In [1]:
```python
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [3]:
```python
titanic_data = pd.read_csv('/train.csv')
```

In [4]:
```python
titanic_data.head()
```

Out[4]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599 7
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803 5
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450

In [7]:
```python
titanic_data.shape
```

Out[7]: (891, 12)

In [8]:
```python
titanic_data.describe()
```

Out[8]:

	PassengerId	Survived	Pclass	Age	SibSp	Parch	
count	891.000000	891.000000	891.000000	714.000000	891.000000	891.000000	89
mean	446.000000	0.383838	2.308642	29.699118	0.523008	0.381594	3
std	257.353842	0.486592	0.836071	14.526497	1.102743	0.806057	4
min	1.000000	0.000000	1.000000	0.420000	0.000000	0.000000	
25%	223.500000	0.000000	2.000000	20.125000	0.000000	0.000000	
50%	446.000000	0.000000	3.000000	28.000000	0.000000	0.000000	1
75%	668.500000	1.000000	3.000000	38.000000	1.000000	0.000000	3
max	891.000000	1.000000	3.000000	80.000000	8.000000	6.000000	51

In [9]:
```python
titanic_data['Survived'].value_counts()
```

Out[9]:

	count
Survived	
0	549
1	342

dtype: int64

In [10]:
```python
sns.countplot(x=titanic_data['Survived'], hue=titanic_data['Pclass'])
```

Out[10]: <Axes: xlabel='Survived', ylabel='count'>
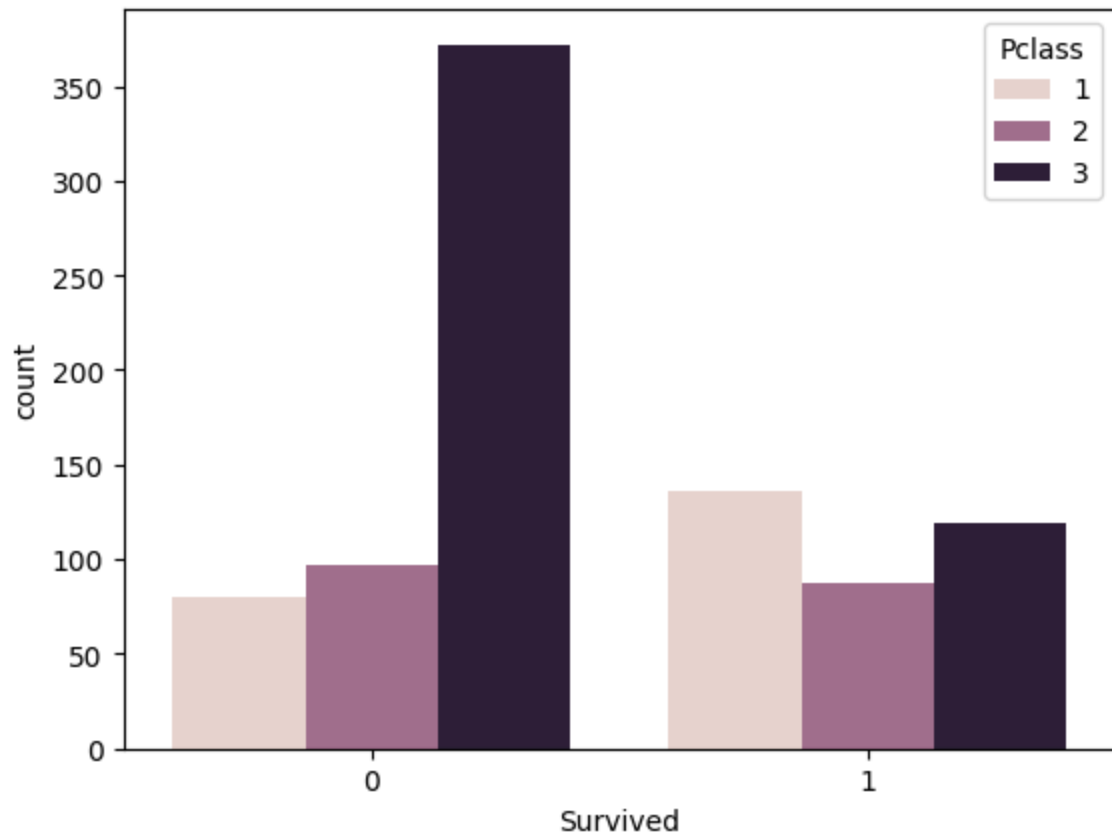
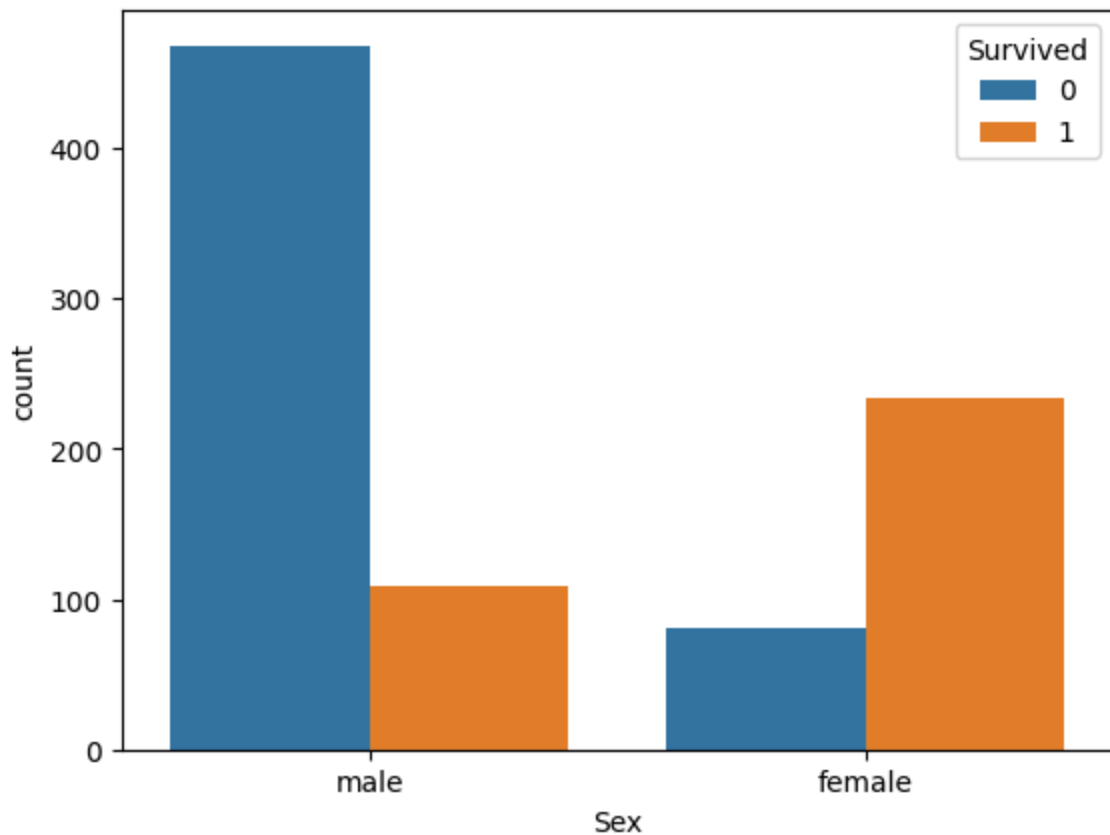In [11]: `titanic_data['Sex']`

Out[11]:

	Sex
0	male
1	female
2	female
3	female
4	male
...	...
886	male
887	female
888	female
889	male
890	male

891 rows × 1 columns

dtype: object

In [12]: ```python
sns.countplot(x=titanic_data['Sex'],hue=titanic_data['Survived'])
```

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


In [13]: ```python
titanic_data.groupby('Sex')[['Survived']].mean()
```

Out[13]:

| | Survived |
|---|---|
| **Sex** | |
| **female** | 0.742038 |
| **male** | 0.188908 |

In [14]: ```python
titanic_data['Sex'].unique()
```

Out[14]: ```
array(['male', 'female'], dtype=object)
```

In [15]: ```python
from sklearn.preprocessing import LabelEncoder
labelencoder=LabelEncoder()
```

In [17]: ```python
titanic_data['Sex']=labelencoder.fit_transform(titanic_data['Sex'])
titanic_data.head()
```

Out[17]:

| | PassengerId | Survived | Pclass | Name | Sex | Age | SibSp | Parch | Ticket | |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 1 | 0 | 3 | Braund, Mr. Owen Harris | 1 | 22.0 | 1 | 0 | A/5 21171 | 7.2 |
| **1** | 2 | 1 | 1 | Cumings, Mrs. John Bradley (Florence Briggs Th... | 0 | 38.0 | 1 | 0 | PC 17599 | 71.2 |
| **2** | 3 | 1 | 3 | Heikkinen, Miss. Laina | 0 | 26.0 | 0 | 0 | STON/O2. 3101282 | 7.9 |
| **3** | 4 | 1 | 1 | Futrelle, Mrs. Jacques Heath (Lily May Peel) | 0 | 35.0 | 1 | 0 | 113803 | 53.1 |
| **4** | 5 | 0 | 3 | Allen, Mr. William Henry | 1 | 35.0 | 0 | 0 | 373450 | 8.0 |

In [18]:
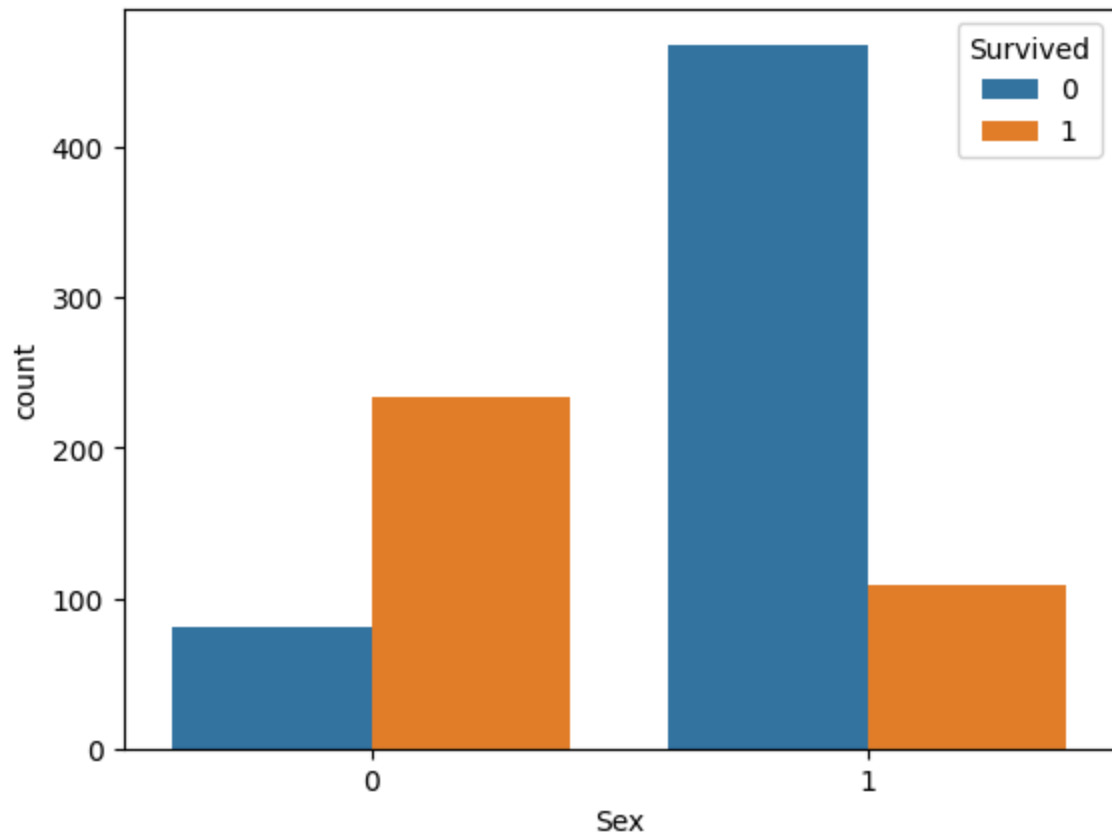```python
titanic_data['Sex'],titanic_data['Survived']
```

Out[18]:
```
(0      1
 1      0
 2      0
 3      0
 4      1
       ..
 886    1
 887    0
 888    0
 889    1
 890    1
 Name: Sex, Length: 891, dtype: int64,
 0      0
 1      1
 2      1
 3      1
 4      0
       ..
 886    0
 887    1
 888    0
 889    1
 890    0
 Name: Survived, Length: 891, dtype: int64)
```

In [19]:
```python
sns.countplot(x=titanic_data['Sex'], hue=titanic_data['Survived'])
```

Out[19]:   <Axes: xlabel='Sex', ylabel='count'>

In [20]:   `titanic_data.isna().sum()`

Out[20]:

	0
PassengerId	0
Survived	0
Pclass	0
Name	0
Sex	0
Age	177
SibSp	0
Parch	0
Ticket	0
Fare	0
Cabin	687
Embarked	2

dtype: int64

In [30]:
```python
titanic_data_final=titanic_data
titanic_data_final.head(10)
```

Out[30]:

	PassengerId	Survived	Pclass	Name	Sex	SibSp	Parch	Ticket	Fare
0	1	0	3	Braund, Mr. Owen Harris	1	1	0	A/5 21171	7.2500
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	0	1	0	PC 17599	71.2833
2	3	1	3	Heikkinen, Miss. Laina	0	0	0	STON/O2. 3101282	7.9250
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	0	1	0	113803	53.1000
4	5	0	3	Allen, Mr. William Henry	1	0	0	373450	8.0500
5	6	0	3	Moran, Mr. James	1	0	0	330877	8.4583
6	7	0	1	McCarthy, Mr. Timothy J	1	0	0	17463	51.8625
7	8	0	3	Palsson, Master. Gosta Leonard	1	3	1	349909	21.0750
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	0	0	2	347742	11.1333
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	0	1	0	237736	30.0708

In [31]:
```python
x=titanic_data[['Pclass','Sex']]
y=titanic_data['Survived']
```

In [32]:
```python
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.2,random_stat
```

In [33]:
```python
from sklearn.linear_model import LogisticRegression
log=LogisticRegression(random_state=0)
log.fit(x_train,y_train)
```

Out[33]:
```
▼        LogisticRegression        ⓘ ❓

LogisticRegression(random_state=0)
```

In [34]:
```python
pred=print(log.predict(x_test))
```

```
[0 0 0 1 1 0 1 1 0 1 0 1 0 1 0 1 1 1 0 0 0 0 0 1 0 0 1 1 0 1 1 1 0 1 0 0 0 0 0
 0 0 0 0 0 0 1 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 1 1 0 1 0 1 0 1 0 1 1 1 0 0 0
 0 1 0 0 0 0 0 0 1 0 0 1 1 1 1 0 0 0 0 1 1 0 1 0 0 0 0 0 0 0 1 1 1 1 0 1 0
 1 0 1 0 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 1 1 1 1 0 1
 1 0 0 1 1 0 1 0 1 0 1 1 0 0 1 1 0 0 0 0 0 0 0 1 0 0 1 0 1 0 0 0]
```

In [35]:
```python
print(y_test)
```

```
495    0
648    0
278    0
31     1
255    1
       ..
780    1
837    0
215    1
833    0
372    0
Name: Survived, Length: 179, dtype: int64
```

In [36]:
```python
import warnings
warnings.filterwarnings("ignore")

res=log.predict([[2,0]])

if(res==0):
    print("Oops! Not survived")
else:
    print("Survived")
```

```
Survived
```