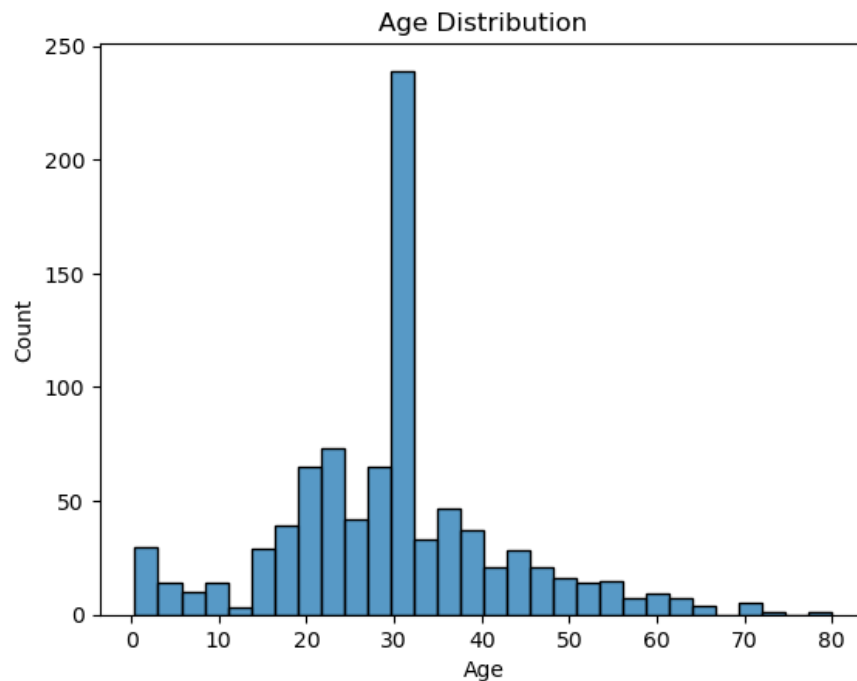# Titanic Data Analysis Report

-<u>Rohan Prabhakar</u>

1. Data Cleaning and Preparation

In this analysis, the dataset was preprocessed by converting categorical variables (like 'Sex' and 'Embarked') into numerical values. Missing values were handled appropriately (e.g., imputing the median or the most frequent value), and only relevant columns were selected for analysis.
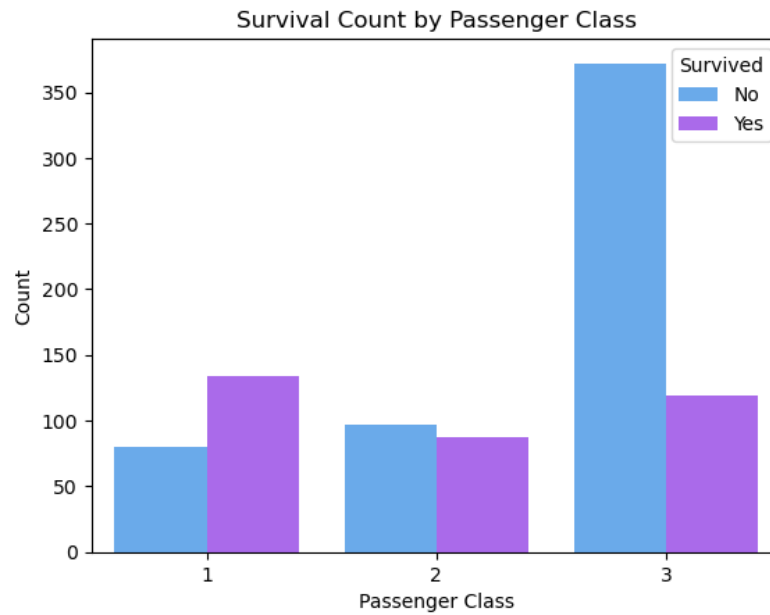
2. Age Distribution

The Age Distribution chart shows a wide range of passenger ages aboard the Titanic. Most travelers were young adults primarily in their 20s and 30s, with a few children and elderly passengers.
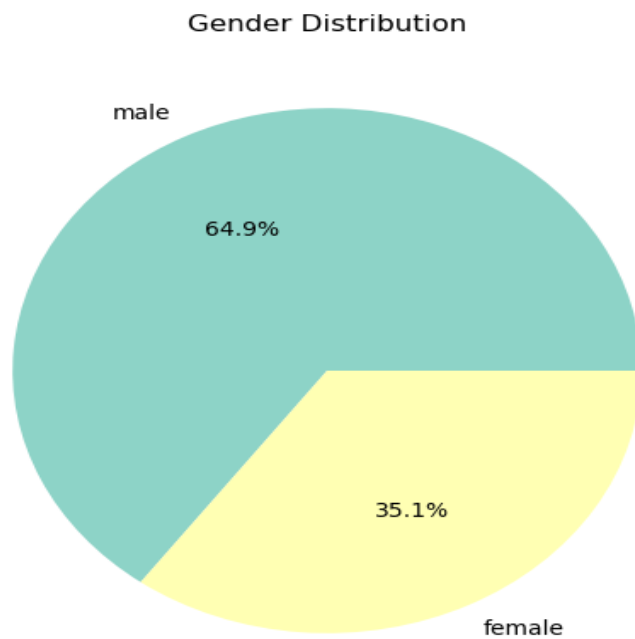

3. Survival Insights by Gender and Class

The survival analysis reveals differences by gender and passenger class. Charts show that more women survived than men, likely due to the 'women and children first' policy, and that first-class passengers had a higher survival rate when compared to third-class passengers.
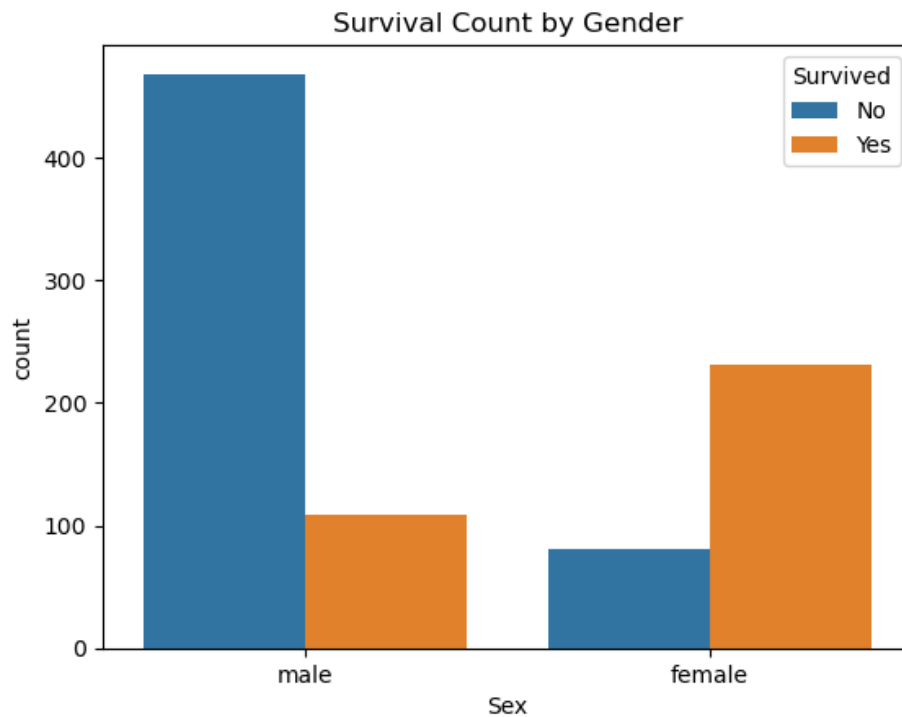
Survival Count by Passenger Class

4. Gender Distribution

The Gender Distribution pie chart shows that the majority of passengers were male, with a smaller proportion of females. This simple visualization gives a quick look at the overall gender balance of the dataset.
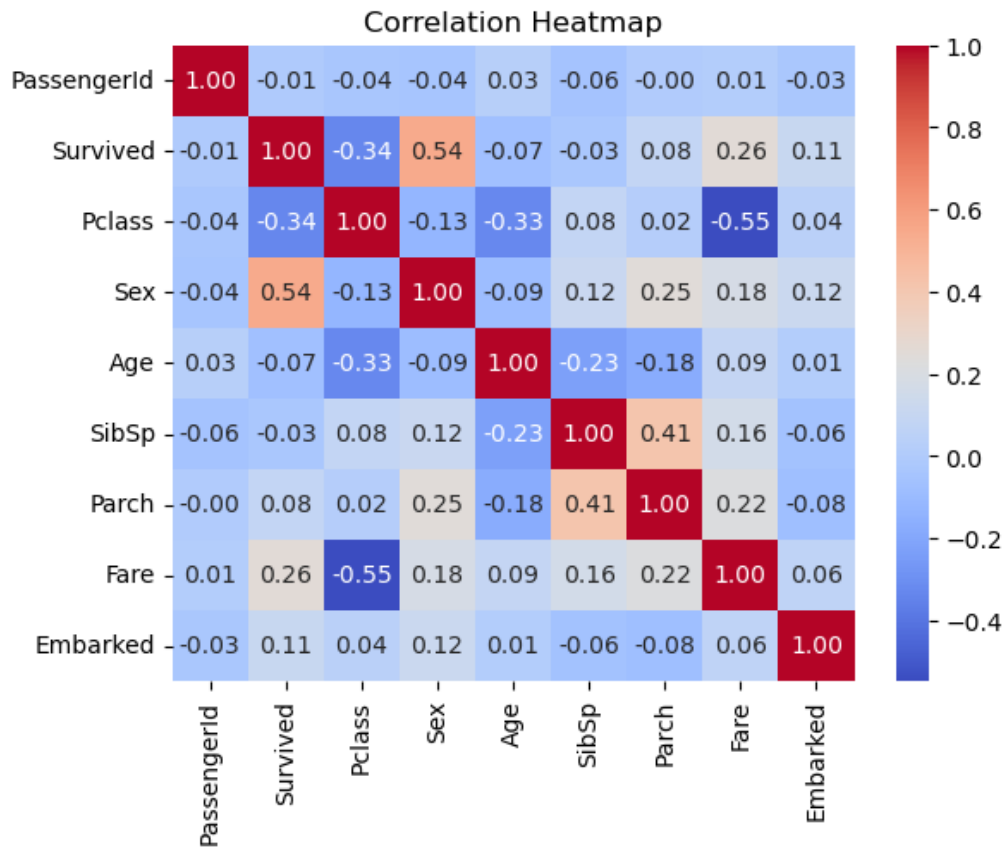

Gender Distribution

4. Gender Survival

The **Gender Survival Count** chart shows how many males and females survived versus did not survive the Titanic disaster. From this visualization, it's clear that a much higher number of women survived compared to men. which prioritized the safety of female passengers over males.

Survival Count by Gender

6. Correlation Heatmap

The Correlation Heatmap displays the relationships among numerical features in the dataset. Stronger correlations are shown in darker shades. For example, the relationship between 'Sex' and 'Survived' is clearly visible, hinting at the effects of gender on survival.

Correlation Heatmap

Conclusion

Through these visualizations, we gain valuable insights into the Titanic data. The report highlights how factors such as age, gender, class, and fare correlate with survival outcomes and reveals the nature of the passengers aboard the ship.