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

# Load dataset
df = pd.read_csv('train.csv')

# Show first few rows
print(df.head())

# Check for missing values
print(df.isnull().sum())

# Fill or drop missing data
df['Age'].fillna(df['Age'].median(), inplace=True)
df['Embarked'].fillna(df['Embarked'].mode()[0], inplace=True)
df.drop(columns=['Cabin'], inplace=True)  # Too many missing

# Set global Seaborn style
sns.set_style("whitegrid")

# Plot 1: Survival Count
sns.countplot(data=df, x='Survived', palette='Set2')
plt.title("Survival Count (0 = Died, 1 = Survived)", fontsize=14)
plt.xlabel("Survived", fontsize=12)
plt.ylabel("Count", fontsize=12)
plt.show()

# Plot 2: Survival by Gender
sns.countplot(data=df, x='Survived', hue='Sex', palette='pastel')
plt.title("Survival by Gender", fontsize=14)
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plt.xlabel("Survived", fontsize=12)
plt.ylabel("Count", fontsize=12)
plt.show()

# Plot 3: Age Distribution
sns.histplot(df['Age'], kde=True, bins=30, color='mediumslateblue')
plt.title("Age Distribution", fontsize=14)
plt.xlabel("Age", fontsize=12)
plt.ylabel("Frequency", fontsize=12)
plt.show()

# Plot 4: Survival by Passenger Class
sns.countplot(data=df, x='Pclass', hue='Survived', palette='muted')
plt.title("Survival by Passenger Class", fontsize=14)
plt.xlabel("Passenger Class", fontsize=12)
plt.ylabel("Count", fontsize=12)
plt.show()

# Plot 5: Correlation Heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(df.corr(numeric_only=True), annot=True, cmap='viridis', fmt=".2f", linewidths=.5)
plt.title("Correlation Matrix", fontsize=14)
plt.show()
```