

# Titanic EDA – Observation Report

## Survival Count

- The majority of passengers did not survive.
- Countplot shows a higher bar for Survived = 0 compared to Survived = 1.
- Indicates overall survival rate is less than 50%.

## Survival Rate by Gender

- Female passengers had a survival rate of around 0.7+.
- Male passengers had a survival rate of around 0.2.
- Gender was a strong factor in survival chances, with females more likely to survive.

## Survival Rate by Passenger Class

- First Class: ~0.6 survival rate.
- Second Class: ~0.4 survival rate.
- Third Class: ~0.2 survival rate.
- There is a positive relationship between higher class and higher survival chances.

## Age Distribution

- Age ranges from less than 1 year (~0.42) to 80 years.
- Most passengers were between 20–30 years old.
- Children and elderly were fewer in number.

## Fare Distribution

- Fares range from 0 to ~512.
- Most passengers paid under 100 units of fare.
- A small number of passengers had extremely high fares, likely first-class luxury cabins.

## Correlation Heatmap

- Strong positive correlation between Pclass and Fare (higher class → higher fare).
- Negative correlation between Pclass and Survived (lower class → lower survival rate).
- Sex (encoded numerically) shows strong correlation with Survived.