In [1]:
```
!pip install seaborn matplotlib
```

```
Requirement already satisfied: seaborn in /home/sargam/.conda/envs/myenv/l
ib/python3.11/site-packages (0.13.2)
Requirement already satisfied: matplotlib in /home/sargam/.conda/envs/myen
v/lib/python3.11/site-packages (3.10.1)
Requirement already satisfied: numpy!=1.24.0,>=1.20 in /home/sargam/.cond
a/envs/myenv/lib/python3.11/site-packages (from seaborn) (2.0.1)
Requirement already satisfied: pandas>=1.2 in /home/sargam/.conda/envs/mye
nv/lib/python3.11/site-packages (from seaborn) (2.2.3)
Requirement already satisfied: contourpy>=1.0.1 in /home/sargam/.conda/env
s/myenv/lib/python3.11/site-packages (from matplotlib) (1.3.2)
Requirement already satisfied: cycler>=0.10 in /home/sargam/.conda/envs/my
env/lib/python3.11/site-packages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /home/sargam/.conda/en
vs/myenv/lib/python3.11/site-packages (from matplotlib) (4.57.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /home/sargam/.conda/en
vs/myenv/lib/python3.11/site-packages (from matplotlib) (1.4.8)
Requirement already satisfied: packaging>=20.0 in /home/sargam/.conda/env
s/myenv/lib/python3.11/site-packages (from matplotlib) (24.2)
Requirement already satisfied: pillow>=8 in /home/sargam/.conda/envs/myen
v/lib/python3.11/site-packages (from matplotlib) (11.2.1)
Requirement already satisfied: pyparsing>=2.3.1 in /home/sargam/.conda/env
s/myenv/lib/python3.11/site-packages (from matplotlib) (3.2.3)
Requirement already satisfied: python-dateutil>=2.7 in /home/sargam/.cond
a/envs/myenv/lib/python3.11/site-packages (from matplotlib) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in /home/sargam/.conda/envs/my
env/lib/python3.11/site-packages (from pandas>=1.2->seaborn) (2024.1)
Requirement already satisfied: tzdata>=2022.7 in /home/sargam/.conda/envs/
myenv/lib/python3.11/site-packages (from pandas>=1.2->seaborn) (2025.2)
Requirement already satisfied: six>=1.5 in /home/sargam/.conda/envs/myenv/
lib/python3.11/site-packages (from python-dateutil>=2.7->matplotlib) (1.1
7.0)
```

In [2]:
```
import seaborn as sns
import matplotlib.pyplot as plt
```

In [3]:
```
# Load Titanic dataset
titanic = sns.load_dataset("titanic")
```

In [4]:
```
titanic
```

Out[4]:

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

891 rows × 15 columns

In [5]:
```
titanic.head(10)
```

Out[5]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	wh
0	0	3	male	22.0	1	0	7.2500	S	Third	ma
1	1	1	female	38.0	1	0	71.2833	C	First	woma
2	1	3	female	26.0	0	0	7.9250	S	Third	woma
3	1	1	female	35.0	1	0	53.1000	S	First	woma
4	0	3	male	35.0	0	0	8.0500	S	Third	ma
5	0	3	male	NaN	0	0	8.4583	Q	Third	ma
6	0	1	male	54.0	0	0	51.8625	S	First	ma
7	0	3	male	2.0	3	1	21.0750	S	Third	chil
8	1	3	female	27.0	0	2	11.1333	S	Third	woma
9	1	2	female	14.0	1	0	30.0708	C	Second	chil

In [6]:
```
titanic.info
```

Out[6]:
```
<bound method DataFrame.info of      survived  pclass     sex   age  sib
sp  parch     fare embarked   class  \
0           0       3    male  22.0      1      0   7.2500        S   Th
ird
1           1       1  female  38.0      1      0  71.2833        C   Fi
rst
2           1       3  female  26.0      0      0   7.9250        S   Th
ird
3           1       1  female  35.0      1      0  53.1000        S   Fi
rst
4           0       3    male  35.0      0      0   8.0500        S   Th
ird
..        ...     ...     ...   ...    ...    ...      ...      ...
...
886         0       2    male  27.0      0      0  13.0000        S  Sec
ond
887         1       1  female  19.0      0      0  30.0000        S   Fi
rst
888         0       3  female   NaN      1      2  23.4500        S   Th
ird
889         1       1    male  26.0      0      0  30.0000        C   Fi
rst
890         0       3    male  32.0      0      0   7.7500        Q   Th
ird

       who  adult_male deck  embark_town alive  alone
0      man        True  NaN  Southampton    no  False
1    woman       False    C    Cherbourg   yes  False
2    woman       False  NaN  Southampton   yes   True
3    woman       False    C  Southampton   yes  False
4      man        True  NaN  Southampton    no   True
..     ...         ...  ...          ...   ...    ...
886    man        True  NaN  Southampton    no   True
887  woman       False    B  Southampton   yes   True
888  woman       False  NaN  Southampton    no  False
889    man        True    C    Cherbourg   yes   True
890    man        True  NaN   Queenstown    no   True

[891 rows x 15 columns]>
```

In [7]:
```
titanic.describe()
```

Out[7]:

	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]:
```
titanic.loc[:,["survived","alive"]]
```

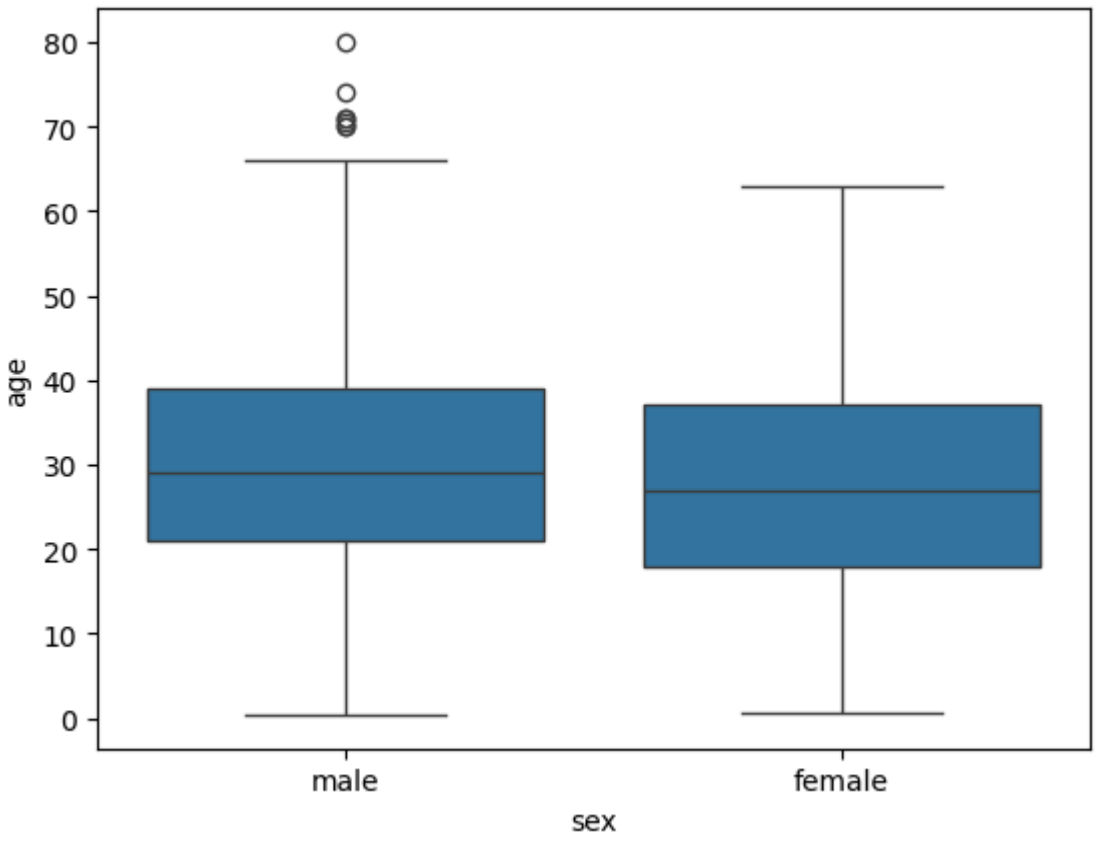
Out[9]:

	survived	alive
0	0	no
1	1	yes
2	1	yes
3	1	yes
4	0	no
...	...	...
886	0	no
887	1	yes
888	0	no
889	1	yes
890	0	no

891 rows × 2 columns

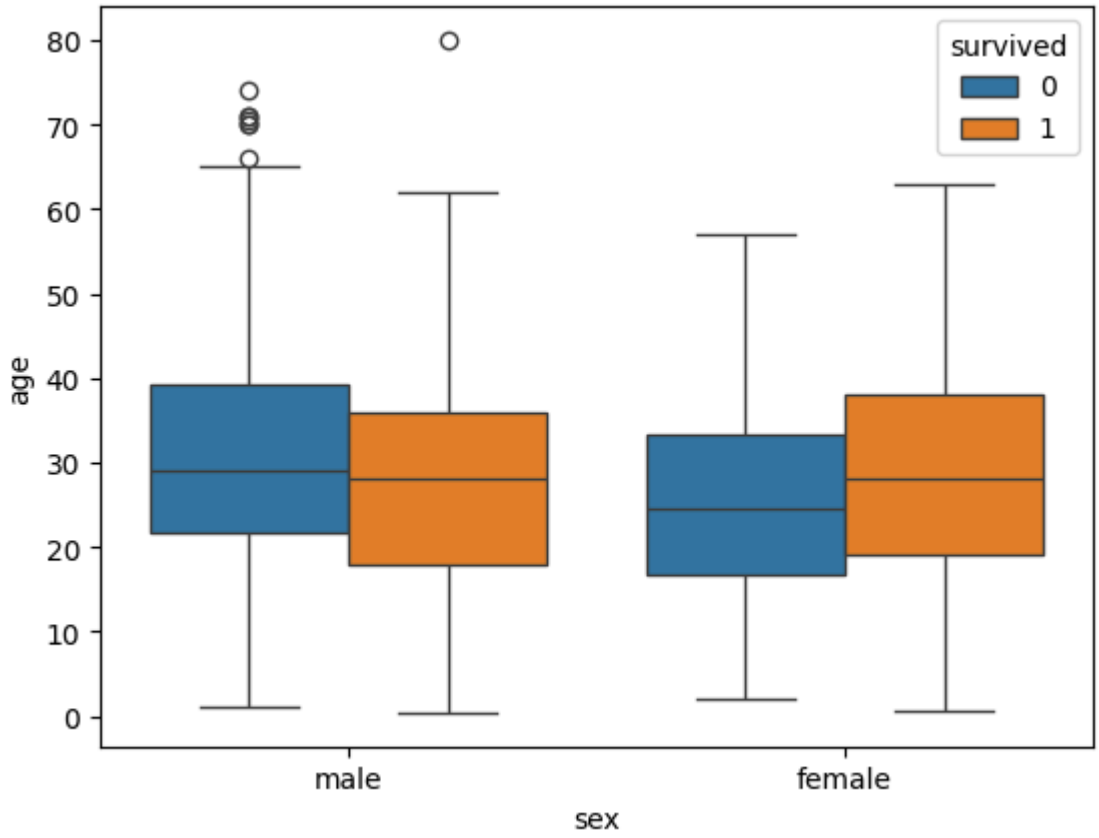
In [10]:
```
sns.boxplot(x="sex",y="age",data=titanic)
```

Out[10]:
```
<Axes: xlabel='sex', ylabel='age'>
```

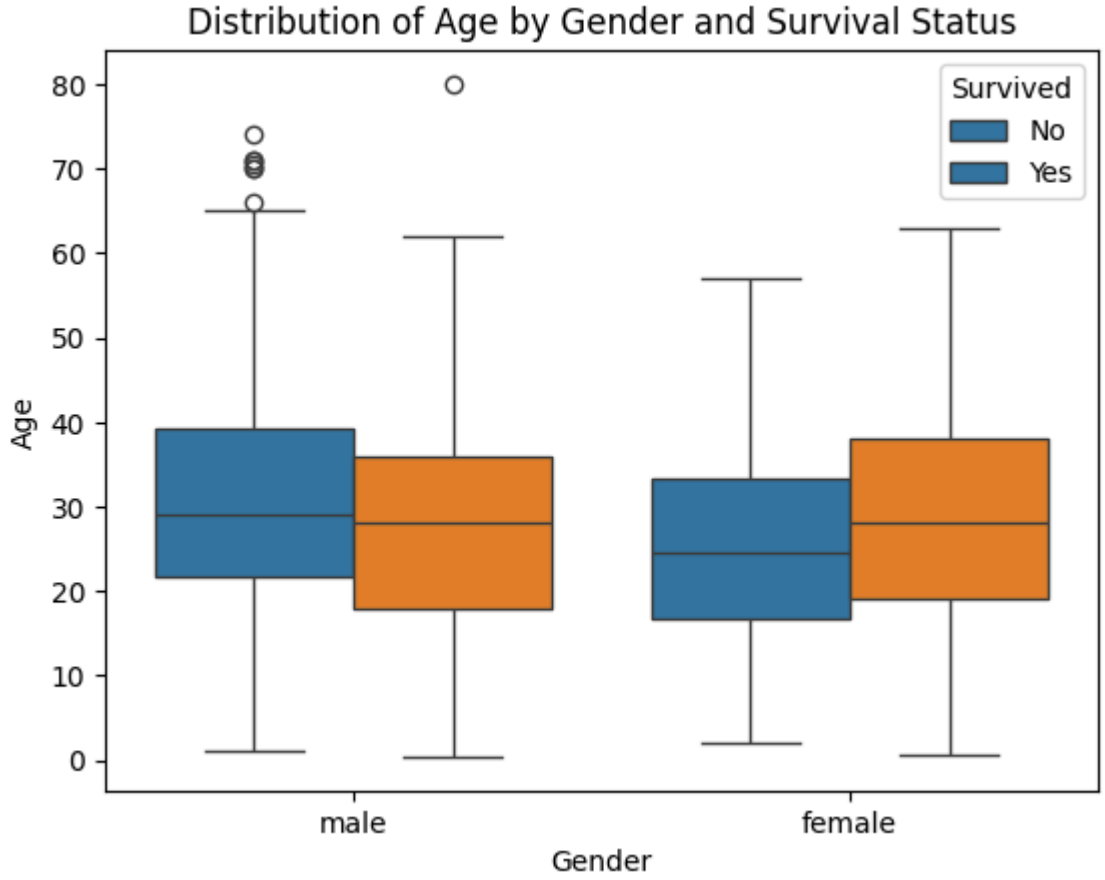


In [11]:
```
sns.boxplot(x="sex",y="age",data=titanic,hue="survived")
```

Out[11]: <Axes: xlabel='sex', ylabel='age'>



In [12]:
```
# Box plot with 'sex' on x-axis, 'age' on y-axis, hue='survived'
sns.boxplot(x="sex", y="age", hue="survived", data=titanic)
plt.title("Distribution of Age by Gender and Survival Status")
plt.xlabel("Gender")
plt.ylabel("Age")
plt.legend(title="Survived", labels=["No", "Yes"])
plt.show()
```


Distribution of Age by Gender and Survival Status
Survived
No
Yes
Age
0
10
20
30
40
50
60
70
80
male
female
Gender

In [ ]: