```
import pandas as pd
import matplotlib.pyplot as plt
import missingno as msngo
import seaborn as sns


df = pd.read_csv("/train.csv")
df.info()
df.describe()
df.isnull().sum()
df['Survived'].value_counts()
```

```
<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
```

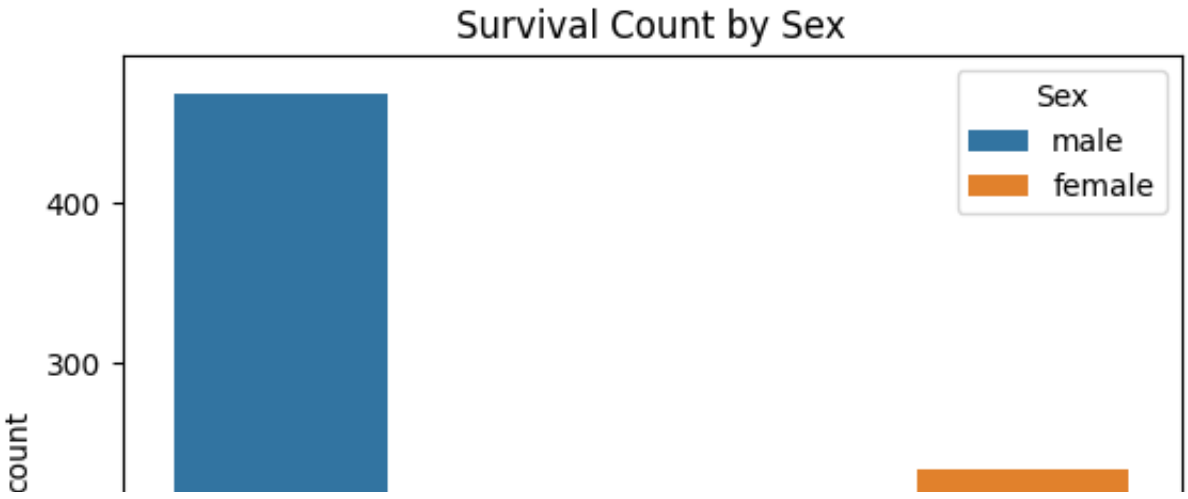
Survived	count
0	549
1	342

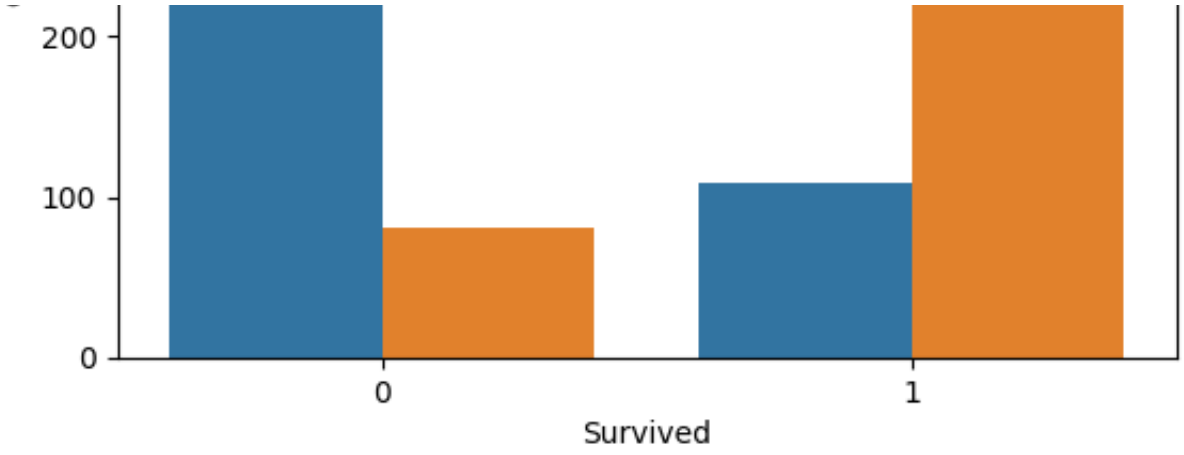
dtype: int64

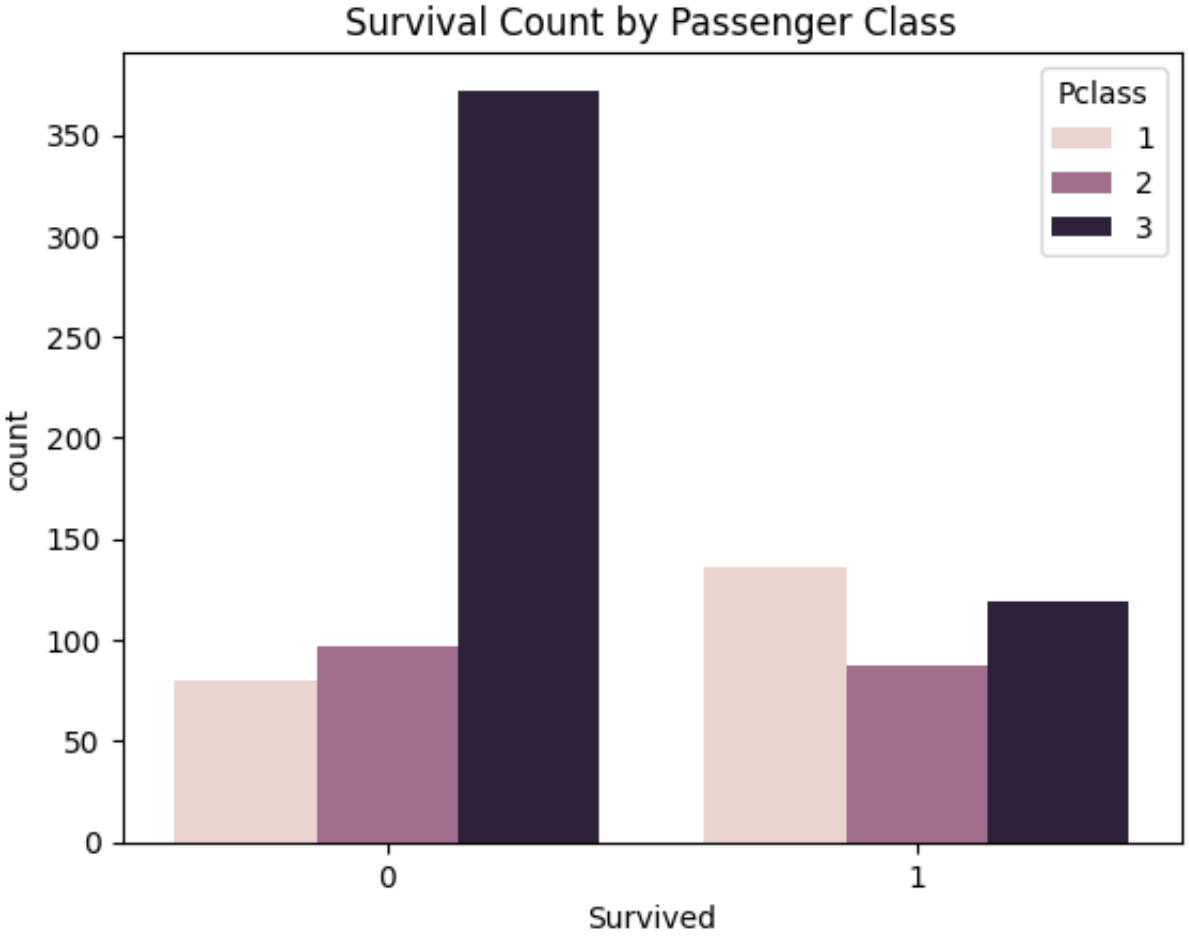
```
df['Age'].fillna(df['Age'].median(), inplace=True)

df['Embarked'].fillna(df['Embarked'].mode()[0], inplace=True)

df.drop('Cabin', axis=1, inplace=True)
```

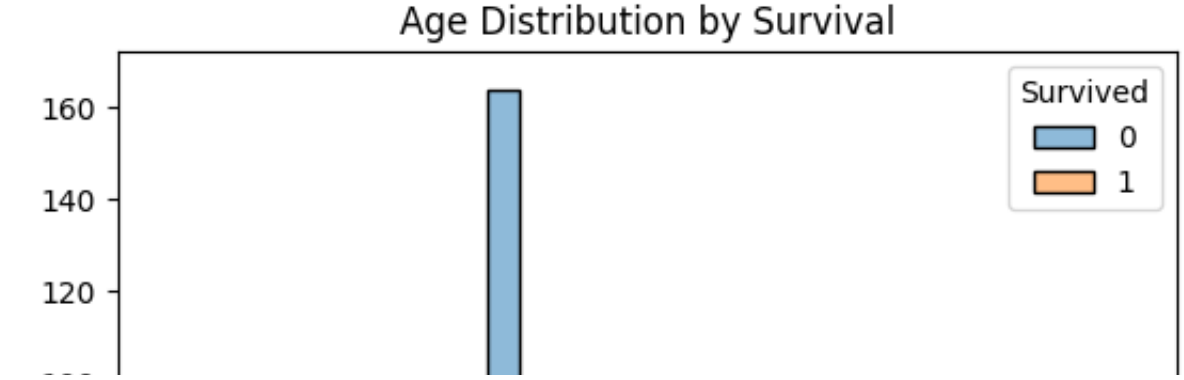
```
/tmp/ipython-input-62-792774890.py:1: FutureWarning: A value is trying to be s
The behavior will change in pandas 3.0. This inplace method will never work be

For example, when doing 'df[col].method(value, inplace=True)', try using 'df.m


  df['Age'].fillna(df['Age'].median(), inplace=True)
/tmp/ipython-input-62-792774890.py:3: FutureWarning: A value is trying to be s
The behavior will change in pandas 3.0. This inplace method will never work be

For example, when doing 'df[col].method(value, inplace=True)', try using 'df.m


  df['Embarked'].fillna(df['Embarked'].mode()[0], inplace=True)
```

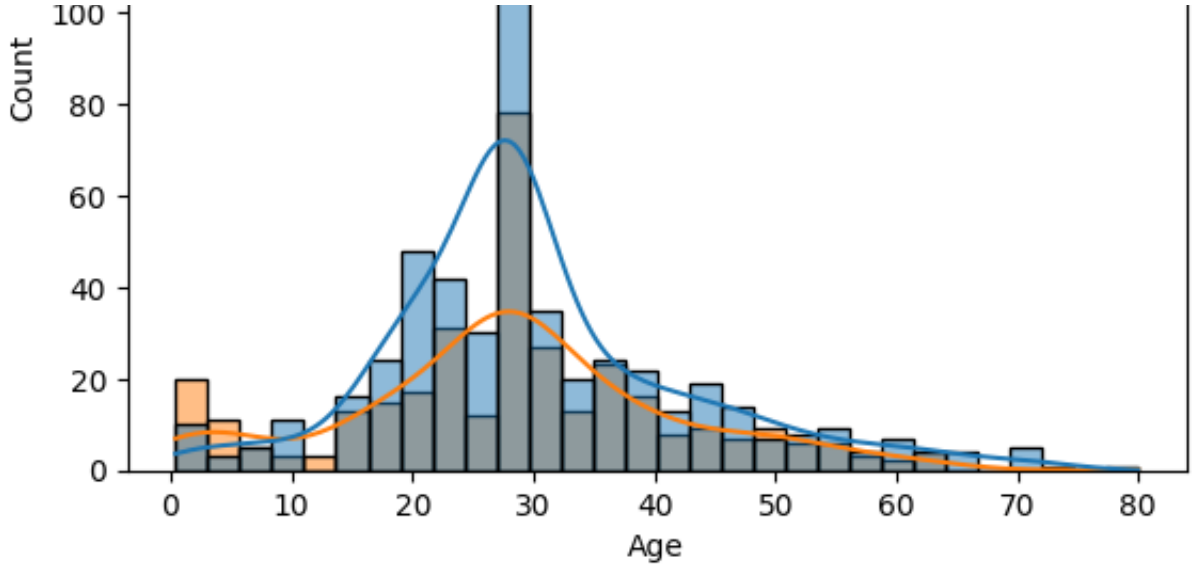
```
sns.countplot(x='Survived', hue='Sex', data=df)
plt.title("Survival Count by Sex")
plt.show()

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

sns.histplot(data=df, x='Age', hue='Survived', bins=30, kde=True)
plt.title("Age Distribution by Survival")
plt.show()
```




200
100
0
0
1
Survived


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


Age Distribution by Survival
Survived
0
1
160
140
120




```
data = df.copy()

data['Sex'] = data['Sex'].map({'male': 0, 'female': 1})
data['Embarked'] = data['Embarked'].map({'S': 0, 'C': 1, 'Q': 2})

data.drop(['Name', 'Ticket', 'PassengerId'], axis=1, inplace=True)

X = data.drop('Survived', axis=1)
y = data['Survived']


from sklearn.model_selection import train_test_split

X_train, X_val, y_train, y_val = train_test_split(X, y, test_size=0.2, random_sta
```

```
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score, confusion_matrix

model = LogisticRegression(max_iter=1000)
model.fit(X_train, y_train)

y_pred = model.predict(X_val)
print("Accuracy:", accuracy_score(y_val, y_pred))
print("Confusion Matrix:\n", confusion_matrix(y_val, y_pred))
```

```
Accuracy: 0.7988826815642458
Confusion Matrix:
 [[89 16]
 [20 54]]
```

```
test_df = pd.read_csv("/test.csv")

test_df['Age'].fillna(df['Age'].median(), inplace=True)
test_df['Fare'].fillna(df['Fare'].median(), inplace=True)

test_df['Sex'] = test_df['Sex'].map({'male': 0, 'female': 1})
test_df['Embarked'] = test_df['Embarked'].map({'S': 0, 'C': 1, 'Q': 2})

passenger_ids = test_df['PassengerId']
test_df = test_df.drop(['Name', 'Ticket', 'Cabin', 'PassengerId'], axis=1)
```

```
/tmp/ipython-input-67-4239571140.py:5: FutureWarning: A value is trying to be
The behavior will change in pandas 3.0. This inplace method will never work be

For example, when doing 'df[col].method(value, inplace=True)', try using 'df.m


  test_df['Age'].fillna(df['Age'].median(), inplace=True)
/tmp/ipython-input-67-4239571140.py:6: FutureWarning: A value is trying to be
The behavior will change in pandas 3.0. This inplace method will never work be

For example, when doing 'df[col].method(value, inplace=True)', try using 'df.m


  test_df['Fare'].fillna(df['Fare'].median(), inplace=True)
```

```
predictions = model.predict(test_df)



submission = pd.DataFrame({
    'PassengerId': passenger_ids,
    'Survived': predictions
})

submission.to_csv("submission.csv", index=False)



from google.colab import files
files.download('submission.csv')
```

Start coding or generate with AI.