'seaice',
 'taxis',
 'tips',
 'titanic']
```

In [6]:
```
dataset=sns.load_dataset("titanic")
```

In [7]:
```
dataset
```

Out[7]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adu
0	0	3	male	22.0	1	0	7.2500	S	Third	man	
1	1	1	female	38.0	1	0	71.2833	C	First	woman	
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	
3	1	1	female	35.0	1	0	53.1000	S	First	woman	
4	0	3	male	35.0	0	0	8.0500	S	Third	man	
...	...	...	...	...	...	...	...	...	...	...	
886	0	2	male	27.0	0	0	13.0000	S	Second	man	
887	1	1	female	19.0	0	0	30.0000	S	First	woman	
888	0	3	female	NaN	1	2	23.4500	S	Third	woman	
889	1	1	male	26.0	0	0	30.0000	C	First	man	
890	0	3	male	32.0	0	0	7.7500	Q	Third	man	

891 rows × 15 columns

In [8]:
```
dataset.shape
```

Out[8]:
```
(891, 15)
```

In [9]:
```
dataset.head()
```

Out[9]:

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

In [10]:
```
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
```

In [11]:
```
dataset.describe()
```

Out[11]:

	survived	pclass	age	sibsp	parch	fare
count	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

In [12]:
```
dataset.isna().sum()
```

Out[12]:
```
survived         0
pclass           0
sex              0
age            177
sibsp            0
parch            0
fare             0
embarked         2
class            0
who              0
adult_male       0
deck           688
embark_town      2
alive            0
alone            0
dtype: int64
```

In [13]:
```
dataset['age'] = dataset['age'].fillna(dataset['age'].mean())
```

In [14]:
```
dataset.isna().sum()
```

Out[14]:
```
survived         0
pclass           0
sex              0
age              0
sibsp            0
parch            0
fare             0
embarked         2
class            0
who              0
adult_male       0
deck           688
embark_town      2
alive            0
alone            0
dtype: int64
```

In [15]:
```
def fun1(value):
 if (value == "male"):
    return 1
 else:
    return 0
```

In [16]:
```
def fun2(value):
 if (value == 's'):
    return 0
 elif (value == 'c'):
    return 1
 elif (value == 'q'):
    return 2
 else:
    return 0
```

In [17]:
```
dataset['sex'] = dataset['sex'].apply(fun1)
```

In [18]:
```
dataset['embarked'] = dataset['embarked'].apply(fun2)
```

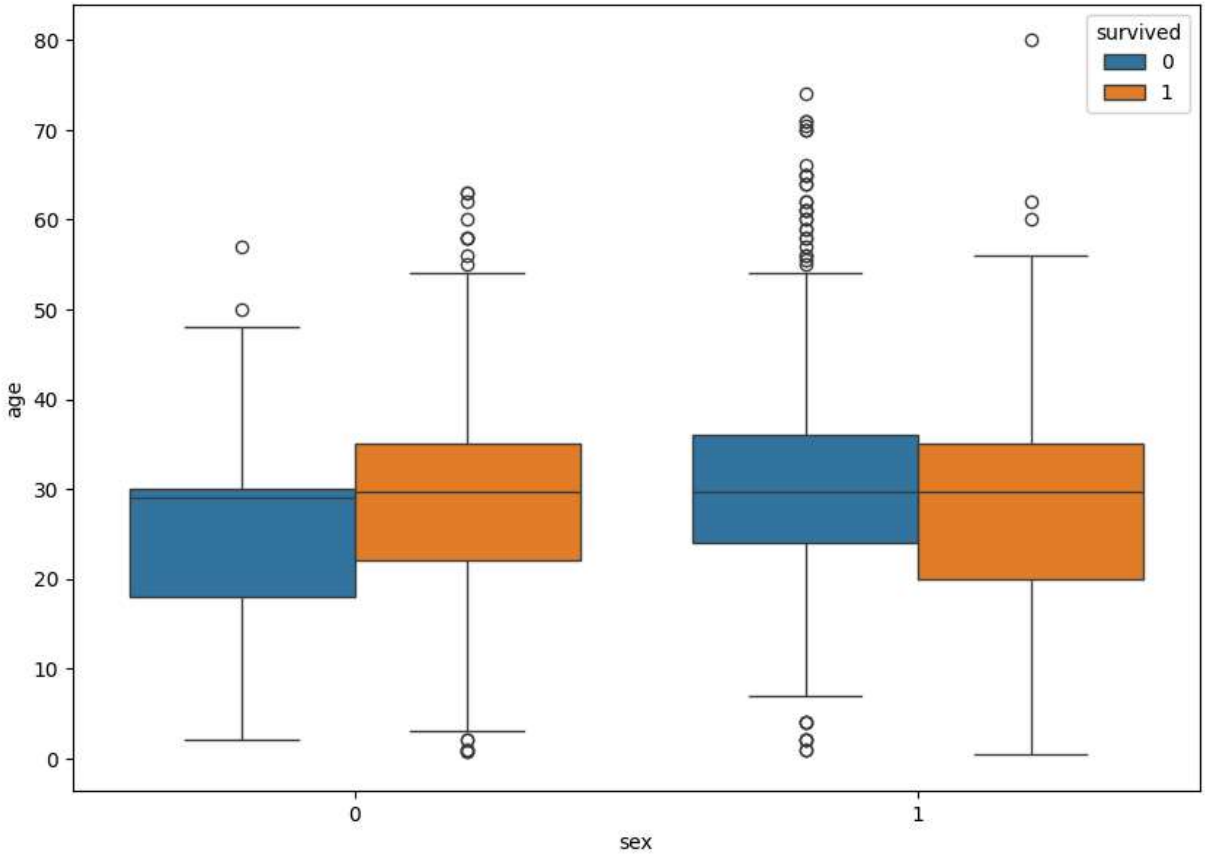
In [19]:
```
dataset = dataset.drop('deck', axis=1)
```

In [20]:
```
dataset.shape
```

Out[20]:
```
(891, 14)
```

In [23]:
```
px.box(dataset['sex'], dataset['age'], dataset['survived'])
```

In [22]:
```
import seaborn as ans
plt.figure(figsize=(10,7))
sns.boxplot(x='sex', y='age',data=dataset,hue="survived")
plt.show()
```



In [ ]:
```
'''
Name: Rohan Chimaji Dhadke
Class: TE-A2
Roll No: 13136
'''
```