```python
In [1]:  import pandas as pd
         import numpy as np
         import matplotlib.pyplot as plt
         import seaborn as sns
         import warnings
         warnings.filterwarnings('ignore')
         %matplotlib inline
```

```python
In [2]:  data = pd.read_csv('Titanic.csv')
         data.sample(10)
```

				Georgetta Light)					2315	
151	152	1.0	1	Pears, Mrs. Thomas (Edith Wearne)	female	22.00	1	0	113776	66.6(
755	756	1.0	2	Hamalainen, Master. Viljo	male	0.67	1	1	250649	14.5(
1002	1003	NaN	3	Shine, Miss. Ellen Natalia	female	NaN	0	0	330968	7.7
54	55	0.0	1	Ostby, Mr. Engelhart Cornelius	male	65.00	0	1	113509	61.9

10 rows × 21 columns

```python
In [3]:  data.describe()
```

Out[3]:

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Far
count	1309.000000	891.000000	1309.000000	1046.000000	1309.000000	1309.000000	1308.00000(
mean	655.000000	0.383838	2.294882	29.881138	0.498854	0.385027	33.29547!
std	378.020061	0.486592	0.837836	14.413493	1.041658	0.865560	51.75866:
min	1.000000	0.000000	1.000000	0.170000	0.000000	0.000000	0.00000(
25%	328.000000	0.000000	2.000000	21.000000	0.000000	0.000000	7.89580(
50%	655.000000	0.000000	3.000000	28.000000	0.000000	0.000000	14.45420(
75%	982.000000	1.000000	3.000000	39.000000	1.000000	0.000000	31.27500(
max	1309.000000	1.000000	3.000000	80.000000	8.000000	9.000000	512.32920(

In [4]: `data.info()`

```
 3   Name         1309 non-null   object
 4   Sex          1309 non-null   object
 5   Age          1046 non-null   float64
 6   SibSp        1309 non-null   int64
 7   Parch        1309 non-null   int64
 8   Ticket       1309 non-null   object
 9   Fare         1308 non-null   float64
 10  Cabin        295 non-null    object
 11  Embarked     1307 non-null   object
 12  WikiId       1304 non-null   float64
 13  Name_wiki    1304 non-null   object
 14  Age_wiki     1302 non-null   float64
 15  Hometown     1304 non-null   object
 16  Boarded      1304 non-null   object
 17  Destination  1304 non-null   object
 18  Lifeboat     502 non-null    object
 19  Body         130 non-null    object
 20  Class        1304 non-null   float64
dtypes: float64(6), int64(4), object(11)
memory usage: 214.9+ KB
```

In [5]: `data.shape`

Out[5]: `(1309, 21)`

In [6]: `data.isnull().sum()`

Out[6]:
```
PassengerId      0
Survived       418
Pclass           0
Name             0
Sex              0
Age            263
SibSp            0
Parch            0
Ticket           0
Fare             1
Cabin         1014
Embarked         2
WikiId           5
Name_wiki        5
Age_wiki         7
Hometown         5
Boarded          5
Destination      5
Lifeboat       807
Body          1179
Class            5
dtype: int64
```

In [7]: `data.sample(10)`

Out[7]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Far
546	547	1.0	2	Beane, Mrs. Edward (Ethel Clarke)	female	19.0	1	0	2908	26.000
743	744	0.0	3	McNamee, Mr. Neal	male	24.0	1	0	376566	16.100
71	72	0.0	3	Goodwin, Miss. Lillian Amy	female	16.0	5	2	CA 2144	46.900
626	627	0.0	2	Kirkland, Rev. Charles Leonard	male	57.0	0	0	219533	12.350
1275	1276	NaN	2	Wheeler, Mr. Edwin Frederick""	male	NaN	0	0	SC/PARIS 2159	12.875
202	203	0.0	3	Johanson, Mr. Jakob Alfred	male	34.0	0	0	3101264	6.495
679	680	1.0	1	Cardeza, Mr. Thomas Drake Martinez	male	36.0	0	1	PC 17755	512.329
451	452	0.0	3	Hagland, Mr. Ingvald Olai Olsen	male	NaN	1	0	65303	19.966
1288	1289	NaN	1	Frolicher-Stehli, Mrs. Maxmillian (Margaretha ...	female	48.0	1	1	13567	79.200
954	955	NaN	3	Bradley, Miss. Bridget Delia	female	22.0	0	0	334914	7.725

10 rows × 21 columns
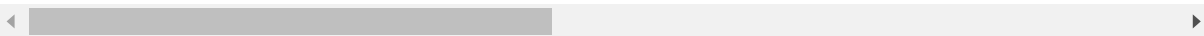
UNIVARIATE ANALYSIS

KDE PLOT

In [8]:
```python
plt.figure(figsize=(4,3))
sns.kdeplot(data=data.PassengerId)
plt.show()
```
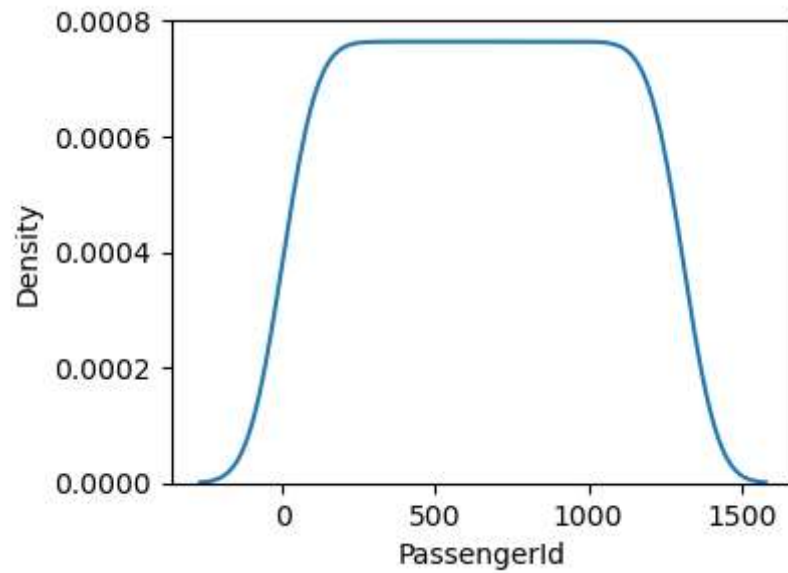
HISTPLOT

In [9]:
```python
sns.histplot(data.Fare)
plt.show()
```
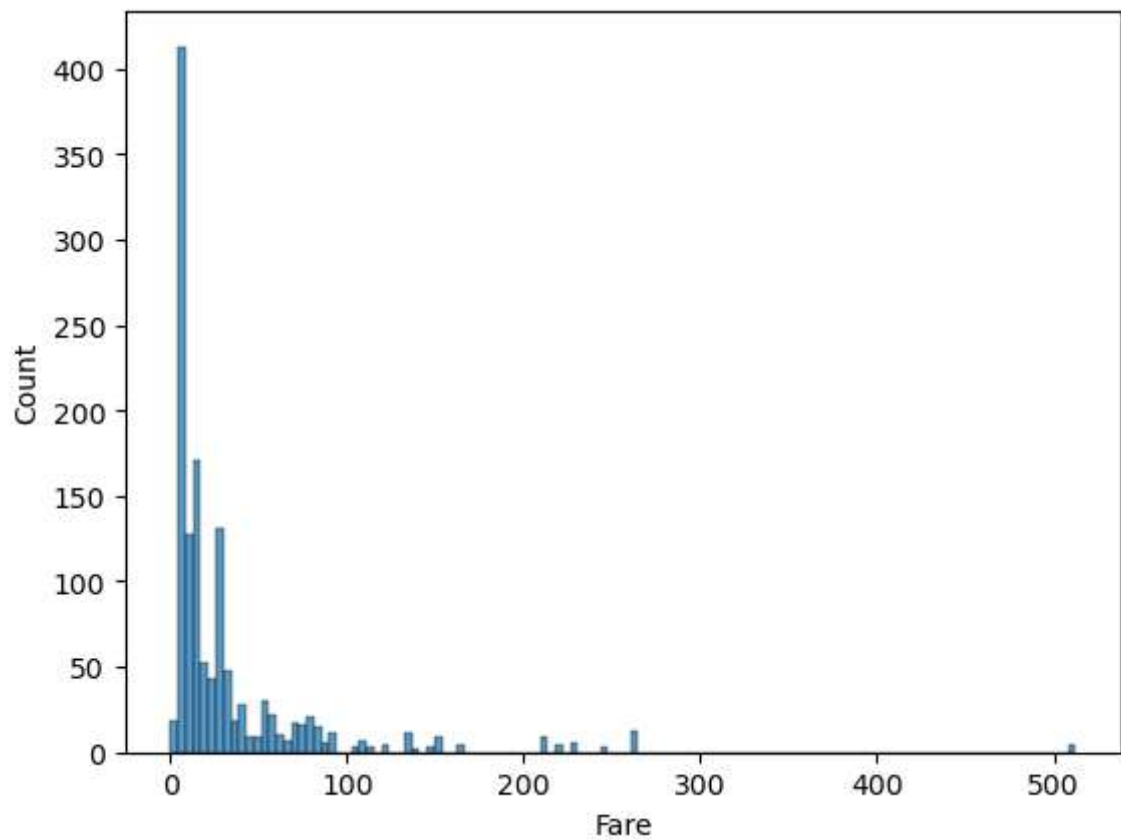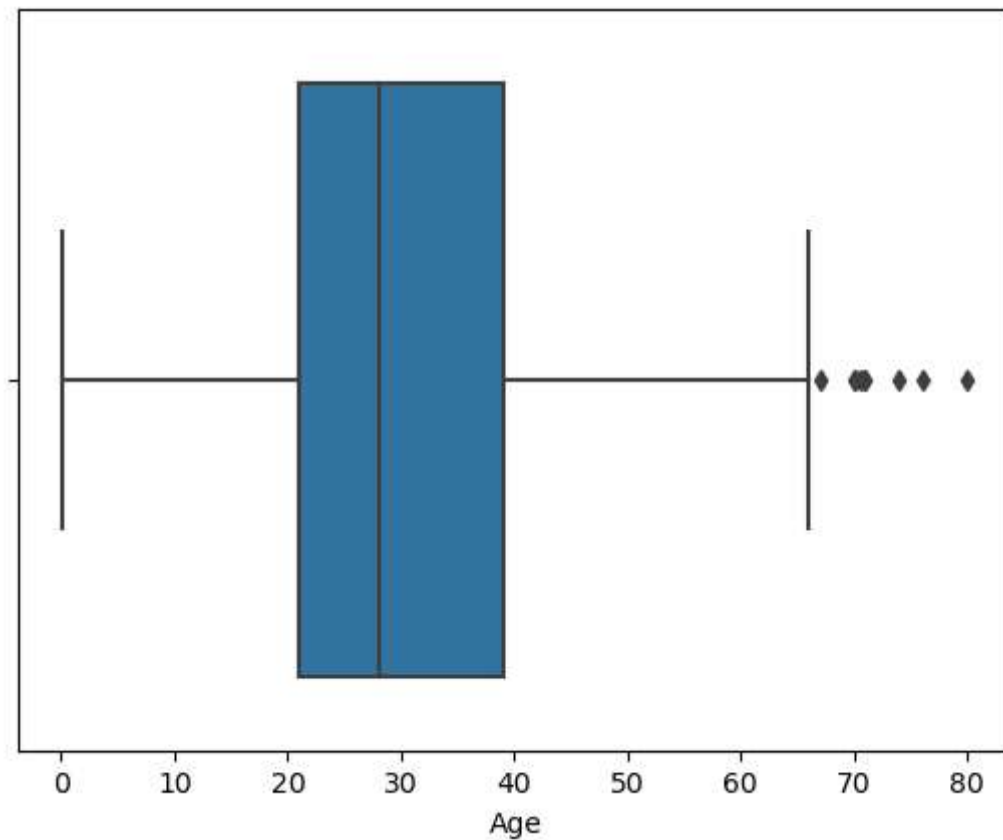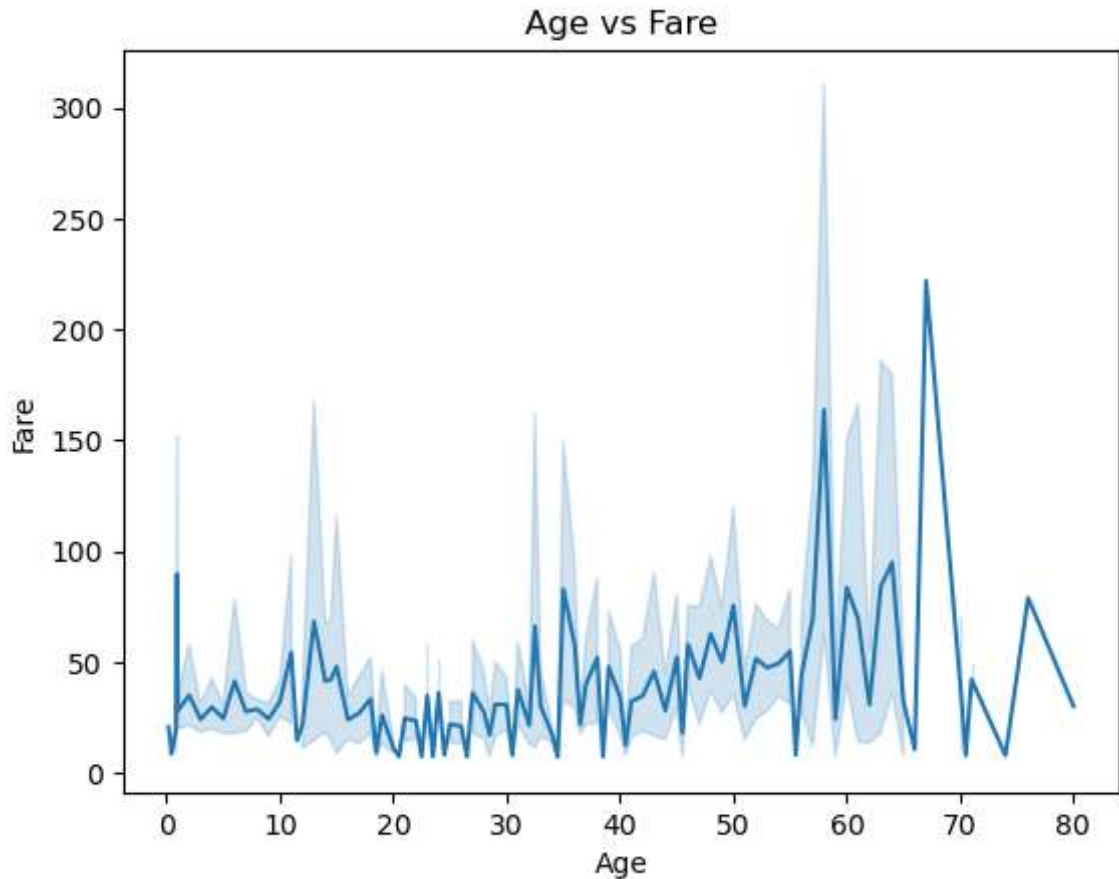
BOX PLOT

```
In [10]:  sns.boxplot('Age', data=data)
          plt.show()
```


MULTI VARIATE ANALYSIS

LINE PLOT

```
In [11]: sns.lineplot('Age', 'Fare', data=data)
         plt.title("Age vs Fare")
         plt.show()
```


PIE CHART

```
In [12]: data.columns
```

```
Out[12]: Index(['PassengerId', 'Survived', 'Pclass', 'Name', 'Sex', 'Age', 'SibSp',
                'Parch', 'Ticket', 'Fare', 'Cabin', 'Embarked', 'WikiId', 'Name_wiki',
                'Age_wiki', 'Hometown', 'Boarded', 'Destination', 'Lifeboat', 'Body',
                'Class'],
               dtype='object')
```

```
In [13]: Pclass_Survived = data.groupby(['Pclass'])['Survived'].sum()
```

In [14]:
```
Pclass_Survived
```

Out[14]:
```
Pclass
1    136.0
2     87.0
3    119.0
Name: Survived, dtype: float64
```

In [15]:
```
sns.set_style('ticks')
Pclass_Survived.plot.pie()
plt.legend()
plt.show()
```
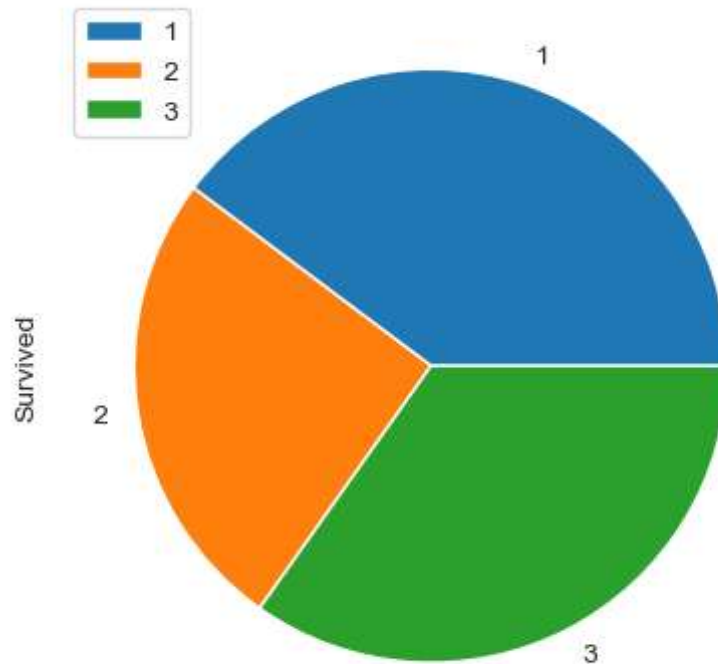

In [16]:
```
Pclass_Sex_Survived = data.groupby(['Pclass','Sex'])['Survived'].sum()
```

In [17]:
```
Pclass_Sex_Survived.reset_index()
```

Out[17]:

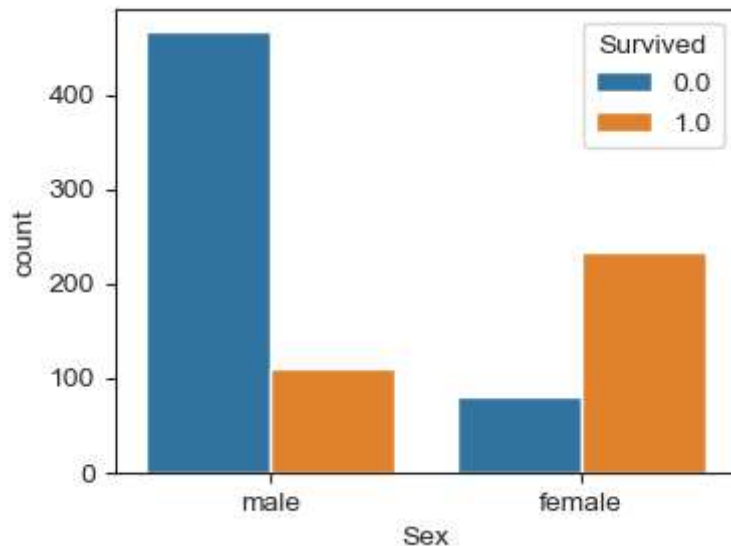|	Pclass	Sex	Survived
0	1	female	91.0
1	1	male	45.0
2	2	female	70.0
3	2	male	17.0
4	3	female	72.0
5	3	male	47.0

In [18]:
```python
Pclass_Sex_Survived.plot.pie(autopct = '%1.2f%%')
plt.legend(bbox_to_anchor=(1.5, 1), loc='upper left', borderaxespad=0)
plt.show()
```
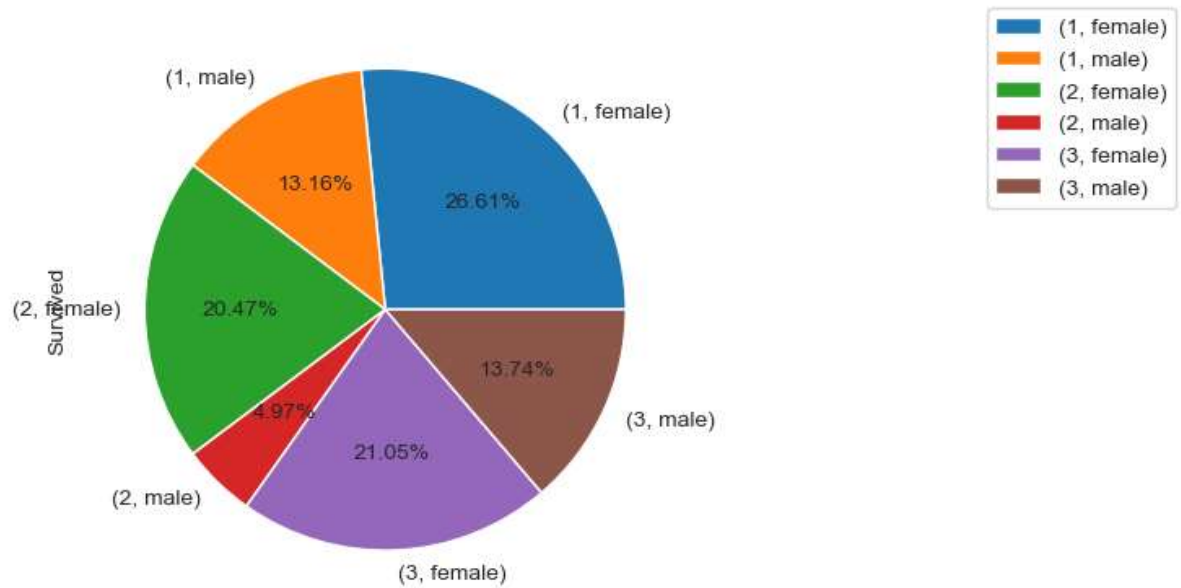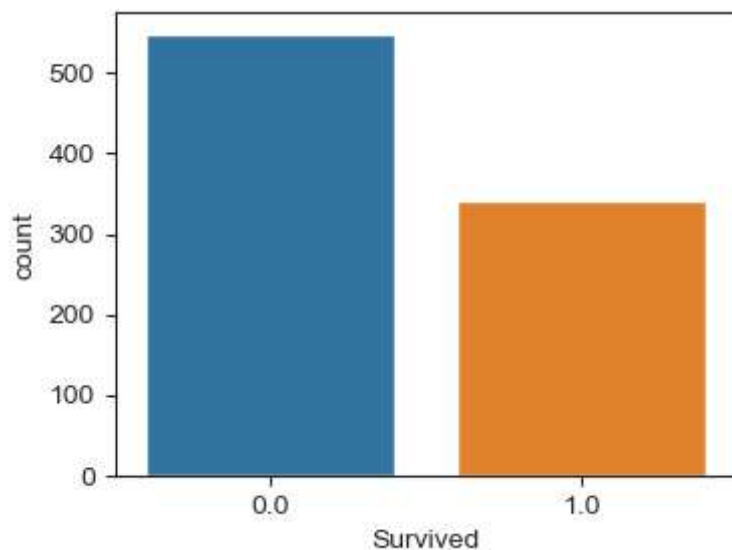

BAR CHART

In [19]:
```python
plt.figure(figsize=(4,3))
sns.countplot('Sex', hue = 'Survived',data=data)
plt.show()
```
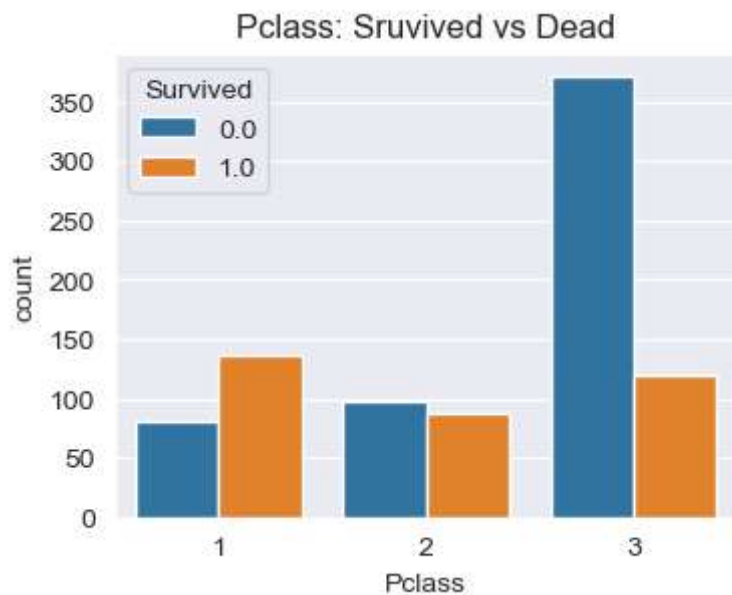
Count plot

In [20]:
```python
plt.figure(figsize=(4,3))
sns.countplot('Survived', data=data)
plt.show()
```
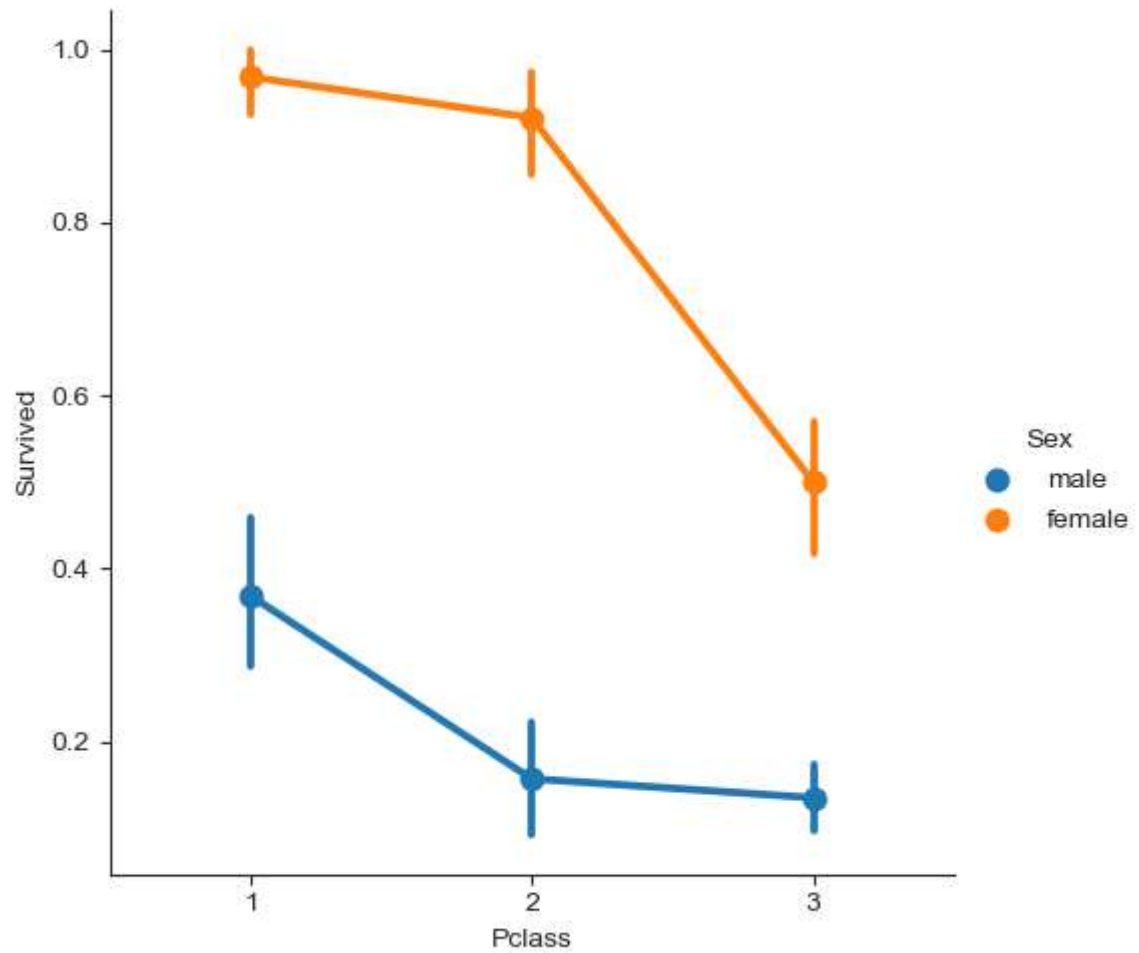

In [21]:
```python
plt.figure(figsize=(4,3))
sns.set_style('darkgrid')
sns.countplot('Pclass', hue='Survived', data=data)
plt.title('Pclass: Sruvived vs Dead')
plt.show()
```
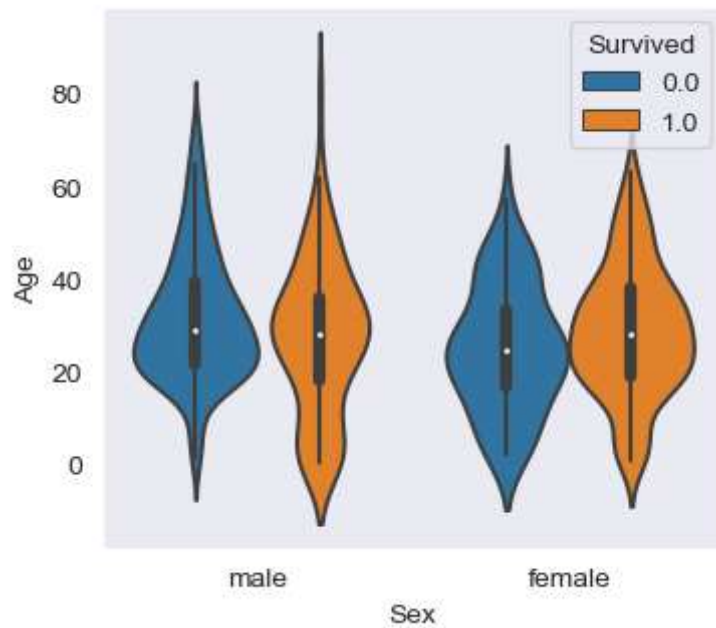
Factor plot

In [22]:
```python
sns.set_style('ticks')
sns.factorplot('Pclass', 'Survived', hue='Sex', data=data)
plt.show()
```
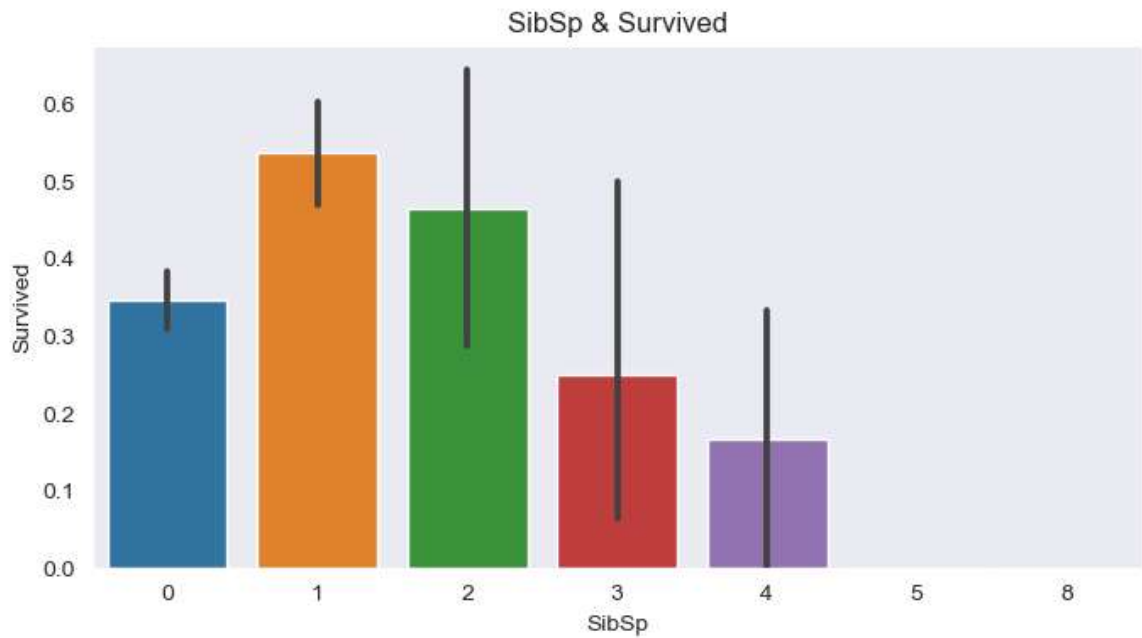
Violin plot

In [23]:
```python
sns.set_style('dark')
plt.figure(figsize=(4,3.5))
sns.violinplot("Sex","Age", hue="Survived", data=data)
plt.show()
```
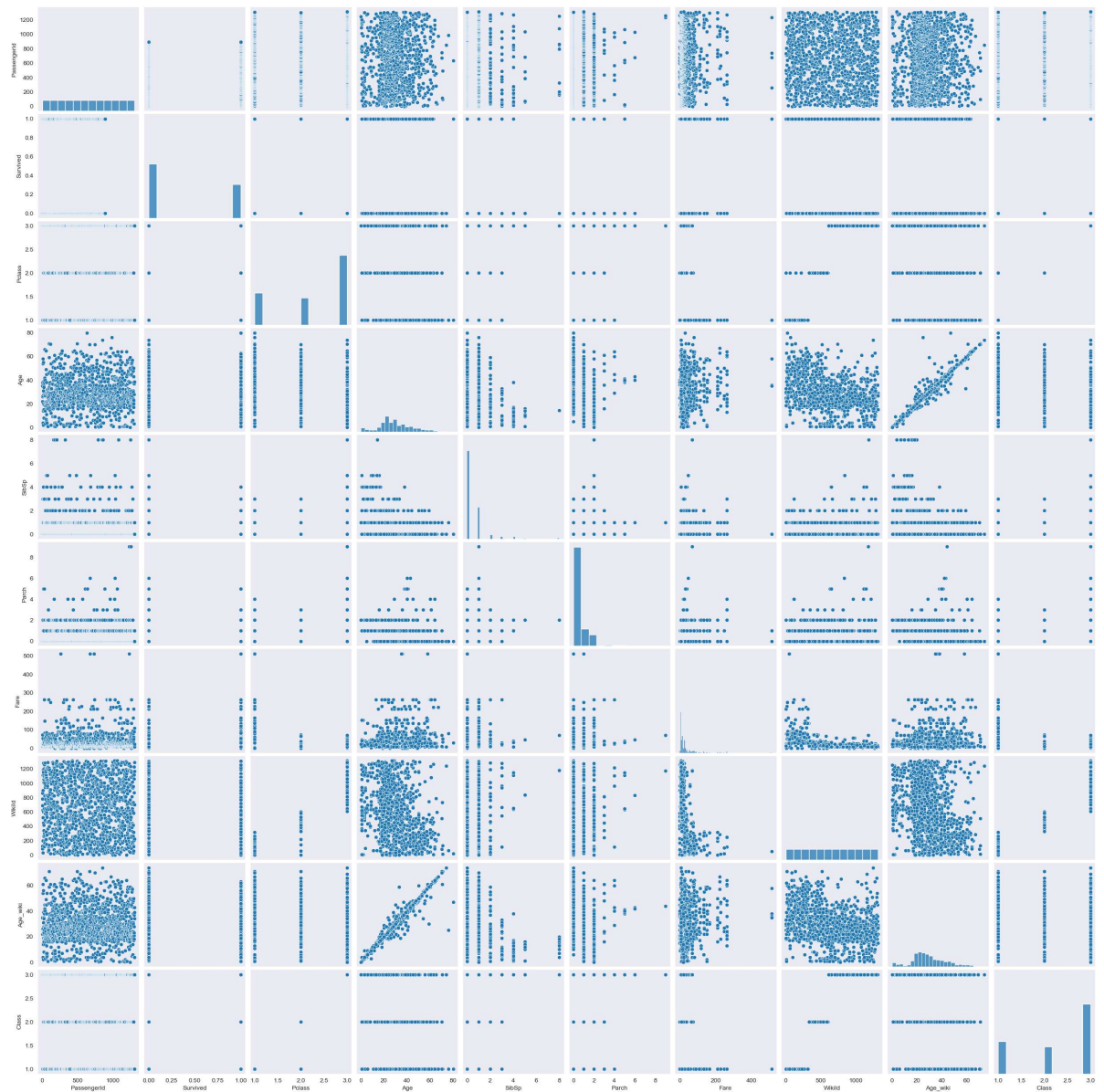
BAR PLOT

In [24]:
```python
plt.figure(figsize=(8,4))
sns.barplot('SibSp', 'Survived', data=data)
plt.title("SibSp & Survived")
plt.show()
```

PAIR PLOT

In [25]:
```python
sns.pairplot(data=data)
plt.show()
```

HEAT MAP

```
In [26]: heat_map = data.corr()
         sns.heatmap(heat_map)
         plt.show()
```