```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

# For pretty plots
sns.set(style="whitegrid")
```

```
from google.colab import files
uploaded = files.upload()
```

Choose Files 3 files

- **gender_submission.csv**(text/csv) - 3258 bytes, last modified: 4/28/2025 - 100% done
- **test.csv**(text/csv) - 28629 bytes, last modified: 4/28/2025 - 100% done
- **train.csv**(text/csv) - 61194 bytes, last modified: 4/28/2025 - 100% done

```
Saving gender_submission.csv to gender_submission (2).csv
Saving test.csv to test (2).csv
Saving train.csv to train (2).csv
```

```
import pandas as pd

train_df = pd.read_csv('train.csv')
test_df = pd.read_csv('test.csv')
gender_submission_df = pd.read_csv('gender_submission.csv')
```

```
train_df.info()
```

```
<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
```

```
train_df.describe()
```

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
count	891.000000	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	446.000000	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	257.353842	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	1.000000	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	223.500000	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	446.000000	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	668.500000	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	891.000000	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

```
train_df.head()
```

	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

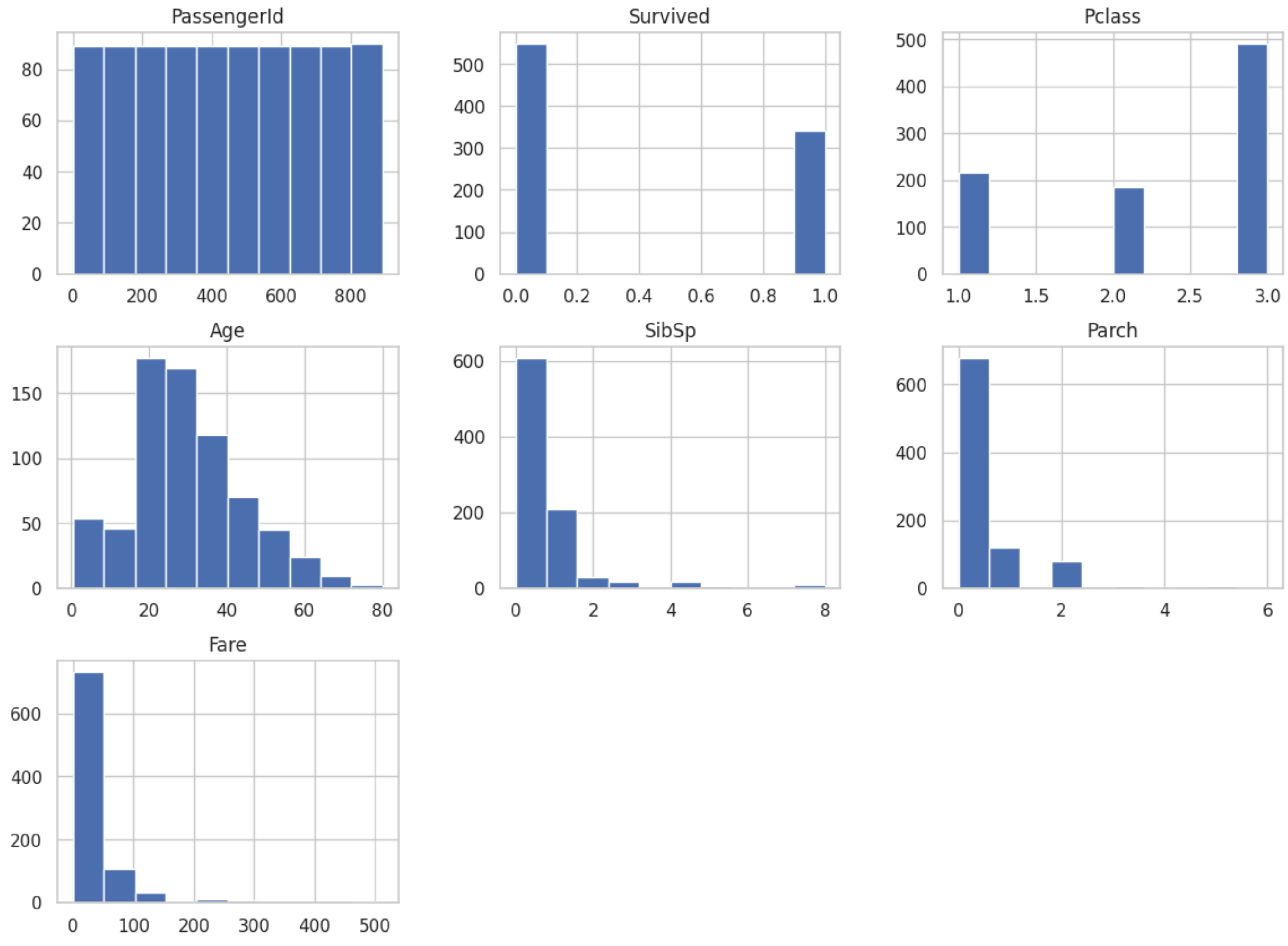
Next steps: Generate code with train_df View recommended plots New interactive sheet

```
train_df['Sex'].value_counts()
train_df['Embarked'].value_counts()
train_df['Pclass'].value_counts()
```

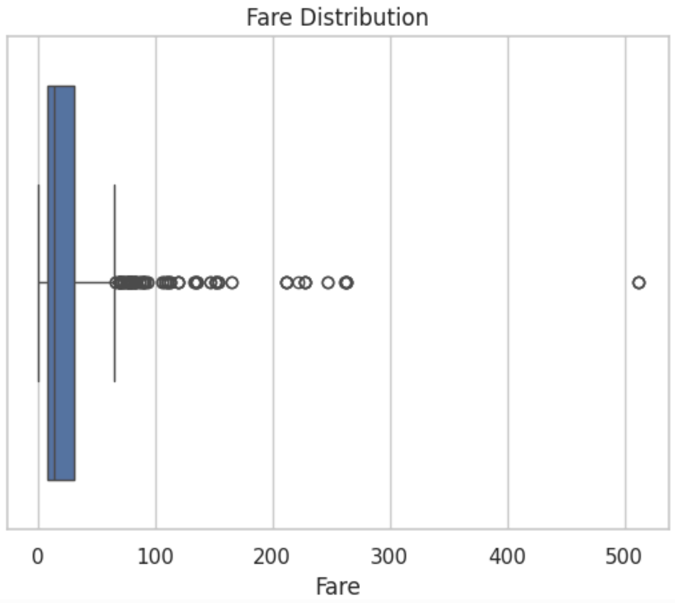
	count
Pclass	
3	491
1	216
2	184

dtype: int64

```
train_df.hist(figsize=(14,10))
plt.show()
```

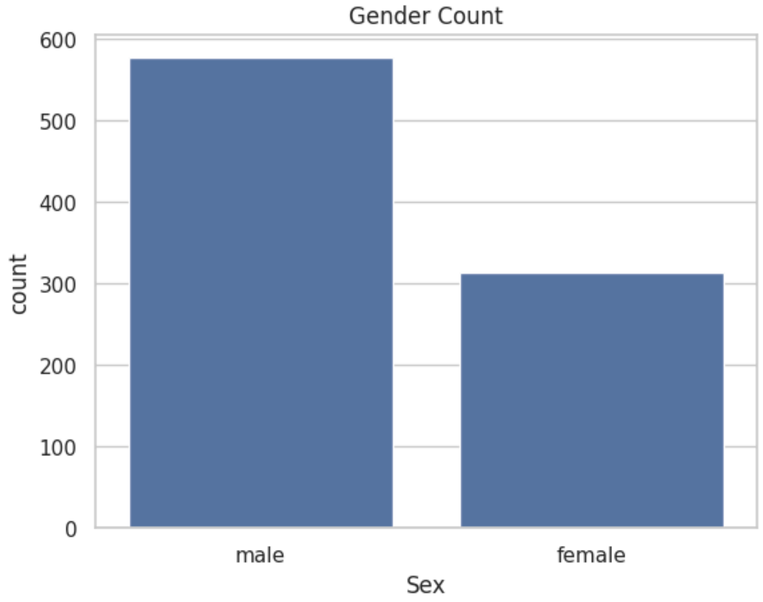


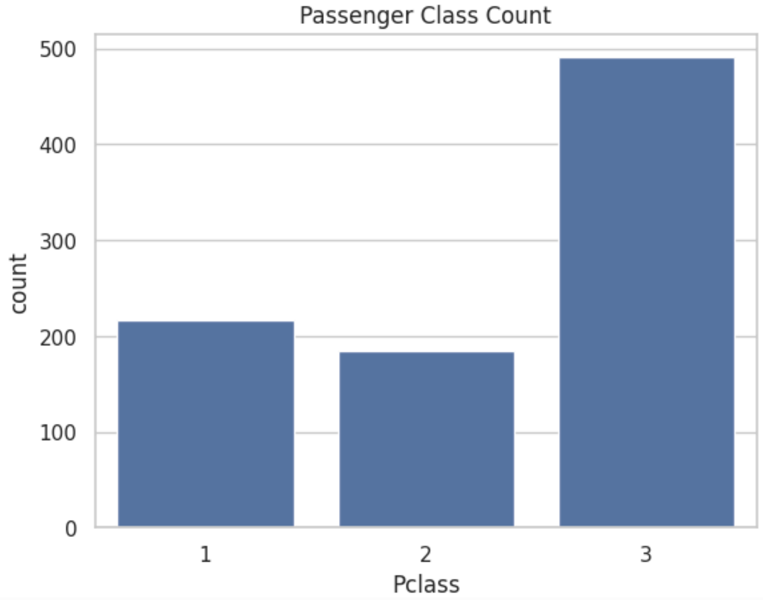
```
sns.boxplot(x=train_df['Fare'])
plt.title('Fare Distribution')
plt.show()
```



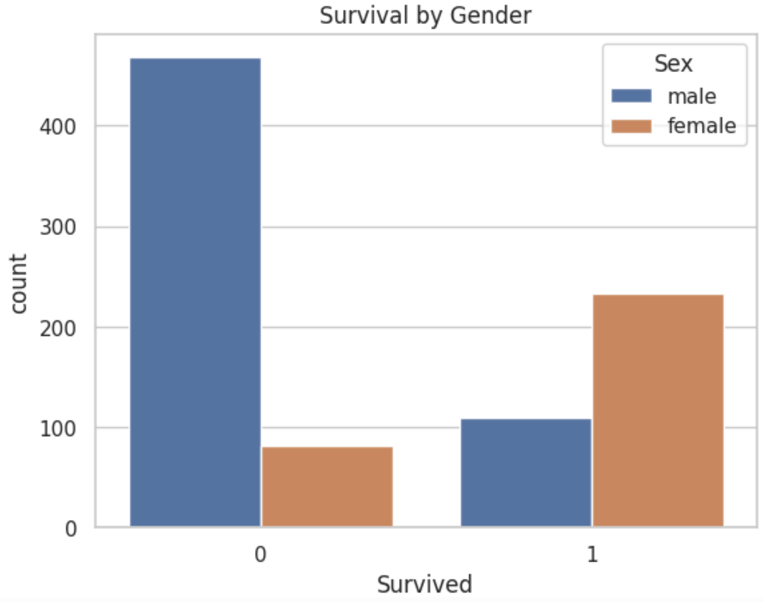
```
sns.countplot(x='Sex', data=train_df)
plt.title('Gender Count')
plt.show()

sns.countplot(x='Pclass', data=train_df)
plt.title('Passenger Class Count')
plt.show()
```

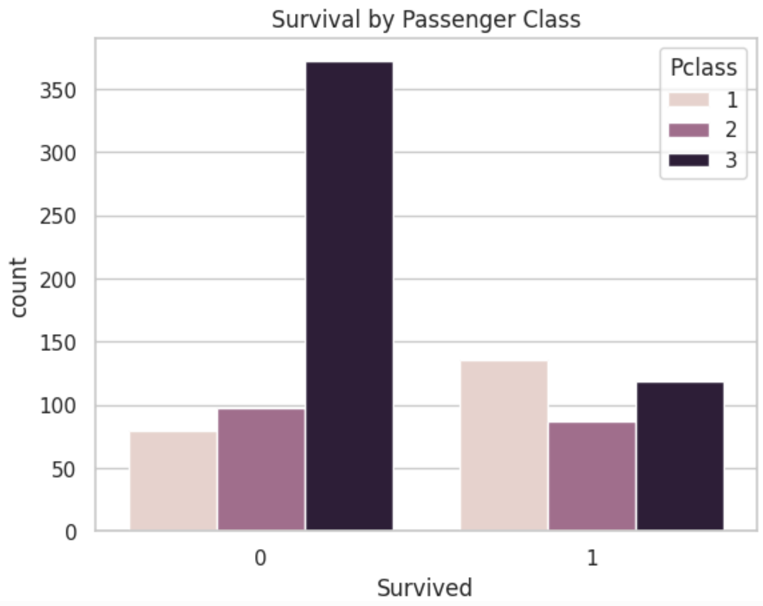




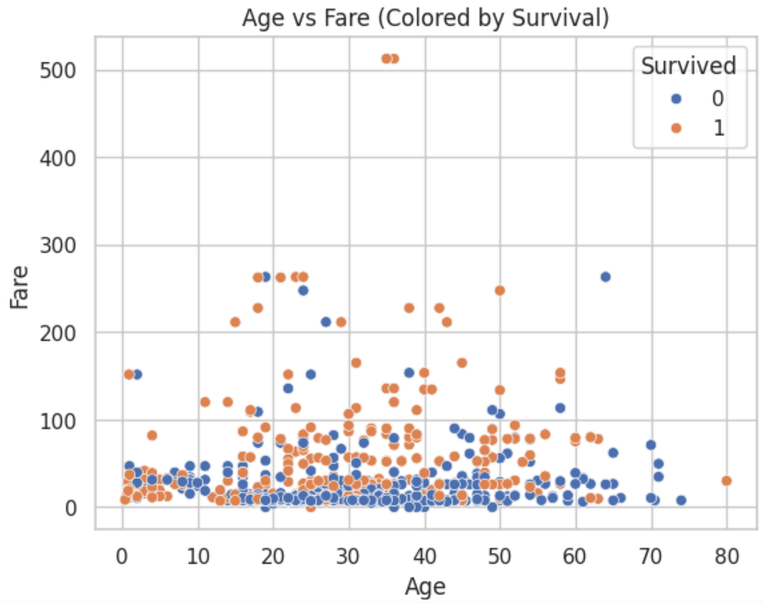
```
sns.countplot(x='Survived', hue='Sex', data=train_df)
plt.title('Survival by Gender')
plt.show()
```



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

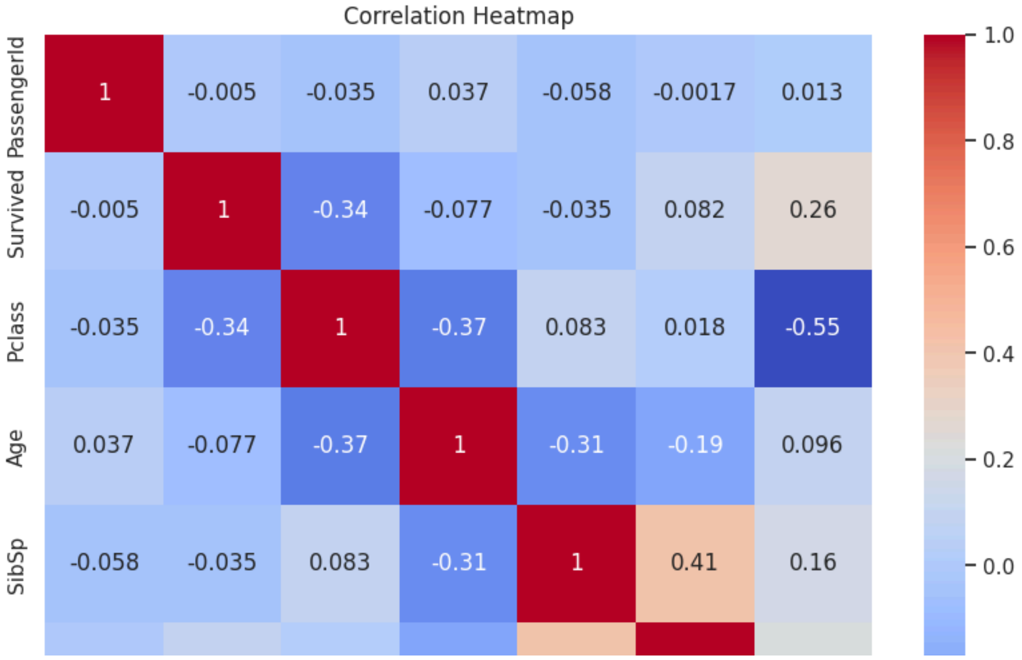


```
sns.scatterplot(x='Age', y='Fare', hue='Survived', data=train_df)
plt.title('Age vs Fare (Colored by Survival)')
plt.show()
```



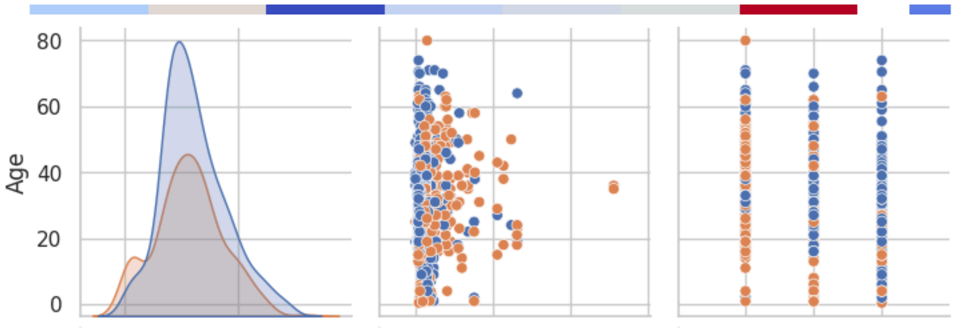
```
# Select only numeric columns
numeric_cols = train_df.select_dtypes(include=['float64', 'int64'])

# Plot correlation heatmap
plt.figure(figsize=(10,8))
sns.heatmap(numeric_cols.corr(), annot=True, cmap='coolwarm')
plt.title('Correlation Heatmap')
plt.show()
```



PassengerId	1	-0.005	-0.035	0.037	-0.058	-0.0017	0.013
Survived	-0.005	1	-0.34	-0.077	-0.035	0.082	0.26
Pclass	-0.035	-0.34	1	-0.37	0.083	0.018	-0.55
Age	0.037	-0.077	-0.37	1	-0.31	-0.19	0.096
SibSp	-0.058	-0.035	0.083	-0.31	1	0.41	0.16

```
sns.pairplot(train_df[['Survived', 'Age', 'Fare', 'Pclass']], hue='Survived')
plt.show()
```


Age