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


df = pd.read_csv('/content/Titanic-Dataset.csv.csv')
df
```

|	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	S
...	...	...	...	...	...	...	...	...	...	...	...	...
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	13.0000	NaN	S
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.0000	B42	S
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	23.4500	NaN	S

```python
# Basic data pattern using seaborn
sns.countplot(x='Survived', data=df)
plt.title('Survival Count')
plt.show()

sns.boxplot(x='Pclass', y='Age', data=df)
plt.title('Passenger Class vs Age')
plt.show()

# Histogram of Fare
sns.histplot(df['Fare'], bins=30, kde=True)
plt.title('Fare Distribution')
plt.xlabel('Fare')
plt.ylabel('Count')
plt.show()
```

Survival Count

Passenger Class vs Age
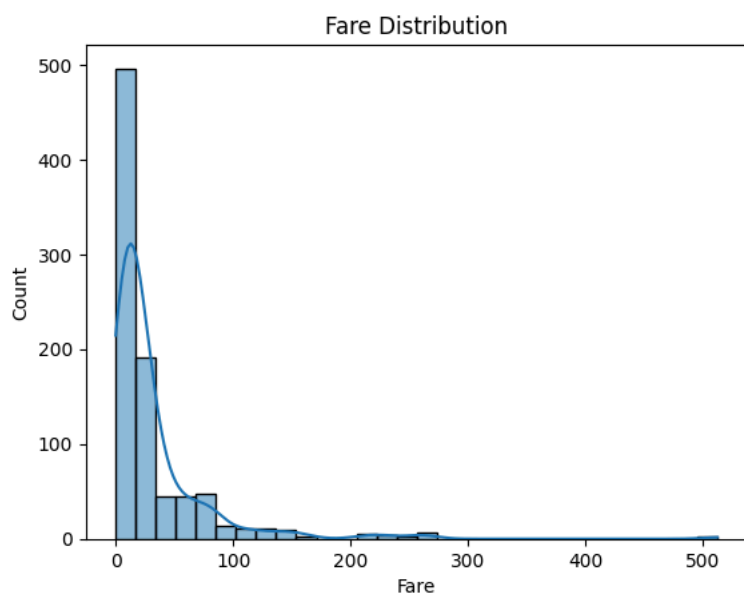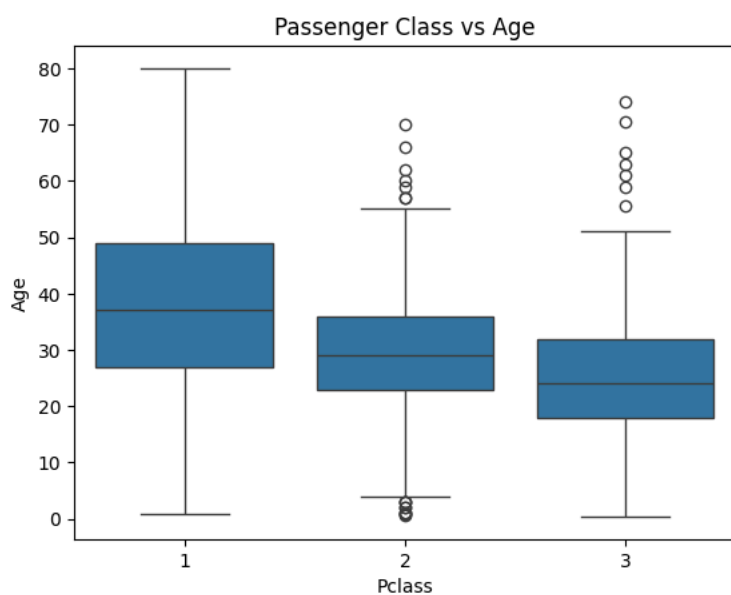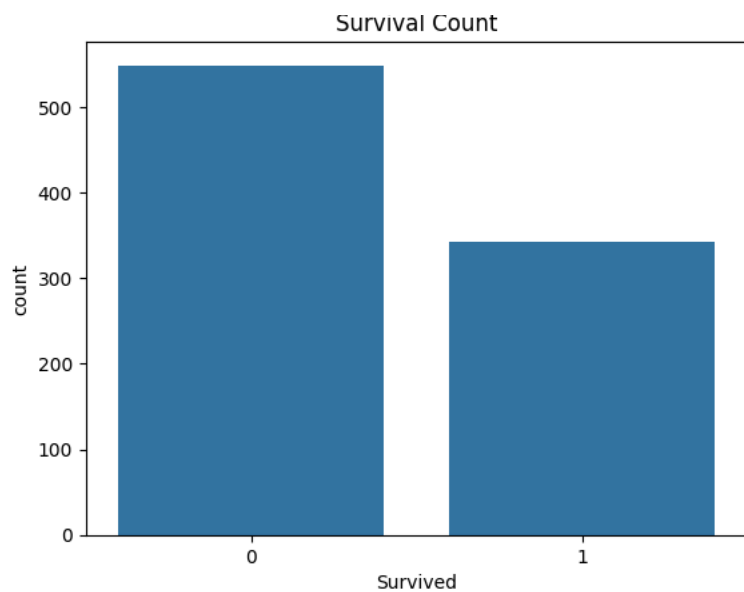
Fare Distribution


```
# a. Dist Plot
sns.histplot(df['Age'].dropna(), kde=True)
plt.title('Distribution of Age')
```

```python
plt.show()

# b. Joint Plot
sns.jointplot(x='Age', y='Fare', data=df, kind='scatter')
plt.suptitle('Joint Plot of Age vs Fare', y=1.02)
plt.show()

# d. Rug Plot
sns.rugplot(df['Fare'].dropna())
plt.title('Rug Plot of Fare')
plt.show()

# =======================
# B. CATEGORICAL PLOTS
# =======================

# a. Bar Plot
sns.barplot(x='Pclass', y='Fare', data=df)
plt.title('Average Fare per Class')
plt.show()

# b. Count Plot
sns.countplot(x='Survived', data=df)
plt.title('Survival Count')
plt.show()

# c. Box Plot
sns.boxplot(x='Pclass', y='Age', data=df)
plt.title('Boxplot of Age by Class')
plt.show()

# d. Violin Plot
sns.violinplot(x='Pclass', y='Age', data=df)
plt.title('Violin Plot of Age by Class')
plt.show()

# =======================
# C. ADVANCED PLOTS
# =======================

# a. Strip Plot
sns.stripplot(x='Survived', y='Age', data=df, jitter=True)
plt.title('Strip Plot of Age by Survival')
plt.show()

# b. Swarm Plot
sns.swarmplot(x='Survived', y='Age', data=df)
plt.title('Swarm Plot of Age by Survival')
plt.show()

# =======================
# D. MATRIX PLOTS
# =======================

# a. Heat Map
corr = df.corr(numeric_only=True)
sns.heatmap(corr, annot=True, cmap='coolwarm')
plt.title('Heatmap of Correlation')
plt.show()

# b. Cluster Map
sns.clustermap(corr, annot=True, cmap='viridis')
plt.suptitle('Cluster Map of Correlation', y=1.02)
plt.show()
```

Distribution of Age

Joint Plot of Age vs Fare

Rug Plot of Fare