ASSIGNMENT NO 4

COURSE: ARTIFICIAL INTELLIGENCE

SUBMITTED TO : SIR ZUBAIR

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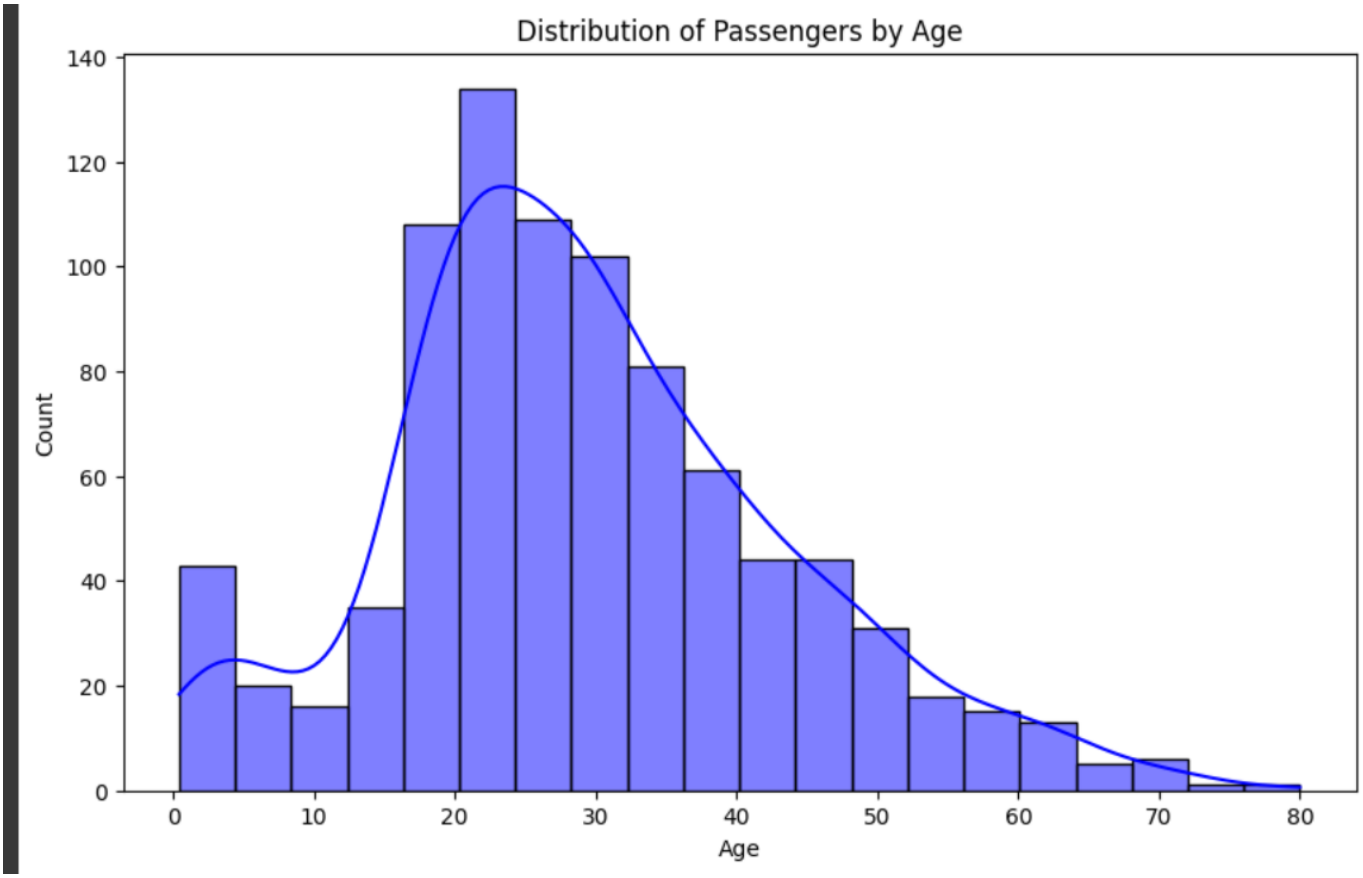
```python
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Load the dataset
url = "https://web.stanford.edu/class/archive/cs/cs109/cs109.1166/stuff/titanic.csv"
titanic_df = pd.read_csv(url)

# Handle missing values (for demonstration, dropping rows with missing values)
titanic_df.dropna(inplace=True)

# Data transformation: Replace 'Sex' with 'Gender'
titanic_df['Gender'] = titanic_df['Sex'].map({'male': 'Male', 'female': 'Female'})
titanic_df.drop(columns=['Sex'], inplace=True)  # Drop the original 'Sex' column

# Example visualizations

# Plot distribution of passengers by age
plt.figure(figsize=(10, 6))
sns.histplot(titanic_df['Age'], bins=20, kde=True, color='blue')
plt.title('Distribution of Passengers by Age')
plt.xlabel('Age')
plt.ylabel('Count')
plt.show()

# Survival rate by Gender
plt.figure(figsize=(8, 5))
sns.barplot(x='Gender', y='Survived', data=titanic_df, palette='pastel')
plt.title('Survival Rate by Gender')
plt.xlabel('Gender')
plt.ylabel('Survival Rate')
plt.show()
```




```
sns.barplot(x= 'Gender' , y= 'Survived' , data=titanic_df, palette= 'pastel' )
```