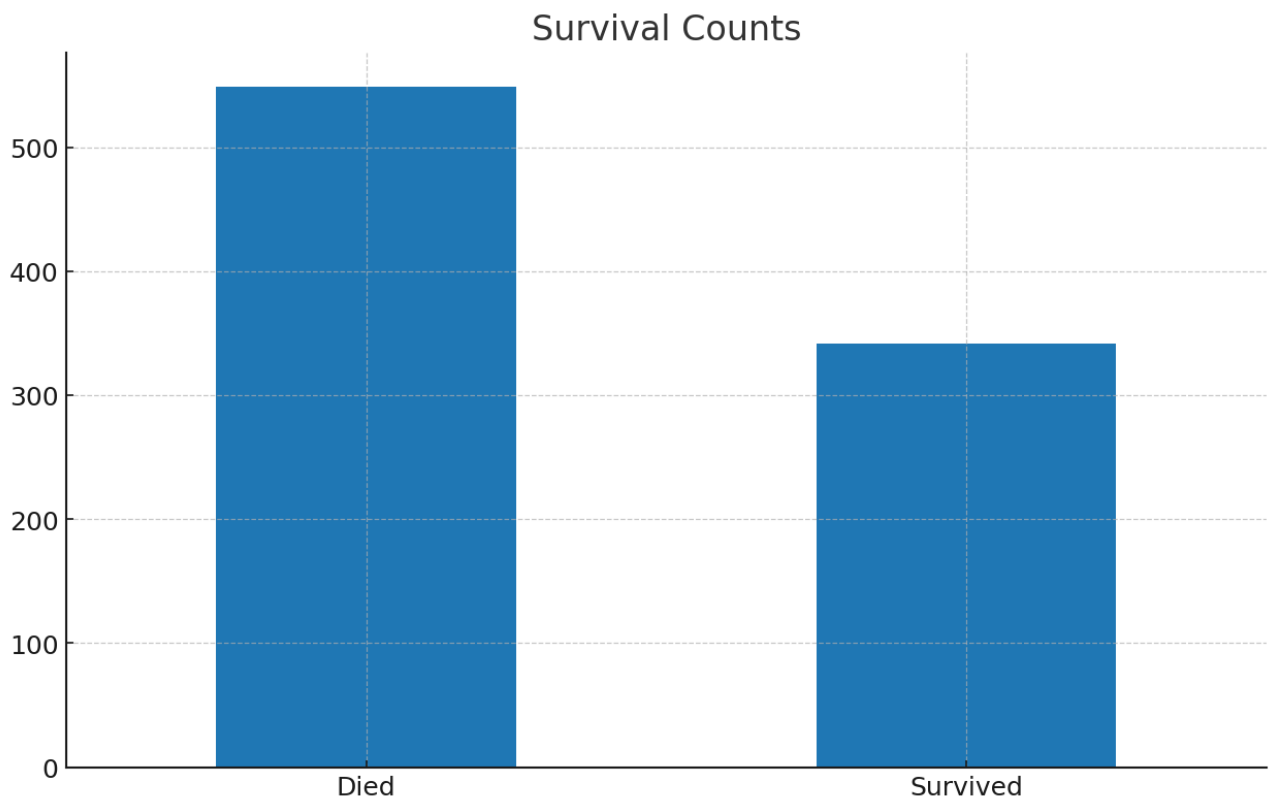# Titanic Dataset - Visual & Statistical Exploration

This report contains a concise visual and statistical exploration of the Titanic training dataset. Key analyses: overview, missing values, survival rates by sex and class, age effects, and correlations.
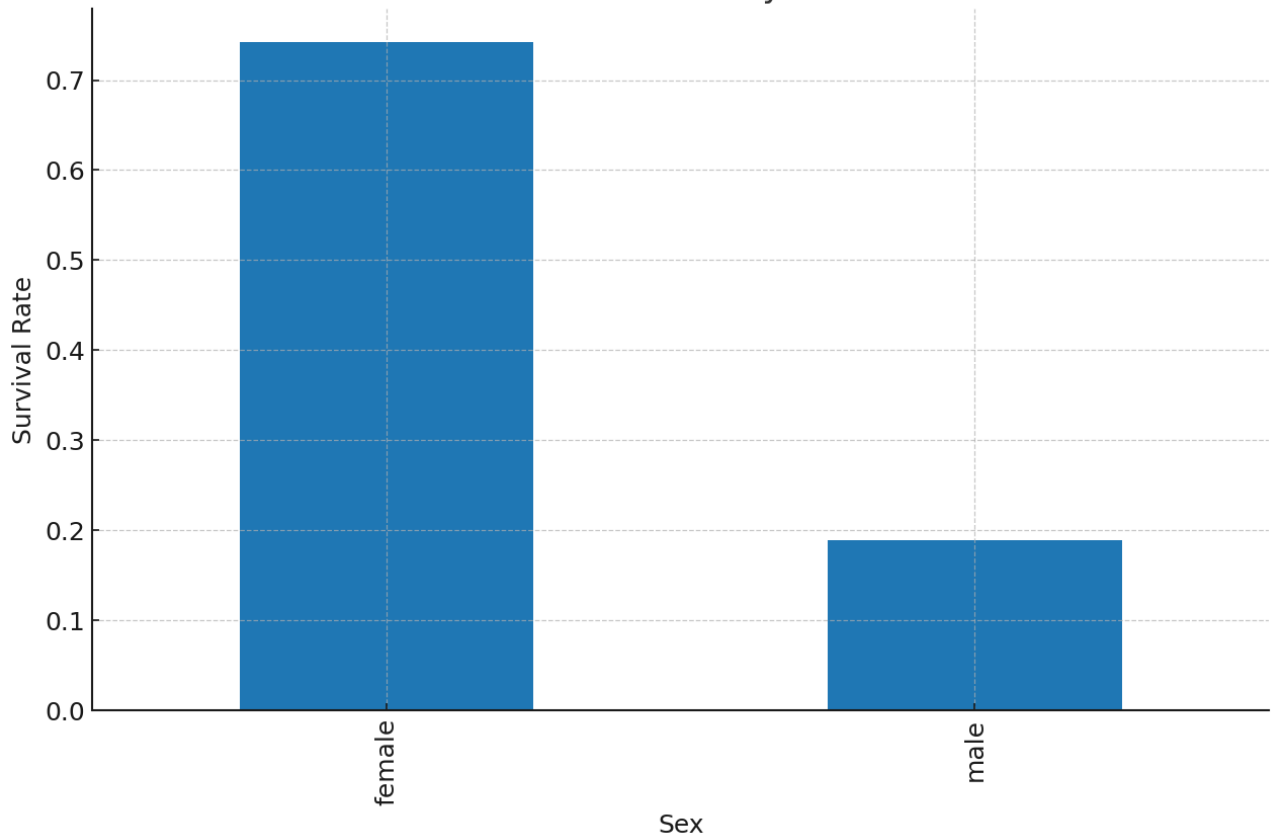
Key metrics and missing values

Records: 891 Features: 12

Overall survival rate: 0.384

Missing values (top): Age=177, Cabin=687, Embarked=2
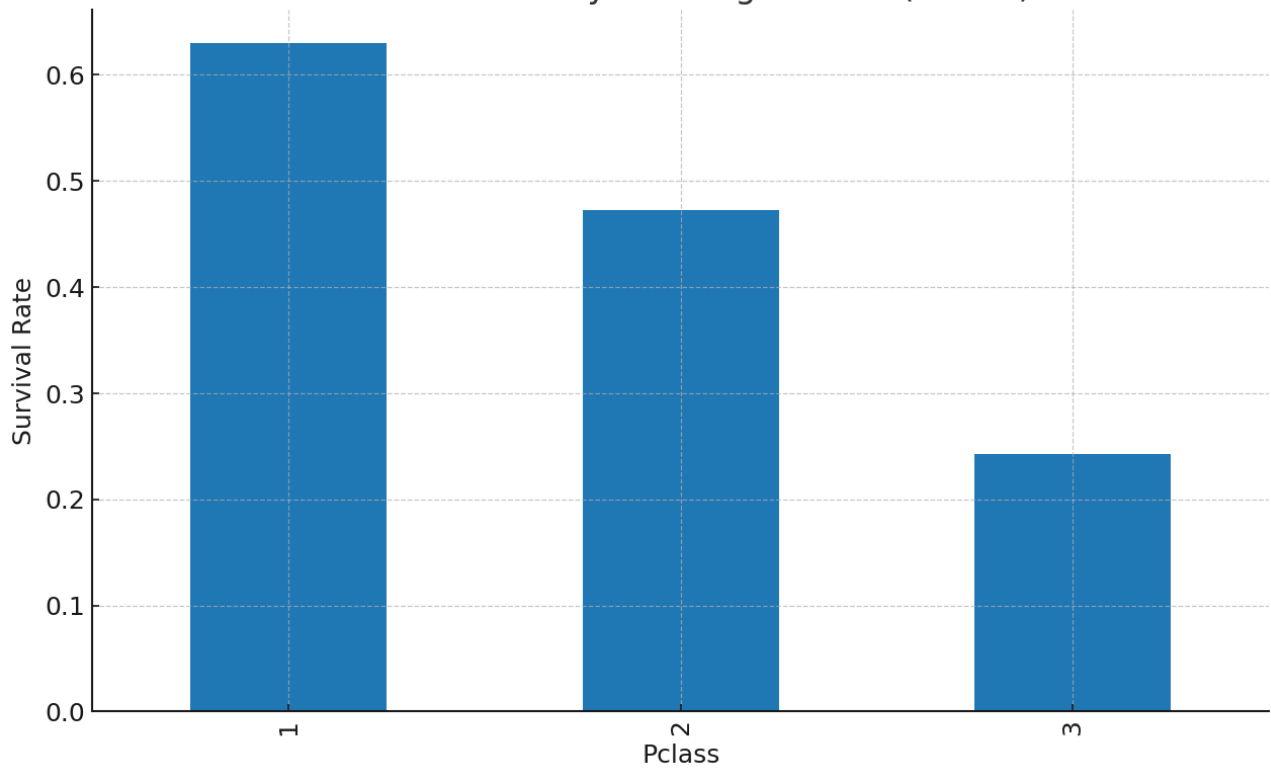
Survival counts (0 = died, 1 = survived)

Survival rate by sex
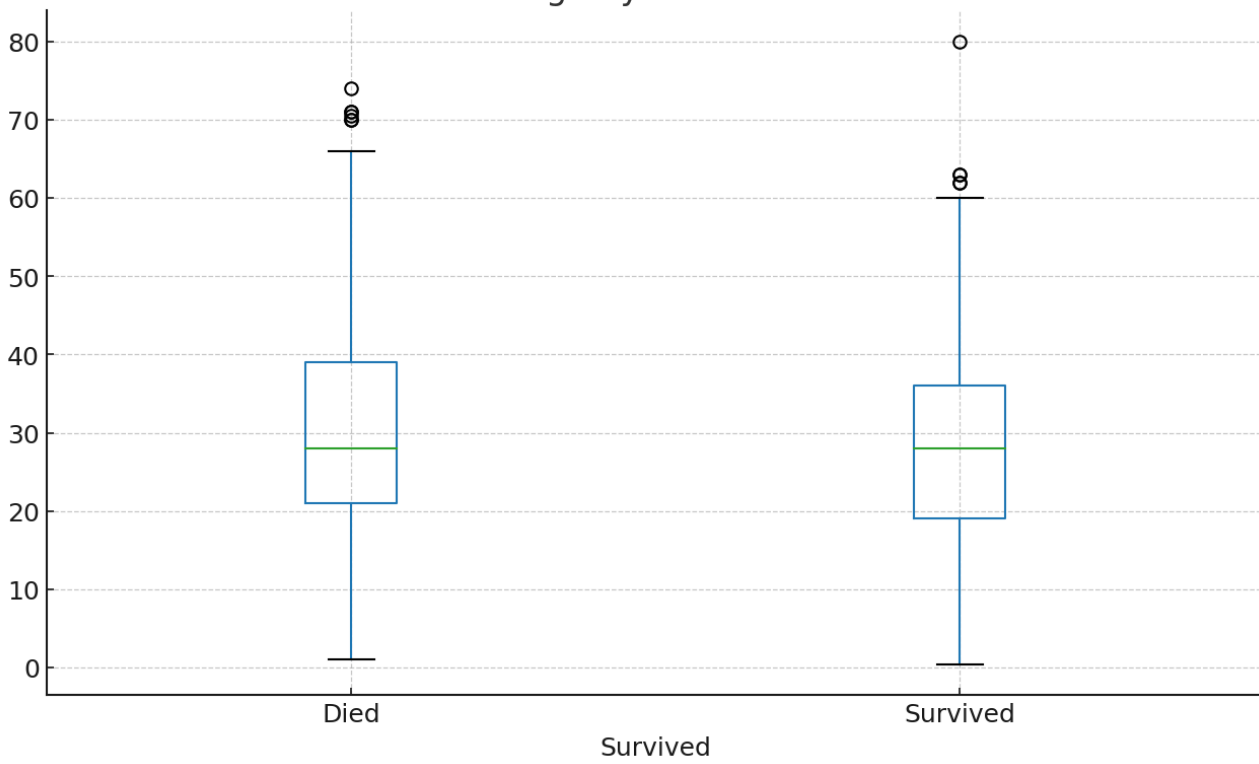
Survival Rate by Sex

Survival rate by passenger class (Pclass)

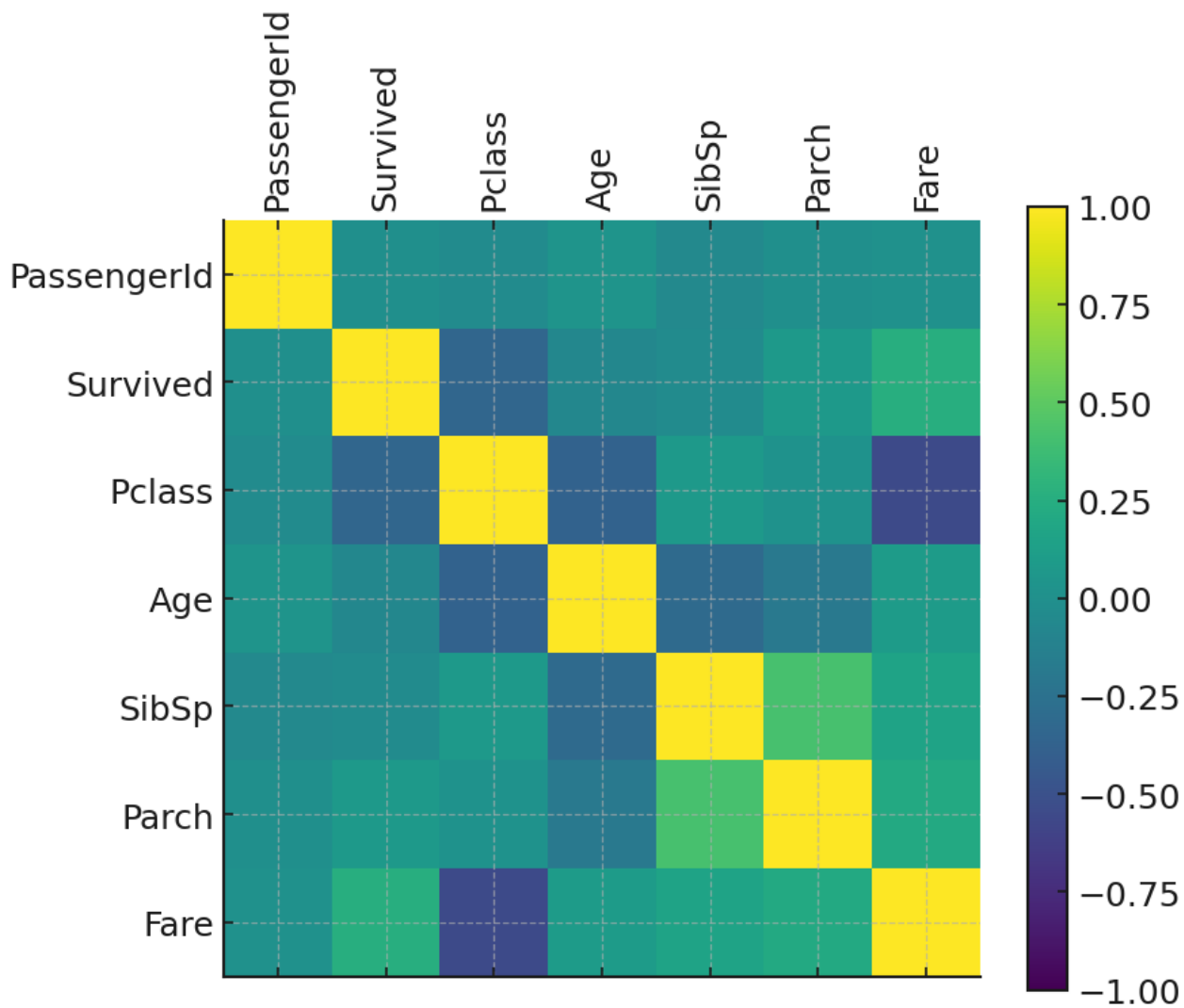## Survival Rate by Passenger Class (Pclass)

Age distribution by survival

Boxplot grouped by Survived
Age by Survival

Correlation matrix (numerical)

Correlation matrix (numerical features)

Conclusions

- Female passengers had a considerably higher survival rate than male passengers.

- First class passengers had higher survival rates than lower classes.

- Age shows that children had higher survival; the elderly had lower survival.

- Important predictors: Sex, Pclass, Fare. Missing Cabin limits cabin-based analysis.

The accompanying Jupyter Notebook contains code, further analysis, and steps to reproduce these figures.