In [2]:

```
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 [3]:

```
sns.get_dataset_names()
```

```
Out[3]: ['anagrams',
         'anscombe',
         'attention',
         'brain_networks',
         'car_crashes',
         'diamonds',
         'dots',
         'dowjones',
         'exercise',
         'flights',
         'fmri',
         'geyser',
         'glue',
         'healthexp',
         'iris',
         'mpg',
         'penguins',
         'planets',
         'seaice',
         'taxis',
         'tips',
         'titanic',
         'anagrams',
         'anagrams',
         'anscombe',
         'anscombe',
         'attention',
         'attention',
         'brain_networks',
         'brain_networks',
         'car_crashes',
         'car_crashes',
         'diamonds',
         'diamonds',
         'dots',
         'dots',
         'dowjones',
         'dowjones',
         'exercise',
         'exercise',
         'flights',
         'flights',
         'fmri',
         'fmri',
         'geyser',
         'geyser',
         'glue',
         'glue',
         'healthexp',
         'healthexp',
         'iris',
         'iris',
         'mpg',
         'mpg',
         'penguins',
         'penguins',
         'planets',
         'planets',
         'seaice',
         'seaice',
         'taxis',
         'taxis',
         'tips',
         'tips',
         'titanic',
         'titanic',
         '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 [4]:

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

Out[4]:

```
       survived  pclass  sex     age   sibsp  parch  fare     embarked  class   who    adult_
  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 [5]:

```
df.shape
```

Out[5]:

```
(891, 15)
```

In [6]:

```
df.head()
```

Out[6]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True
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
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

In [7]:

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 15 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
  0survived     891 non-null    int64
  1pclass       891 non-null    int64
  2sex          891 non-null    object
  3age          714 non-null    float64
  4sibsp        891 non-null    int64
  5parch        891 non-null    int64
  6fare         891 non-null    float64
  7embarked     889 non-null    object
  8class        891 non-null    category
  9who          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 [8]:

```
df.describe()
```

Out[8]:

	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 [9]:
```
df.isna().sum()
```

Out[9]:
```
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 [10]:
```
df['age'] = df['age'].fillna(df['age'].mean())
```

In [11]:
```
df.isna().sum()
```

Out[11]:
```
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 [12]:
```
def fun1(value):
    if (value == "male"):
        return 1
    else:
        return 0
```

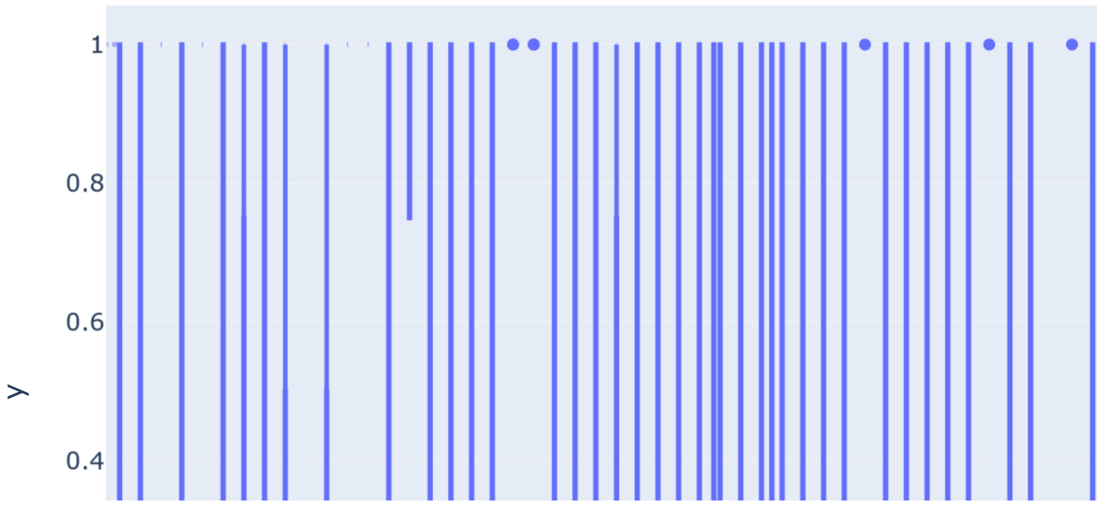
```
In
```

```
In [13]: def fun2(value):
             if (value == 's'):
                 return 0
             elif (value == 'c'):
                 return 1
             elif (value == 'q'):
                 return 2
             else:
                 return 0
```

```
In [14]: df['sex'] = df['sex'].apply(fun1)
         df['embarked'] = df['embarked'].apply(fun2)
         df = df.drop('deck', axis=1)
```

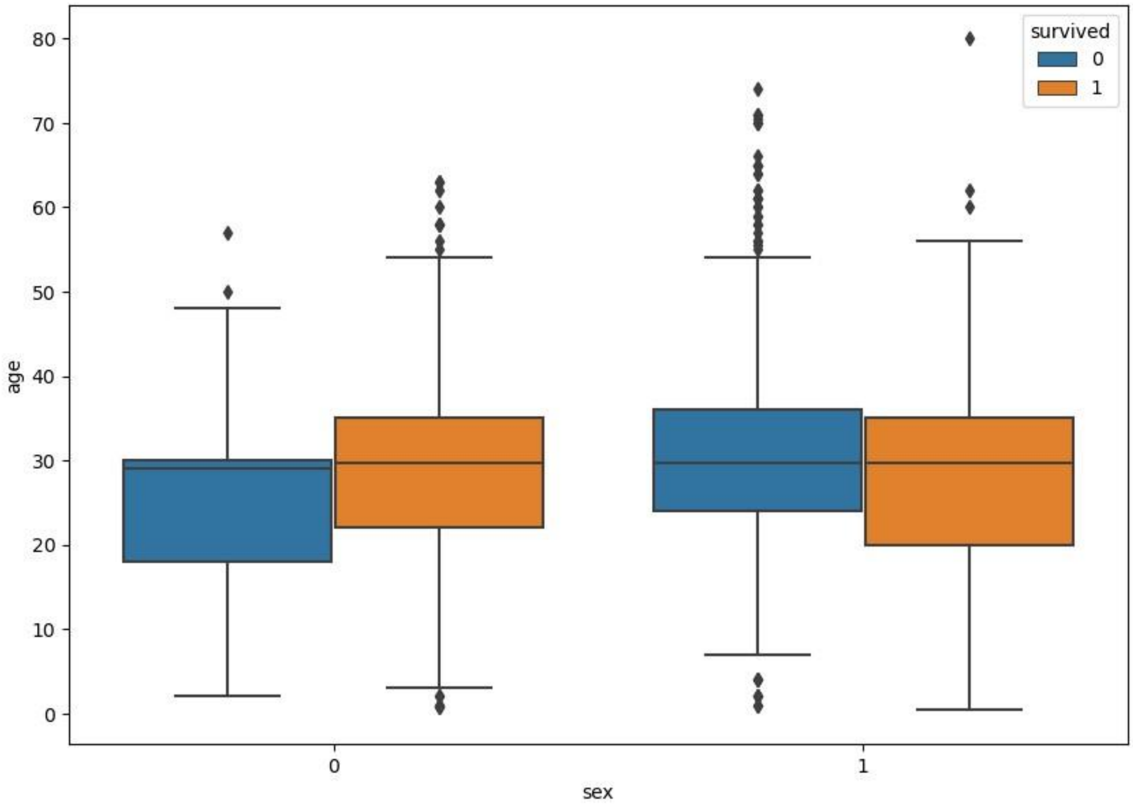
```
Out[15]: (891, 14)
[15]: df.shape
```

```
In [16]: px.box(df['sex'], df['age'], df['survived'])
```



In [18]:

```
plt.figure(figsize=(10,7))
sns.boxplot(x='sex', y='age',data=df,hue="survived")
plt.show()
```



In [ ]:

```
# Dixit Tanmay TE13143
```