```python
import pandas as pd
df = pd.read_csv("Titanic-Dataset.csv")
print(df.info())
print(df.head())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   PassengerId  891 non-null    int64
 1   Survived     891 non-null    int64
 2   Pclass       891 non-null    int64
 3   Name         891 non-null    object
 4   Sex          891 non-null    object
 5   Age          714 non-null    float64
 6   SibSp        891 non-null    int64
 7   Parch        891 non-null    int64
 8   Ticket       891 non-null    object
 9   Fare         891 non-null    float64
 10  Cabin        204 non-null    object
 11  Embarked     889 non-null    object
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
None
   PassengerId  Survived  Pclass  \
0            1         0       3
1            2         1       1
2            3         1       3
3            4         1       1
4            5         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

   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
```

```
missing_values = df.isnull().sum().sort_values(ascending=False)
print("Missing Values:\n", missing_values)
```

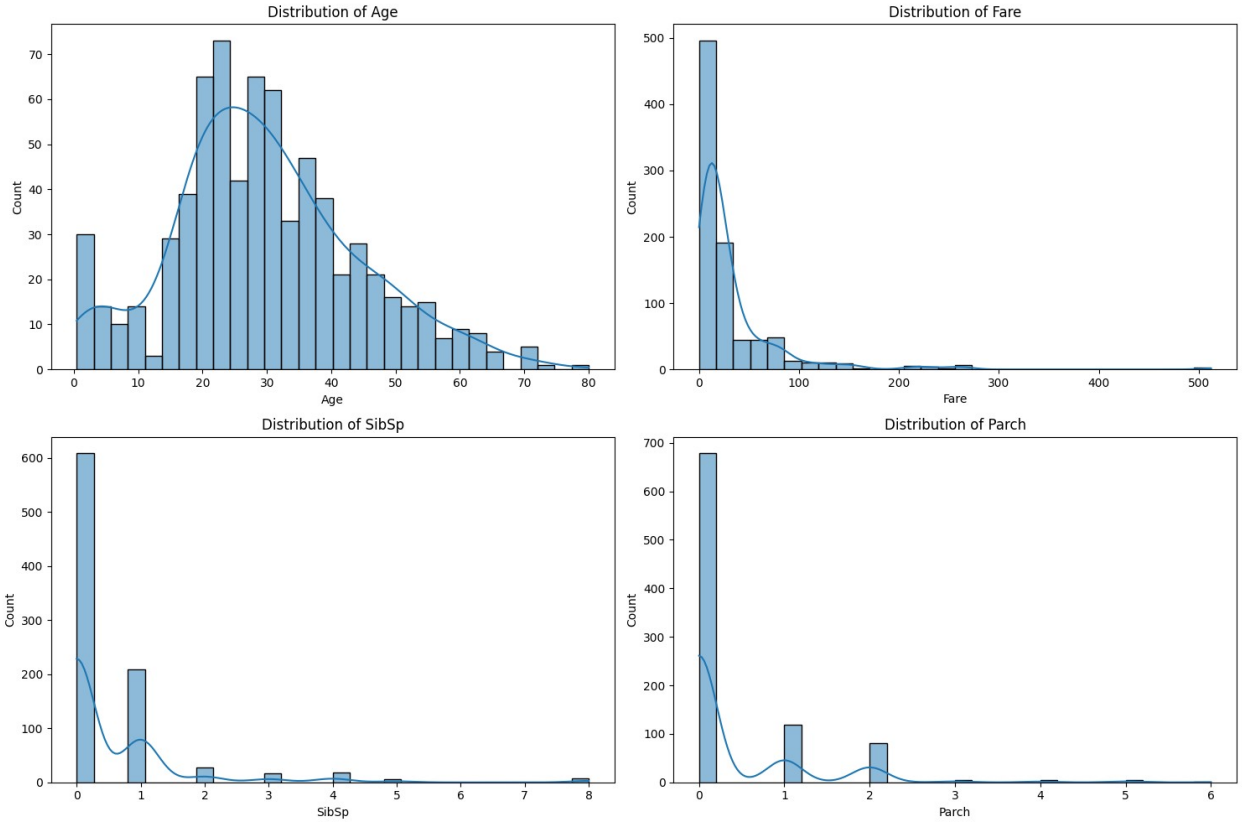
```
Missing Values:
 Cabin          687
Age             177
Embarked          2
PassengerId       0
Survived          0
Pclass            0
Name              0
Sex               0
SibSp             0
Parch             0
Ticket            0
Fare              0
dtype: int64
```

```
summary_stats = df.describe()
print("Summary Statistics:\n", summary_stats)
```

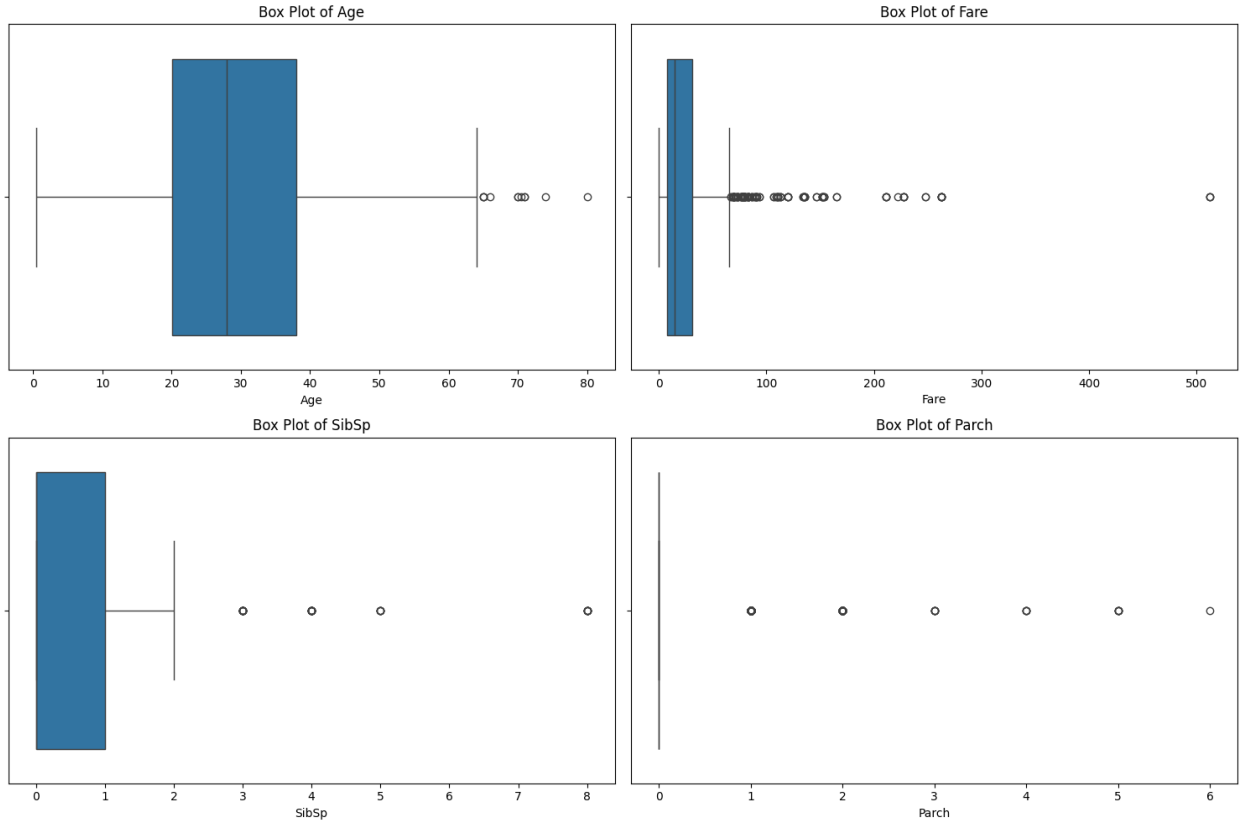
```
Summary Statistics:
       PassengerId    Survived      Pclass         Age       SibSp  \
count   891.000000  891.000000  891.000000  714.000000  891.000000
mean    446.000000    0.383838    2.308642   29.699118    0.523008
std     257.353842    0.486592    0.836071   14.526497    1.102743
min       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
```

```
import matplotlib.pyplot as plt
import seaborn as sns
plt.figure(figsize=(15, 10))
numerical_cols = ['Age', 'Fare', 'SibSp', 'Parch']

for i, col in enumerate(numerical_cols, 1):
```

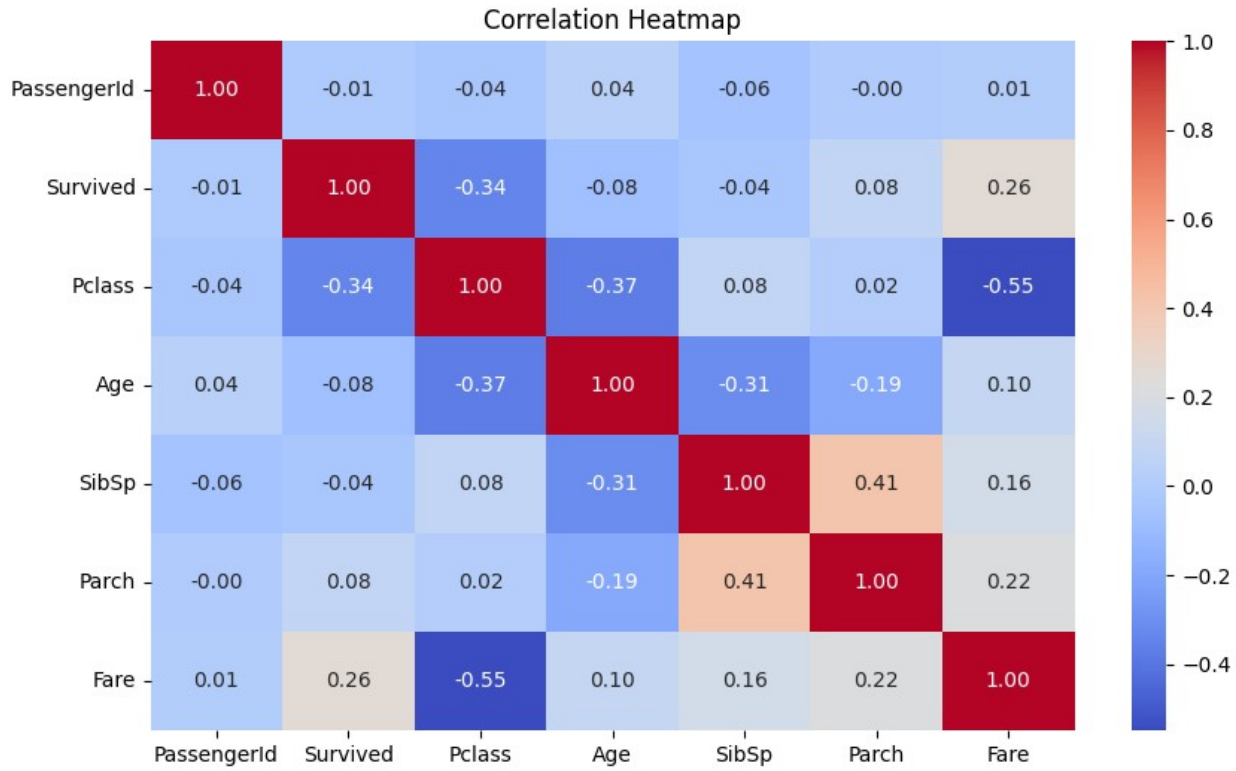
```
    plt.subplot(2, 2, i)
    sns.histplot(df[col], kde=True, bins=30)
    plt.title(f'Distribution of {col}')

plt.tight_layout()
plt.show()
```



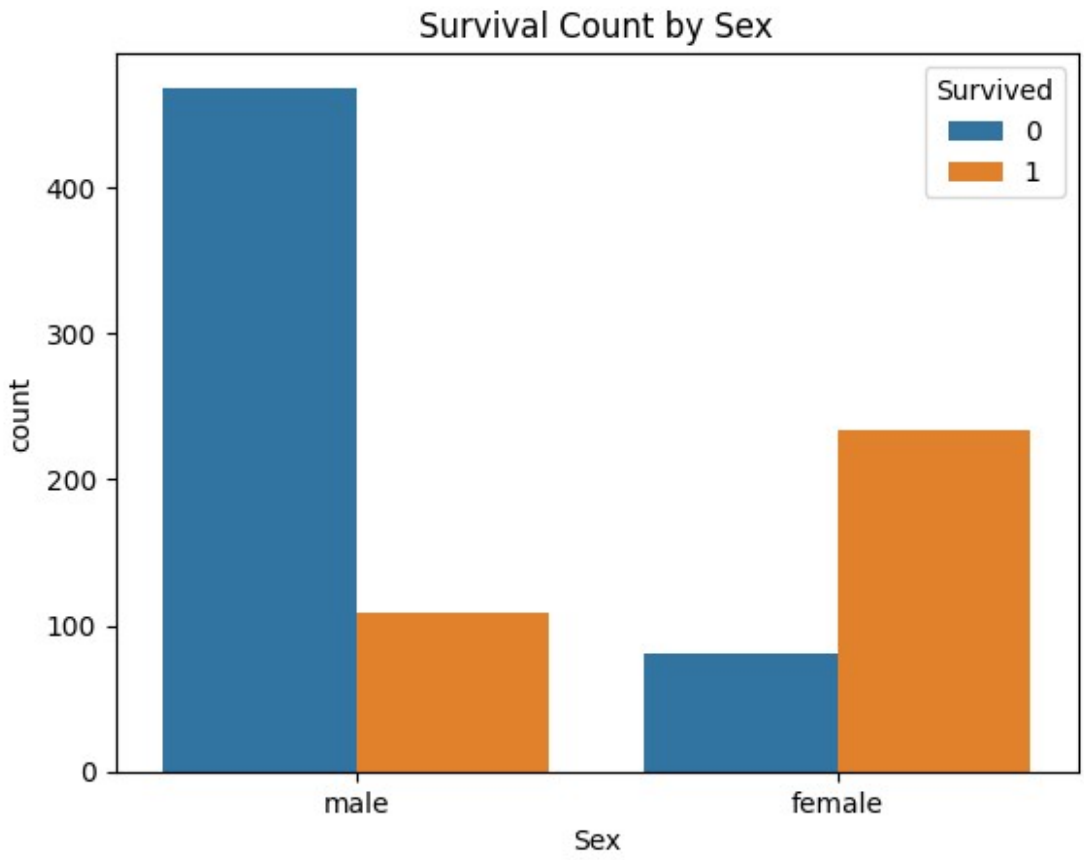

```
plt.figure(figsize=(15, 10))

for i, col in enumerate(numerical_cols, 1):
    plt.subplot(2, 2, i)
    sns.boxplot(x=df[col])
    plt.title(f'Box Plot of {col}')

plt.tight_layout()
plt.show()
```

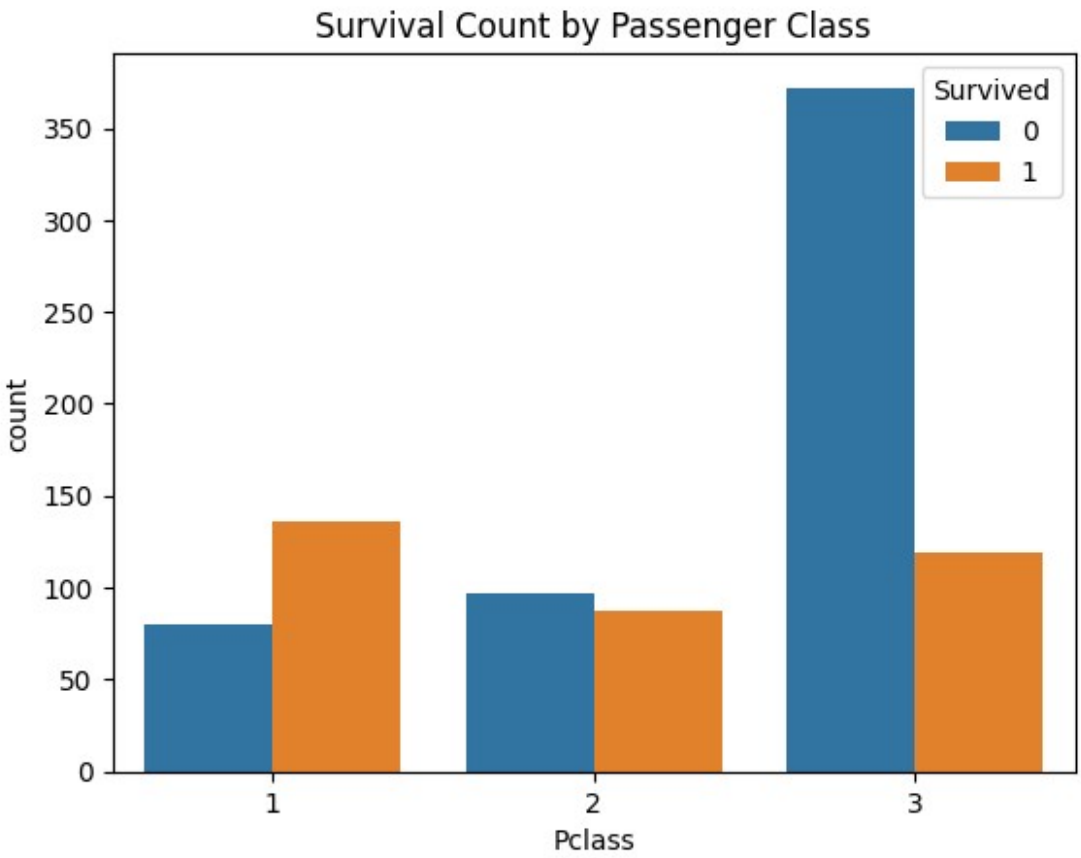


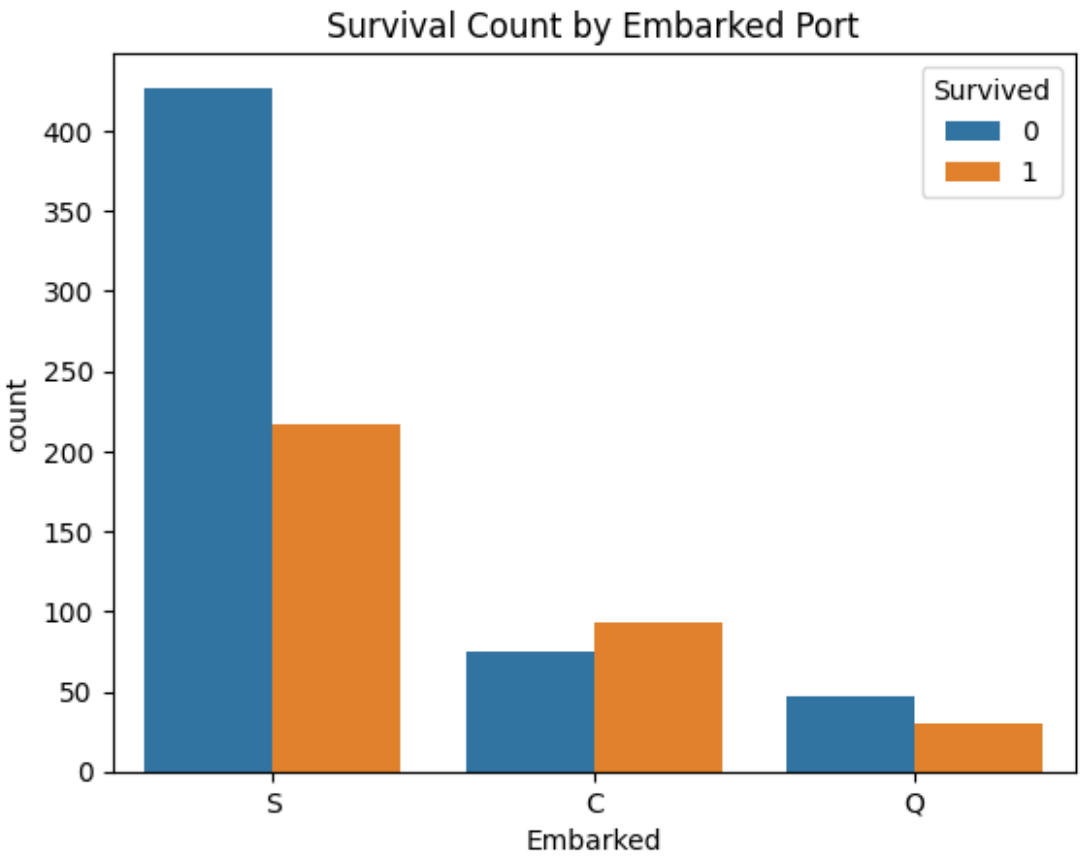

```
plt.figure(figsize=(10, 6))
correlation = df.corr(numeric_only=True)
sns.heatmap(correlation, annot=True, cmap='coolwarm', fmt=".2f")
plt.title("Correlation Heatmap")
plt.show()
```




```
sns.countplot(x='Sex', hue='Survived', data=df)
plt.title('Survival Count by Sex')
plt.show()
sns.countplot(x='Pclass', hue='Survived', data=df)
plt.title('Survival Count by Passenger Class')
plt.show()
sns.countplot(x='Embarked', hue='Survived', data=df)
plt.title('Survival Count by Embarked Port')
plt.show()
```


Survival Count by Sex
Survived
0
1
400
300
200
100
0
count
male
female
Sex


Survival Count by Passenger Class
Survived
0
1
350
300
250
200
150
100
50
0
count
1
2
3
Pclass


Survival Count by Embarked Port
Survived
0
1
count
400
350
300
250
200
150
100
50
0
S
C
Q
Embarked