ccccccccc-1

February 26, 2024

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

[2]:
```
data = pd.read_csv('https://raw.githubusercontent.com/dphi-official/Datasets/
↪master/titanic_data.csv')
data
```

[2]:
```
     PassengerId  Survived  Pclass  \
0              1         0       3
1              2         1       1
2              3         1       3
3              4         1       1
4              5         0       3
..           …       …     …
886          887         0       2
887          888         1       1
888          889         0       3
889          890         1       1
890          891         0       3

                                                 Name     Sex   Age  SibSp  \
0                             Braund, Mr. Owen Harris    male  22.0      1
1    Cumings, Mrs. John Bradley (Florence Briggs Th…  female  38.0      1
2                              Heikkinen, Miss. Laina  female  26.0      0
3        Futrelle, Mrs. Jacques Heath (Lily May Peel)  female  35.0      1
4                            Allen, Mr. William Henry    male  35.0      0
..                                                 …     …   …    …
886                            Montvila, Rev. Juozas    male  27.0      0
887                     Graham, Miss. Margaret Edith  female  19.0      0
888         Johnston, Miss. Catherine Helen "Carrie"  female   NaN      1
889                            Behr, Mr. Karl Howell    male  26.0      0
890                              Dooley, Mr. Patrick    male  32.0      0

     Parch            Ticket     Fare Cabin Embarked
0        0         A/5 21171   7.2500   NaN        S
```

```
1        0          PC 17599  71.2833   C85        C
2        0  STON/O2. 3101282   7.9250   NaN        S
3        0            113803  53.1000  C123        S
4        0            373450   8.0500   NaN        S
..     …                …       …   …      …
886      0            211536  13.0000   NaN        S
887      0            112053  30.0000   B42        S
888      2        W./C. 6607  23.4500   NaN        S
889      0            111369  30.0000  C148        C
890      0            370376   7.7500   NaN        Q

[891 rows x 12 columns]
```

[3]:
```
data.shape
```

[3]:
```
(891, 12)
```

[4]:
```
data.describe()
```

[4]:
```
       PassengerId    Survived      Pclass         Age       SibSp  \
count   891.000000  891.000000  891.000000  714.000000  891.000000
mean    446.000000    0.383838    2.308642   29.699118    0.523008
std     257.353842    0.486592    0.836071   14.526497    1.102743
min       1.000000    0.000000    1.000000    0.420000    0.000000
25%     223.500000    0.000000    2.000000   20.125000    0.000000
50%     446.000000    0.000000    3.000000   28.000000    0.000000
75%     668.500000    1.000000    3.000000   38.000000    1.000000
max     891.000000    1.000000    3.000000   80.000000    8.000000

            Parch        Fare
count  891.000000  891.000000
mean     0.381594   32.204208
std      0.806057   49.693429
min      0.000000    0.000000
25%      0.000000    7.910400
50%      0.000000   14.454200
75%      0.000000   31.000000
max      6.000000  512.329200
```

[5]:
```
data.describe(include = 'object')
```

[5]:
```
                        Name   Sex  Ticket Cabin Embarked
count                    891   891     891   204      889
unique                   891     2     681   147        3
top     Mangan, Miss. Mary  male  347082    G6        S
freq                       1   577       7     4      644
```

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

[6]:
```
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
```

[7]:
```
data['Age'] = data['Age'].fillna(np.mean(data['Age']))
```

[8]:
```
data['Cabin'] = data['Cabin'].fillna(data['Cabin'].mode()[0])
```

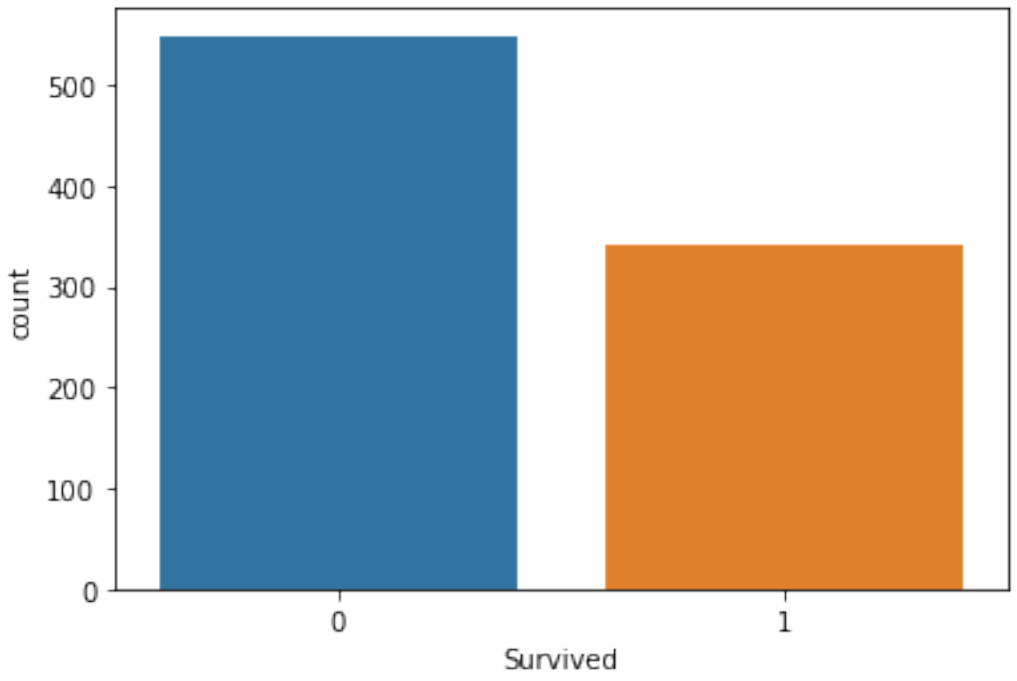
[9]:
```
data['Embarked'] = data['Embarked'].fillna(data['Embarked'].mode()[0])
```

[10]:
```
data.isnull().sum()
```

[10]:
```
PassengerId    0
Survived       0
Pclass         0
Name           0
Sex            0
Age            0
SibSp          0
Parch          0
Ticket         0
Fare           0
Cabin          0
Embarked       0
dtype: int64
```

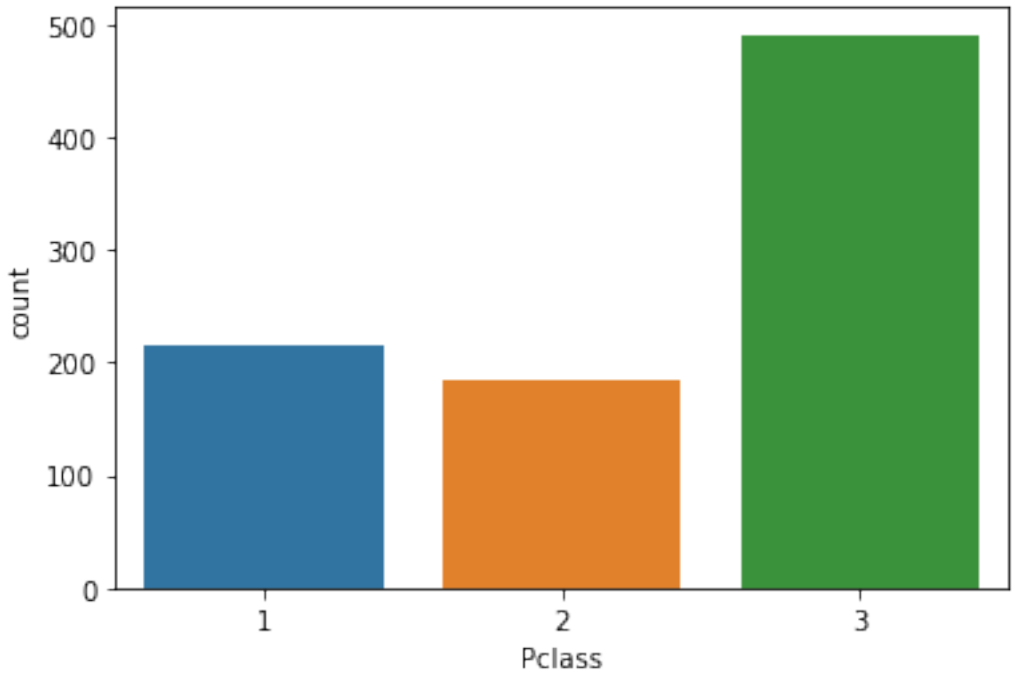
[11]:
```
sns.countplot(data['Survived'])
```

[11]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1b5c823e7c0>
```



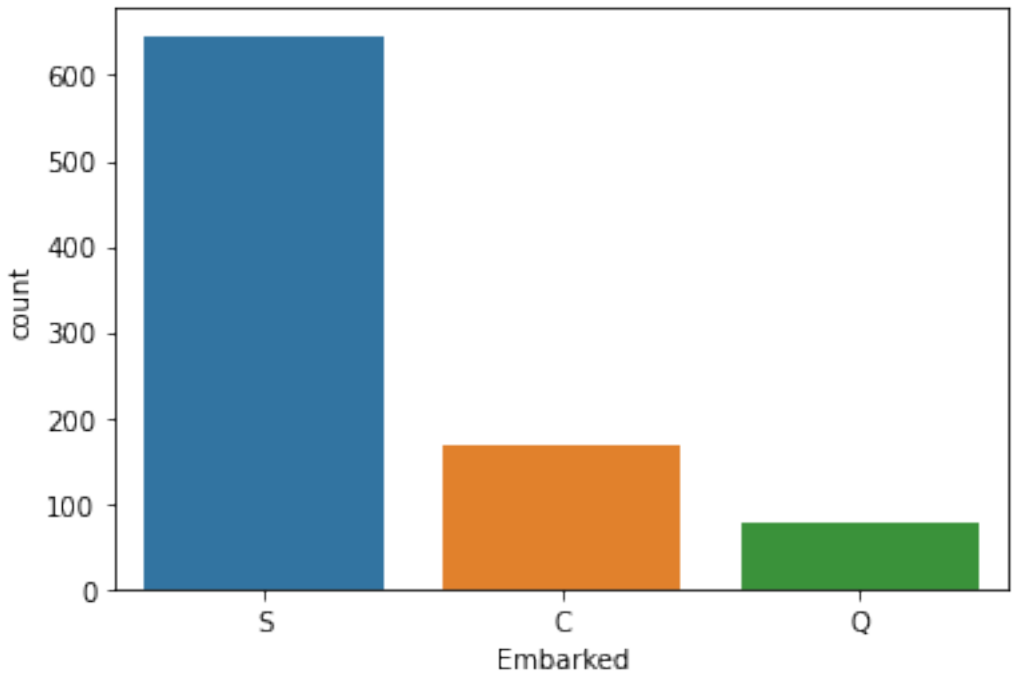
[12]:
```
sns.countplot(data['Pclass'])
```

[12]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8997c70>



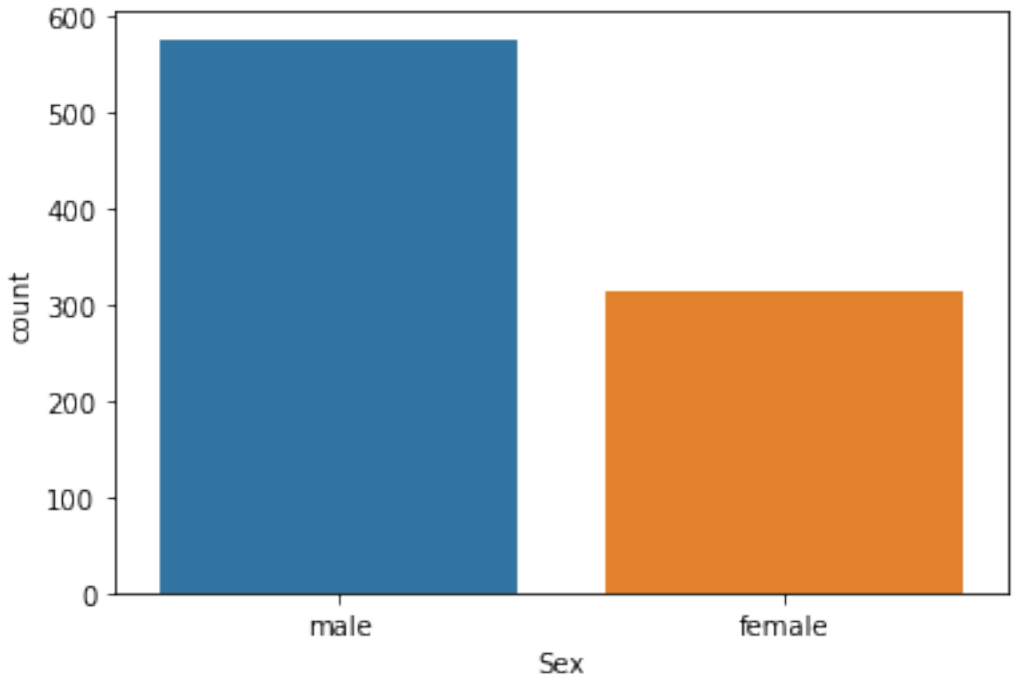
[13]:
```
sns.countplot(data['Embarked'])
```

[13]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c89f9910>



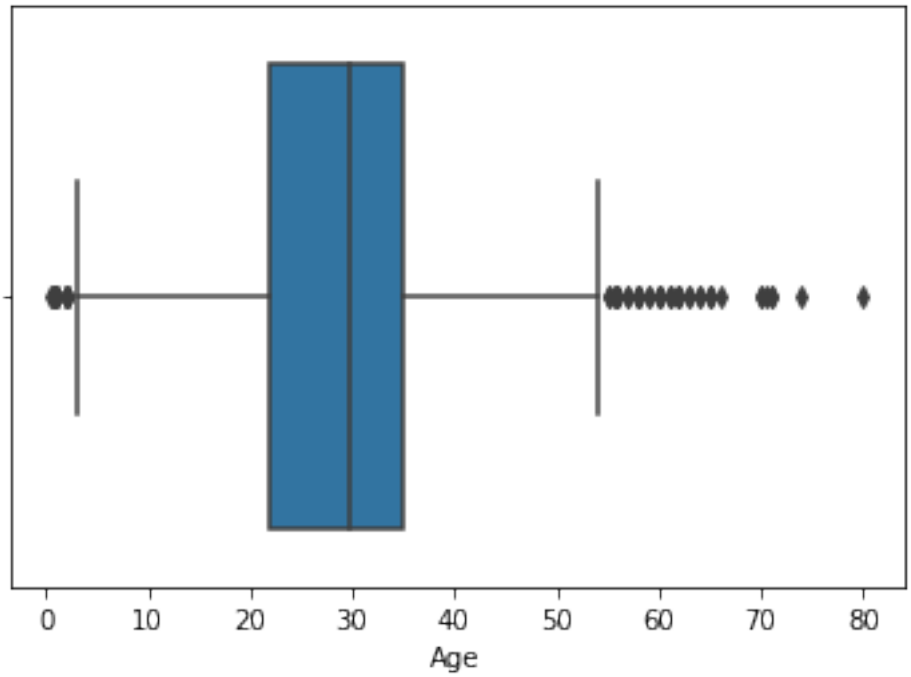
[14]:
```
sns.countplot(data['Sex'])
```

[14]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8a4e8b0>



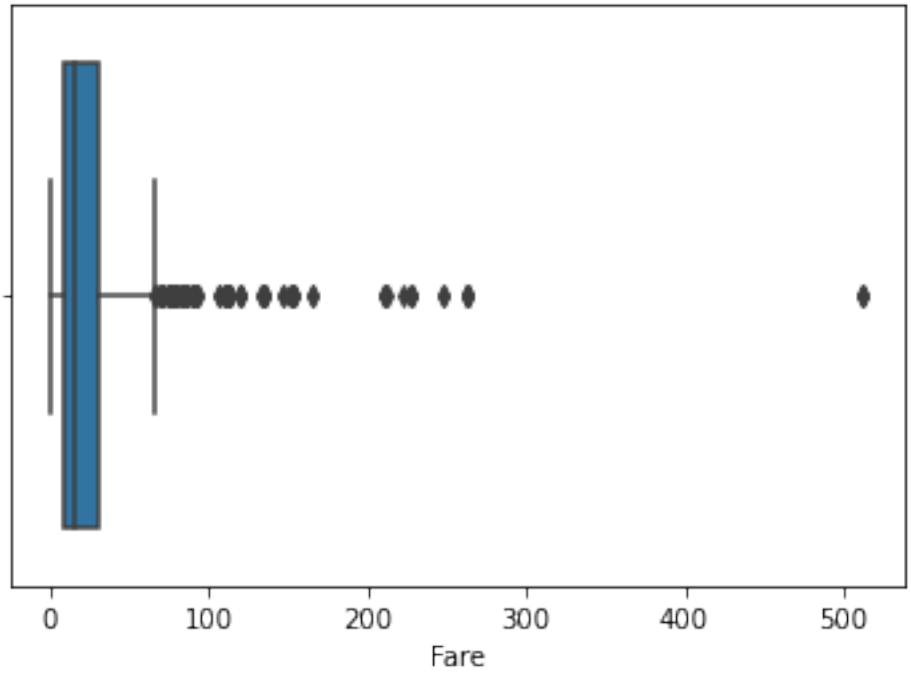
[15]:
```
sns.boxplot(data['Age'])
```

[15]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8a9c490>



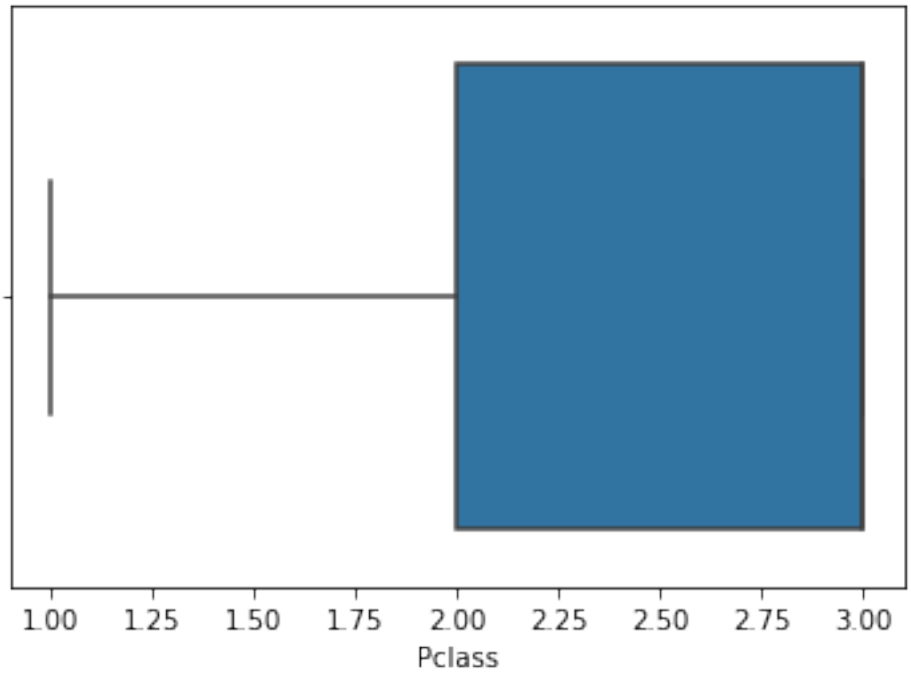
[16]:
```
sns.boxplot(data['Fare'])
```

[16]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8aed7c0>



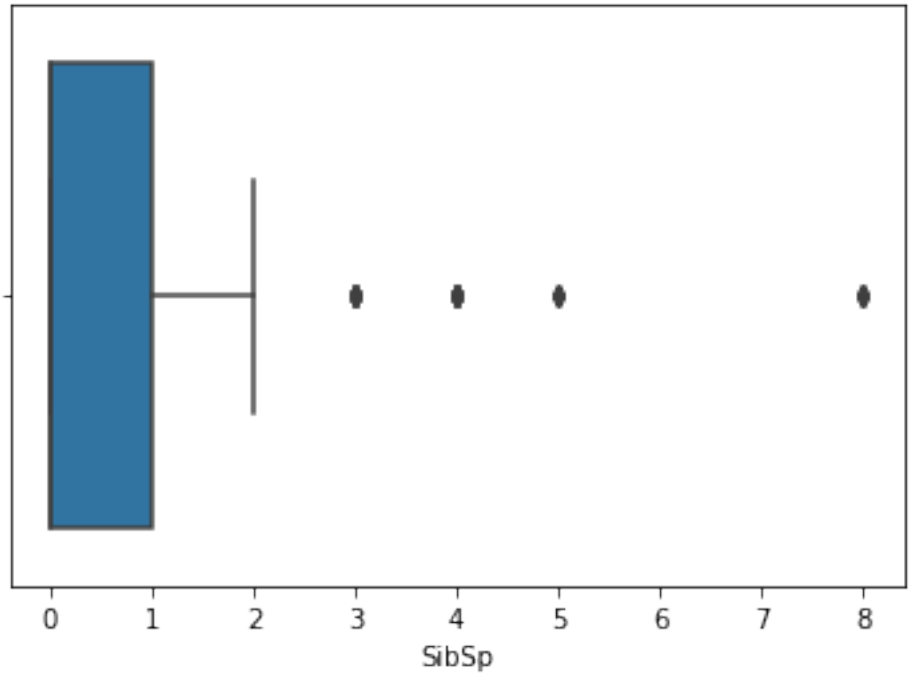
[17]:
```
sns.boxplot(data['Pclass'])
```

[17]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8b52c10>



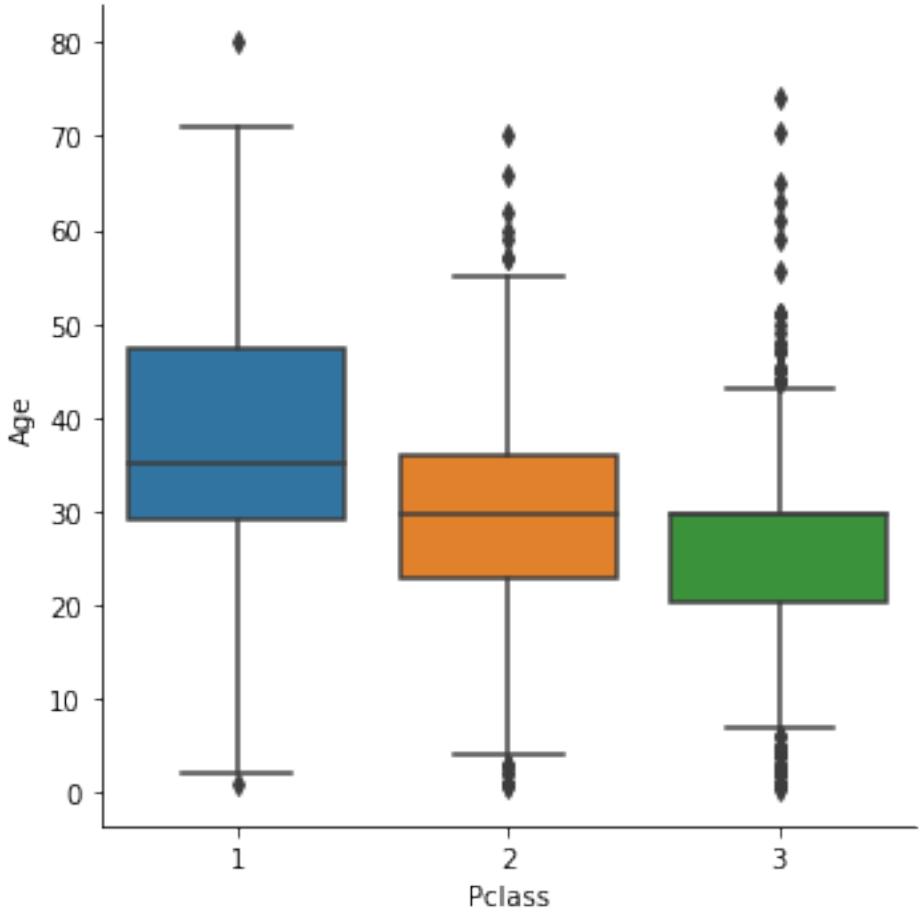
[18]:
```
sns.boxplot(data['SibSp'])
```

[18]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8b9f940>



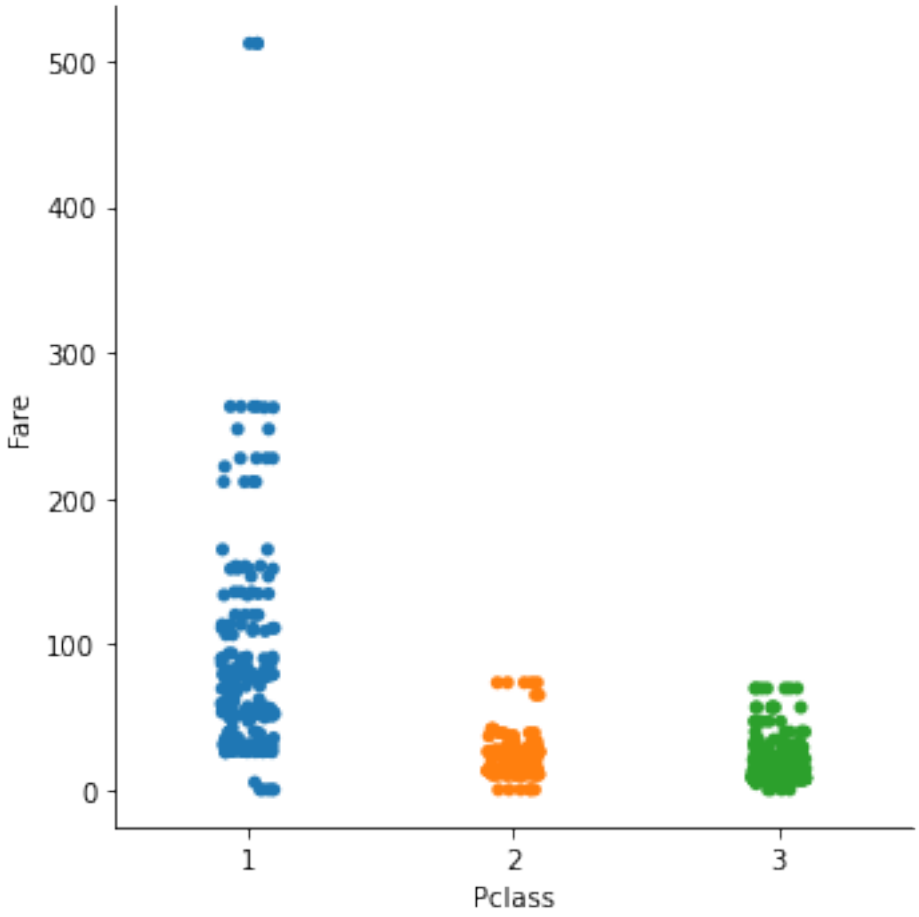
[19]:
```
sns.catplot(x= 'Pclass', y = 'Age', data=data, kind = 'box')
```

[19]: <seaborn.axisgrid.FacetGrid at 0x1b5c8affca0>



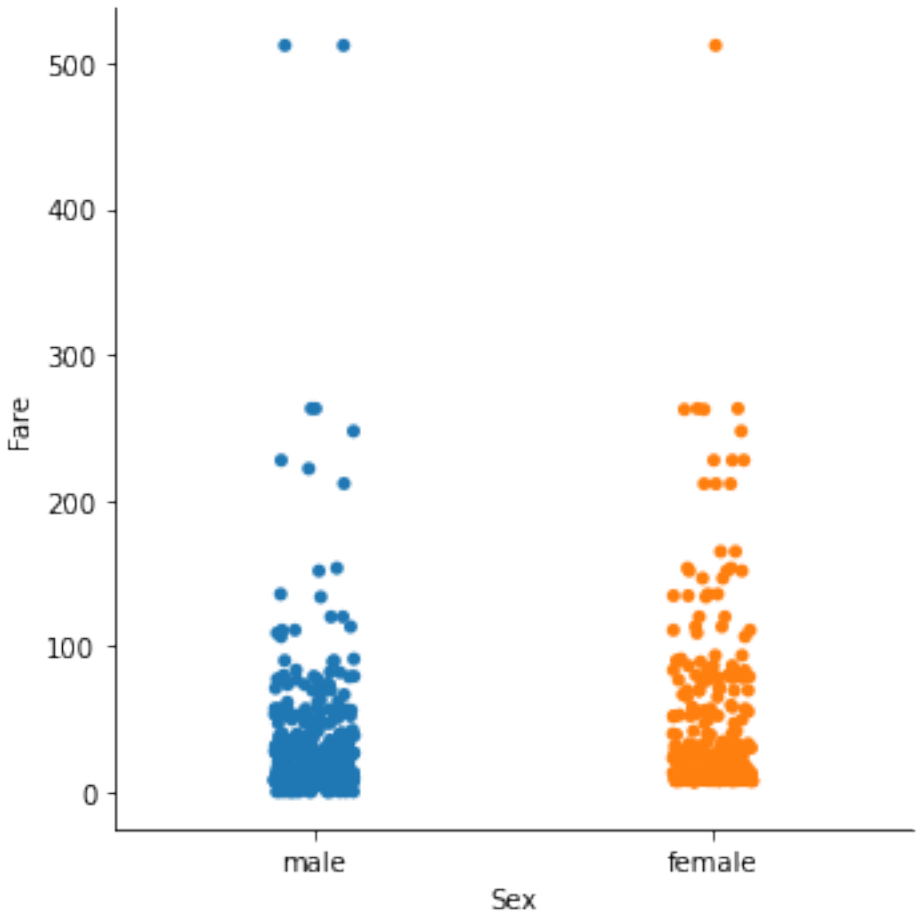
[20]:
```
sns.catplot(x= 'Pclass', y = 'Fare', data=data, kind = 'strip')
```

[20]: <seaborn.axisgrid.FacetGrid at 0x1b5c8ca3ee0>



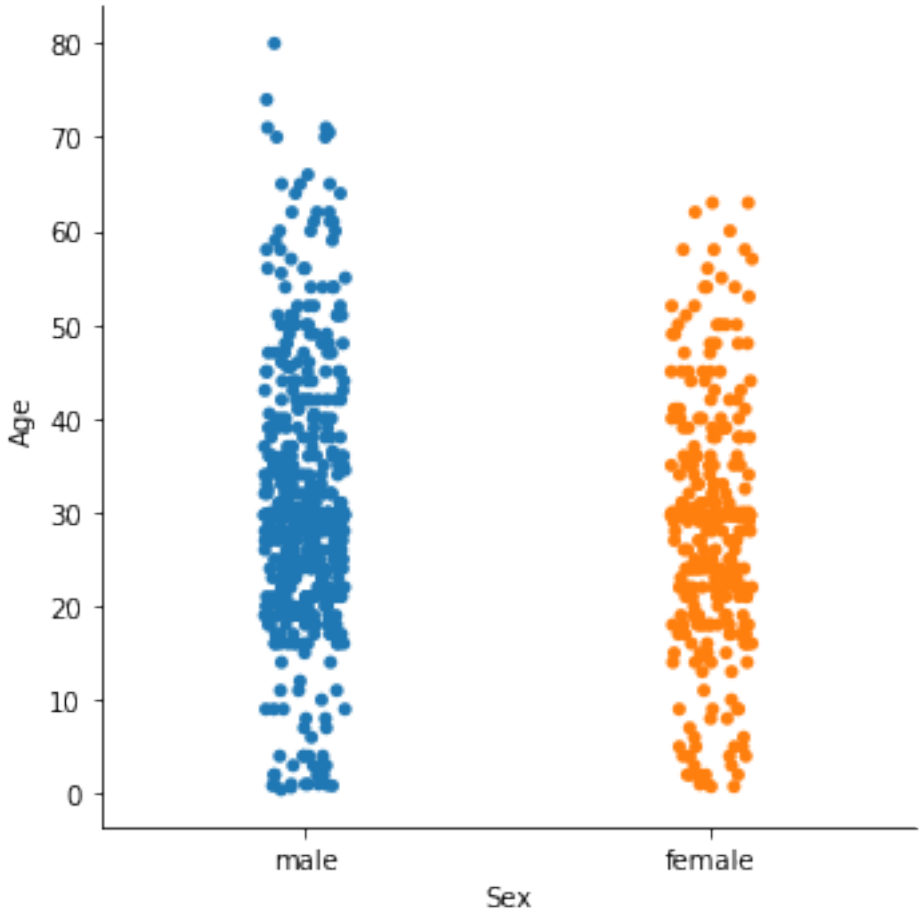
[21]:
```
sns.catplot(x= 'Sex', y = 'Fare', data=data, kind = 'strip')
```

[21]: <seaborn.axisgrid.FacetGrid at 0x1b5c8aed9a0>



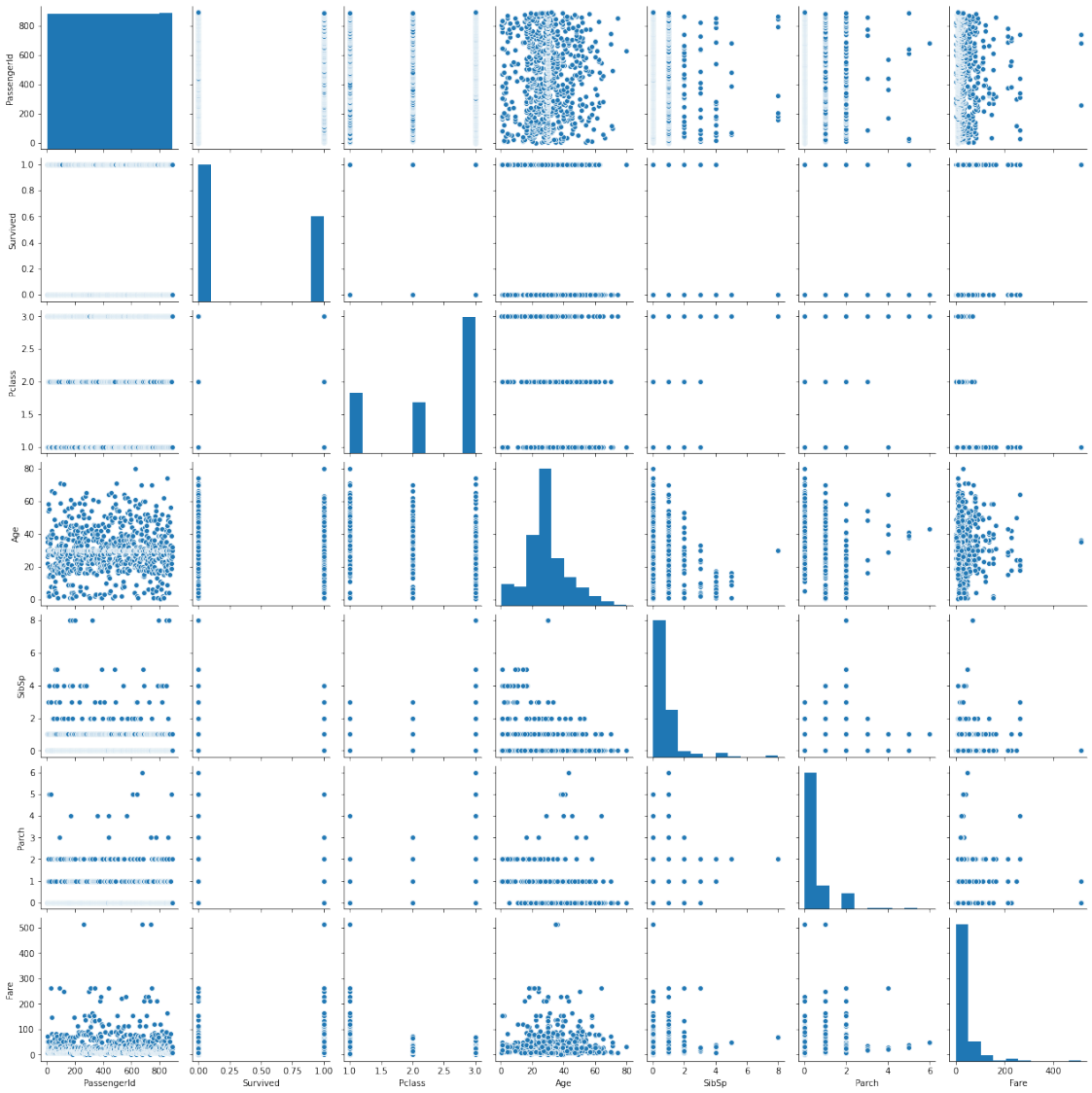
[22]:
```
sns.catplot(x= 'Sex', y = 'Age', data=data, kind = 'strip')
```

[22]: <seaborn.axisgrid.FacetGrid at 0x1b5c8d515e0>



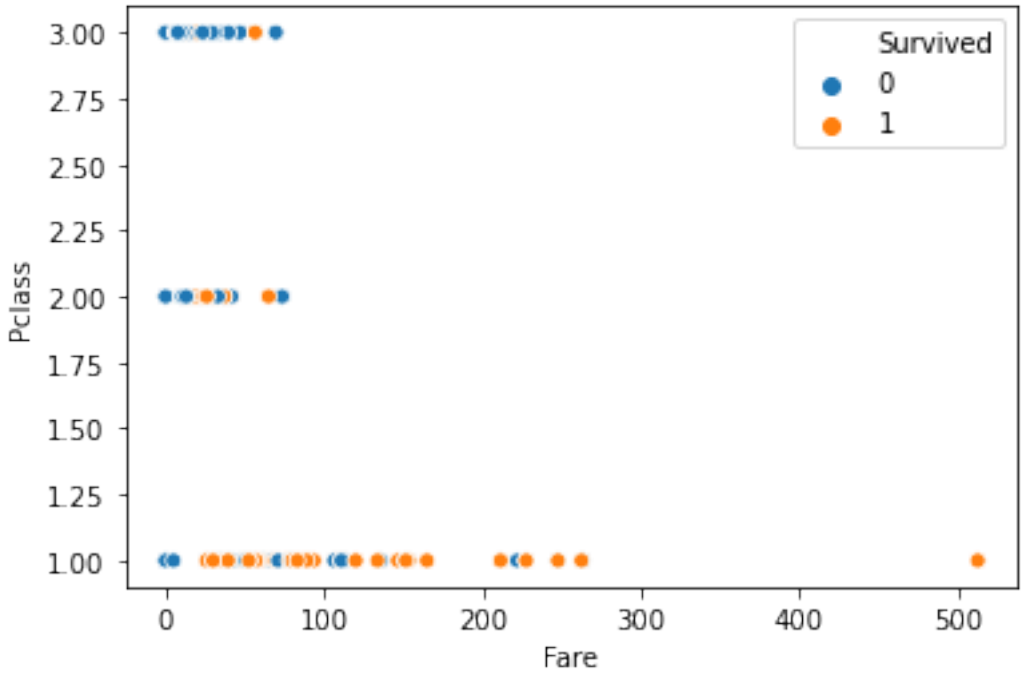
[23]:
```
sns.pairplot(data)
```

[23]: <seaborn.axisgrid.PairGrid at 0x1b5c8d9c490>



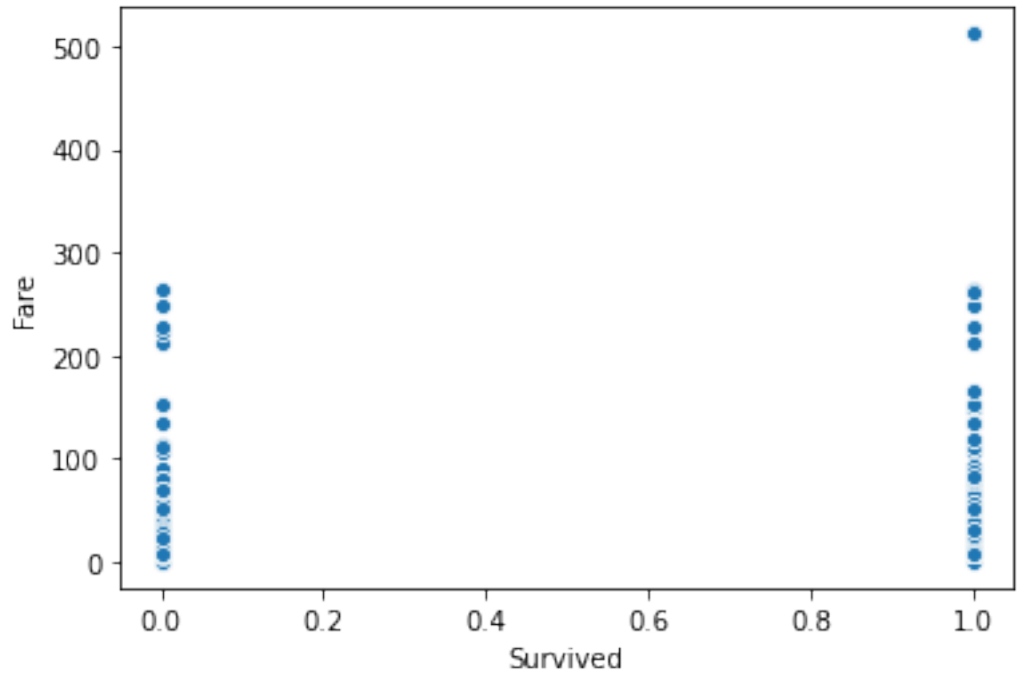
[24]:
```
sns.scatterplot(x = 'Fare', y = 'Pclass', hue = 'Survived', data = data)
```

[24]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5cae10190>



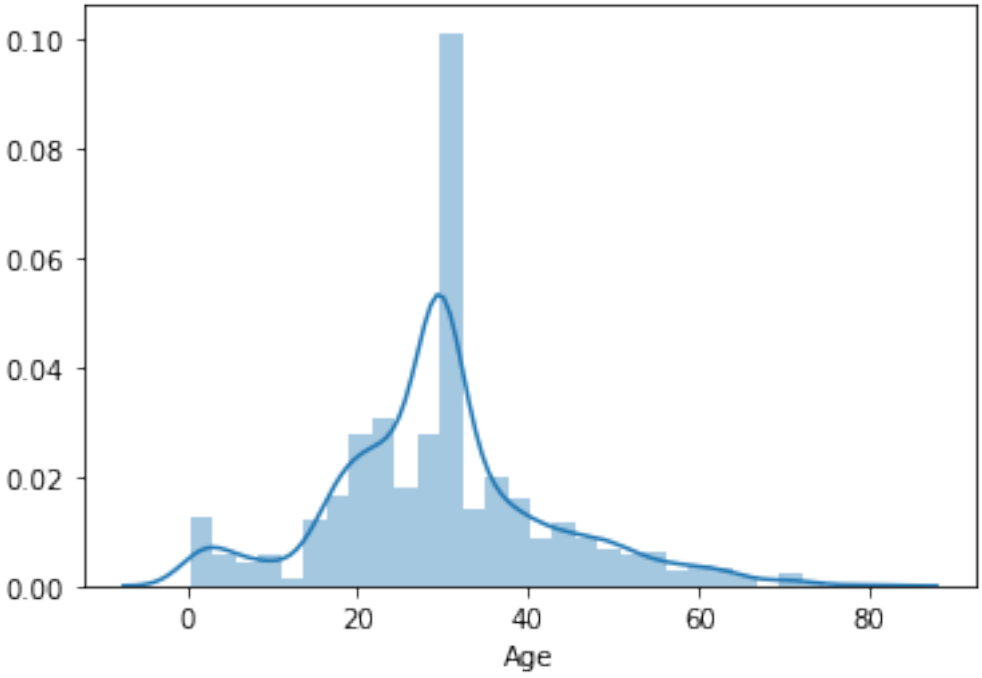
[25]:
```
sns.scatterplot(x = 'Survived', y = 'Fare', data = data)
```

[25]: <matplotlib.axes._subplots.AxesSubplot at 0x1b5c8d84820>



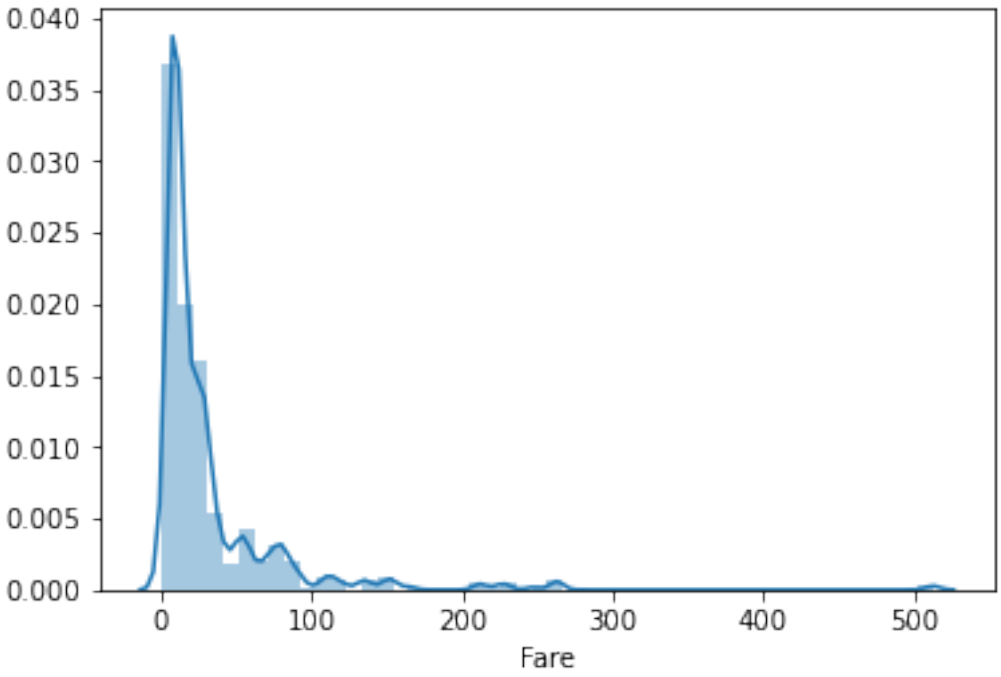
[26]:
```
sns.distplot(data['Age'])
```

[26]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1b5cba89460>
```



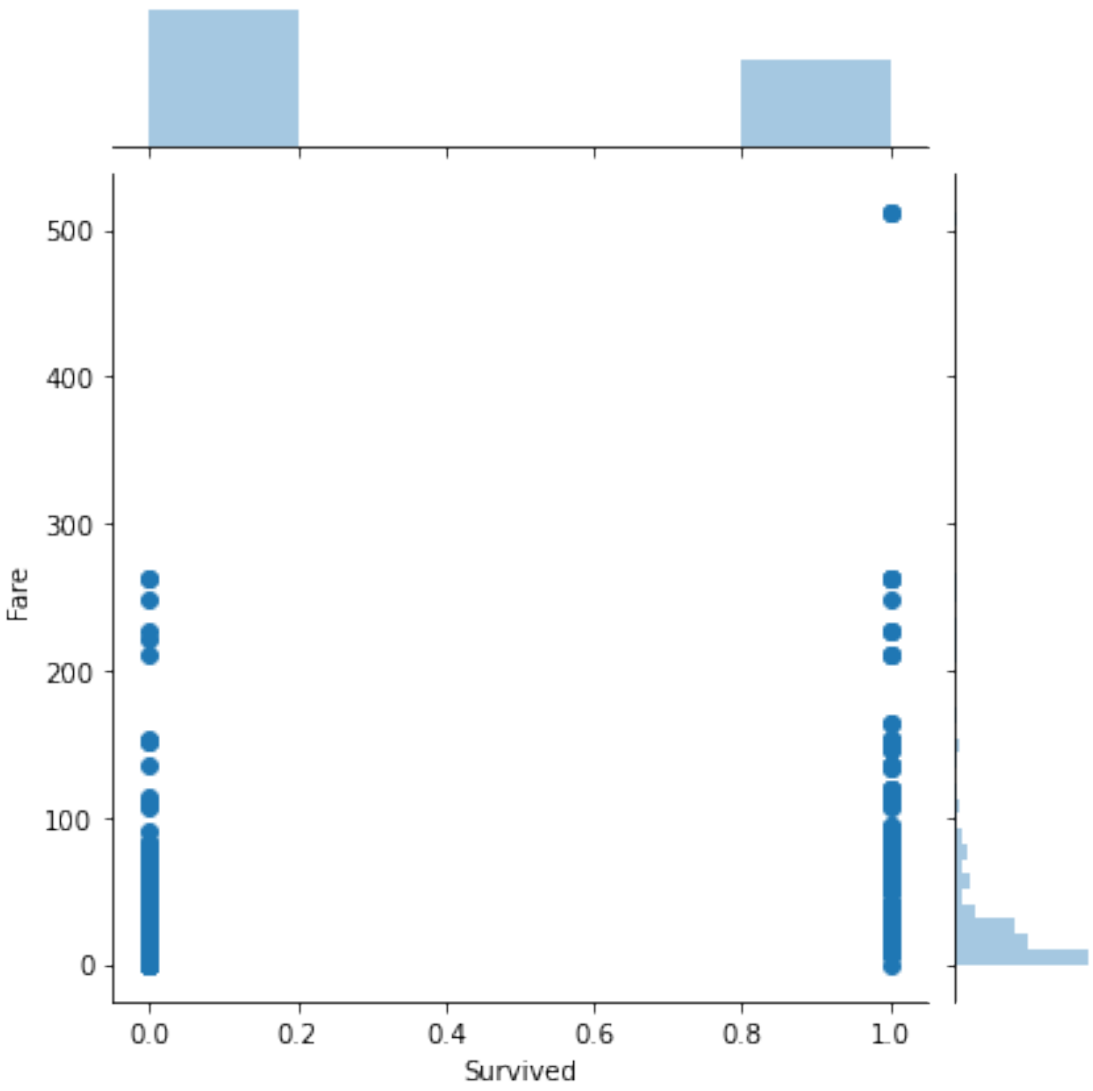
[27]:
```
sns.distplot(data['Fare'])
```

[27]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1b5cbb34f40>
```



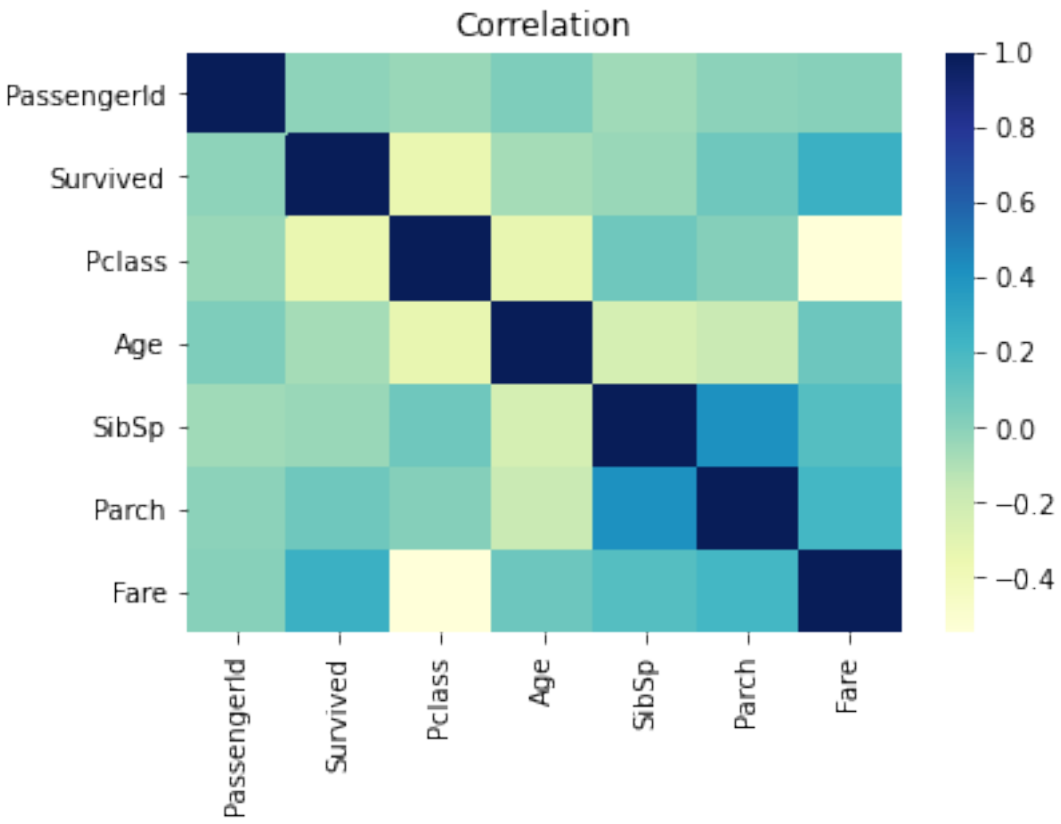
[28]:
```
sns.jointplot(x = "Survived", y = "Fare", kind = "scatter", data = data)
```

[28]: <seaborn.axisgrid.JointGrid at 0x1b5cbbf62b0>



[29]:
```
tc = data.corr()
sns.heatmap(tc, cmap="YlGnBu")
plt.title('Correlation')
```

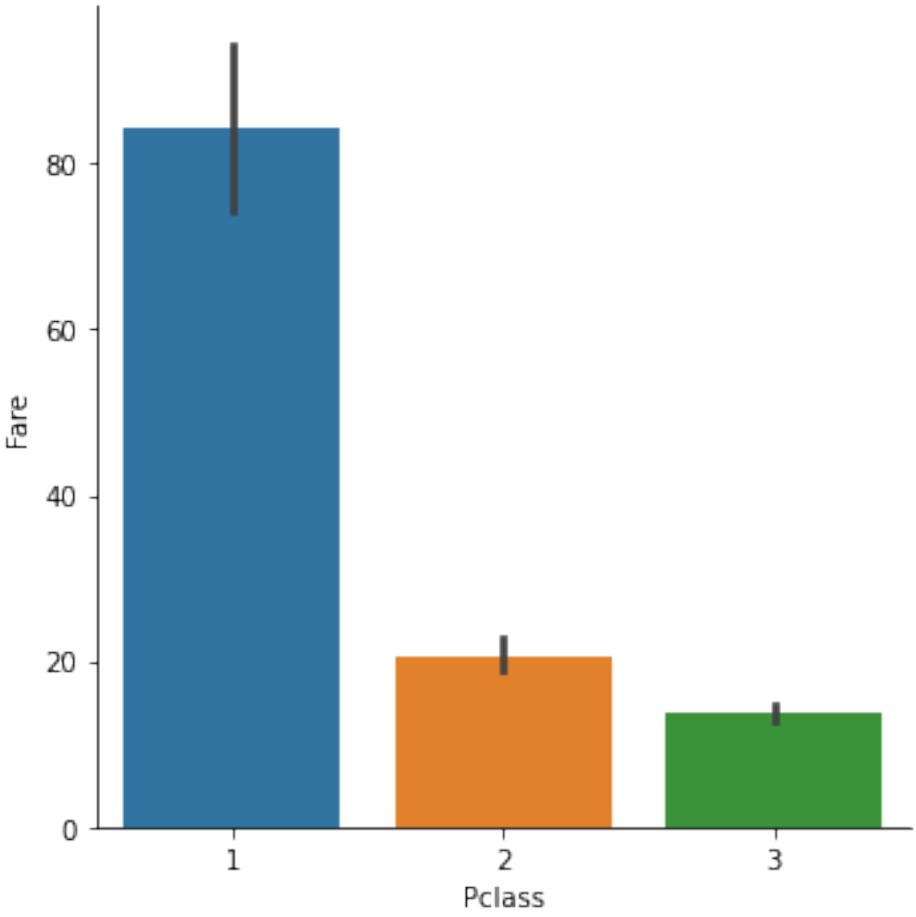
[29]: Text(0.5, 1.0, 'Correlation')



Price of Ticket for each passenger is distributed

[33]:
```
sns.catplot(x='Pclass', y='Fare', data=data, kind='bar')
```

[33]:
```
<seaborn.axisgrid.FacetGrid at 0x1b5ca67bcd0>
```


80
60
40
20
0
Fare
1
2
3
Pclass