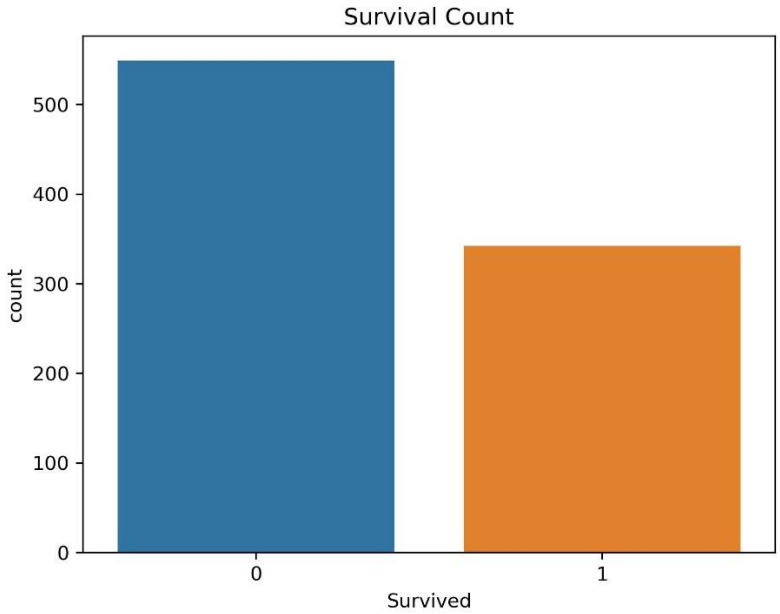
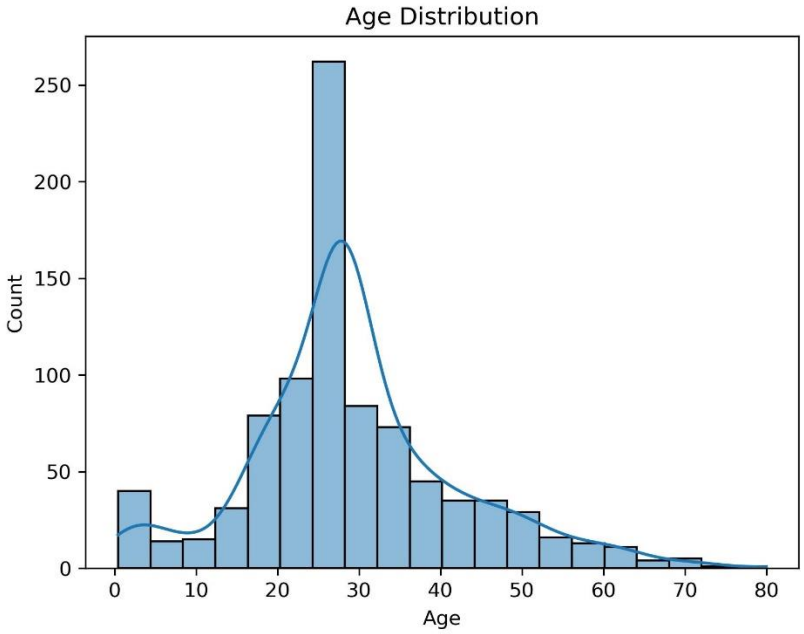
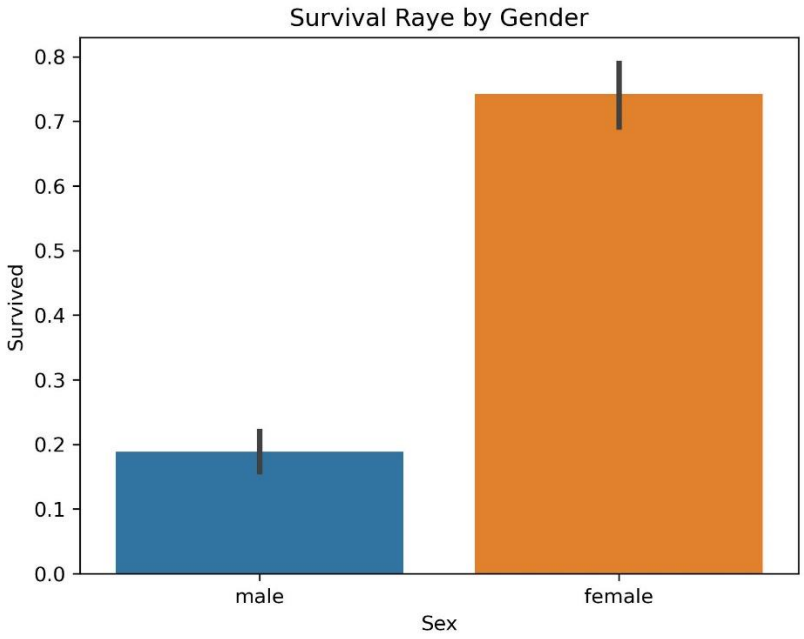


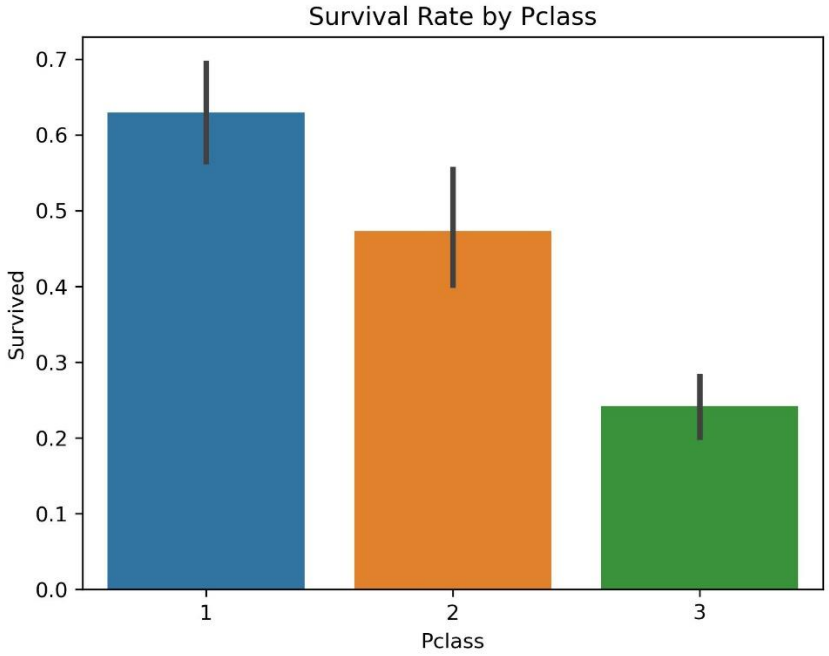
Survival Count (Bar Plot):
The dataset contains more passengers who did not survive (Survived = 0) compared to those who survived (Survived = 1).
The difference is notable — the number of non-survivors is roughly twice the number of survivors. This suggests that survival was less common, which aligns with the Titanic dataset's historical context.



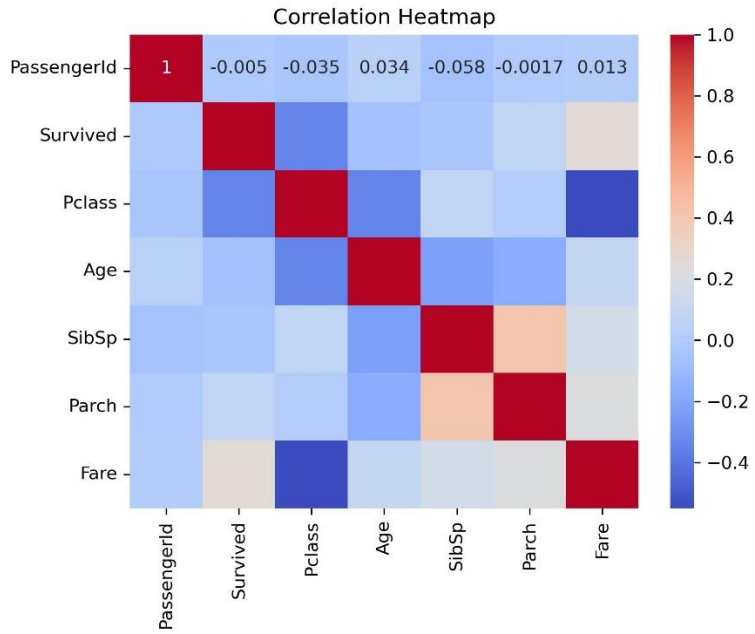
Age Distribution (Histogram with KDE):
The majority of passengers were between 20 and 40 years old, with a peak around 28–30 years. There is a small group of very young passengers (infants and children under 10) and fewer elderly passengers (above 60). The distribution is right-skewed, meaning there are fewer older passengers compared to younger ones.
The smooth KDE curve confirms the peak in the young adult range and gradual decline in counts as age increases.



Survival Rate by Gender:
Females had a much higher survival rate than males.
The female survival rate is above 70%, while the male survival rate is below 20%.
This strongly suggests that gender played a major role in survival, possibly due to the “women and children first” policy during evacuation.



Survival Rate by Passenger Class (Pclass):
Passengers in 1st class had the highest survival rate (around 65–70%).
2nd class passengers had a moderate survival rate (around 45–50%).
3rd class passengers had the lowest survival rate (around 25%).
This indicates that socioeconomic status, represented by ticket class, significantly influenced survival chances.



Survival (Survived) shows:

Negative correlation with Pclas ~ (-0.338) - Higher classes had better survival chances.

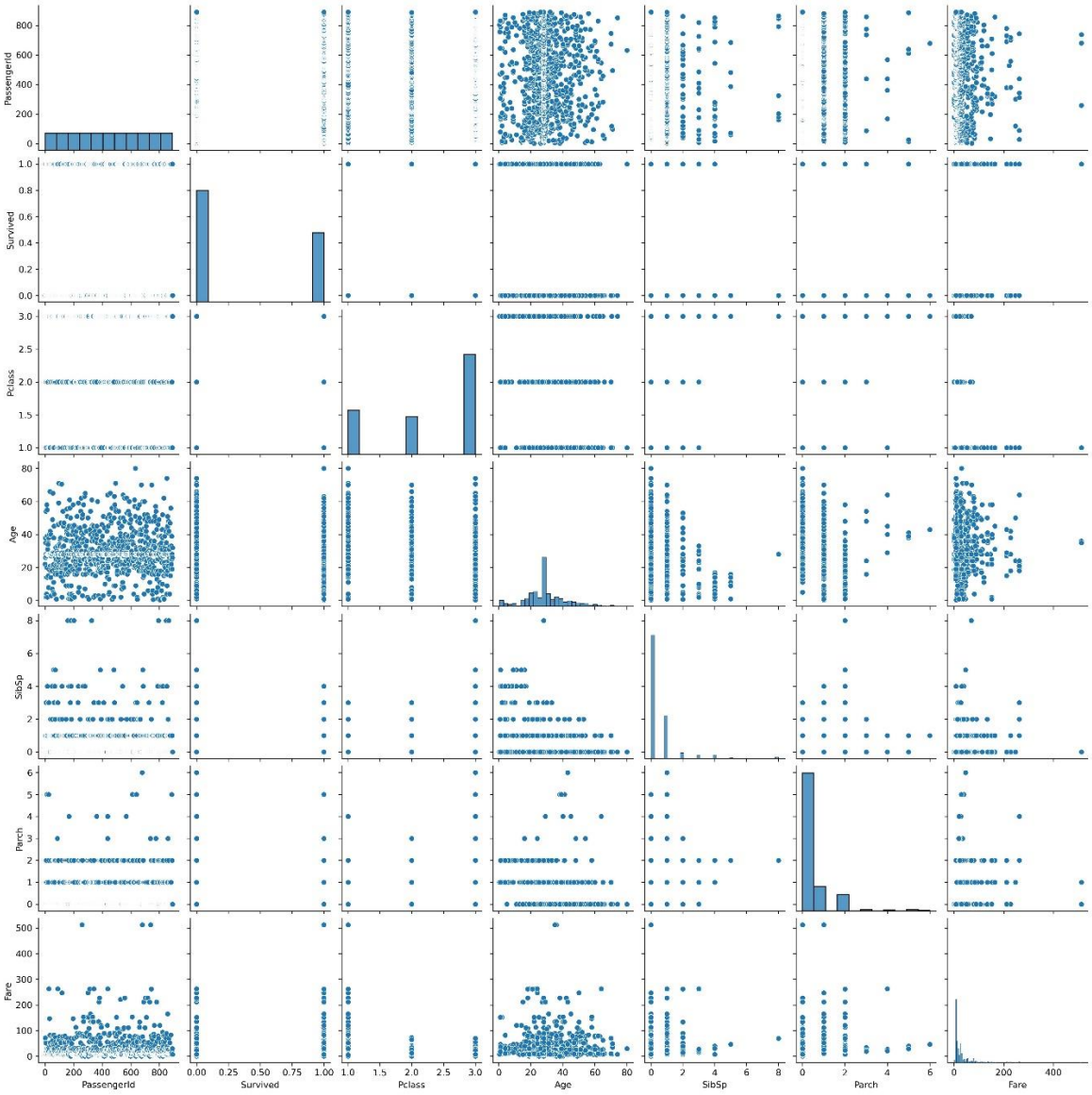
Positive correlation with Far~ e (0.257) - Passengers who paid higher fares were more likely to survive.

Very weak correlation with Age, SibSp, and Parch - These factors individually had minimal influence on survival probability.

Pclass and Fare have a strong negative correla ion (-0.55) - Higher-class tickets cost more.

SibSp and Parch have a moderate positive correla~ tion (0.41) - Passengers with more siblings/spouses on board often also had more parents/children traveling with them.

Most other correlations are weak (<0.1), meaning the dataset variables are relatively independent except for the relationships noted above.above.



Diagonal histograms show the distribution of each numeric variable:

Age is right-skewed, with most passengers between 20–40 years.

Fare is highly right-skewed, with a few passengers paying very high ticket prices.

SibSp and Parch have peaks at 0, meaning most passengers traveled alone without siblings/spouses or parents/children.

Scatter plots between variables:

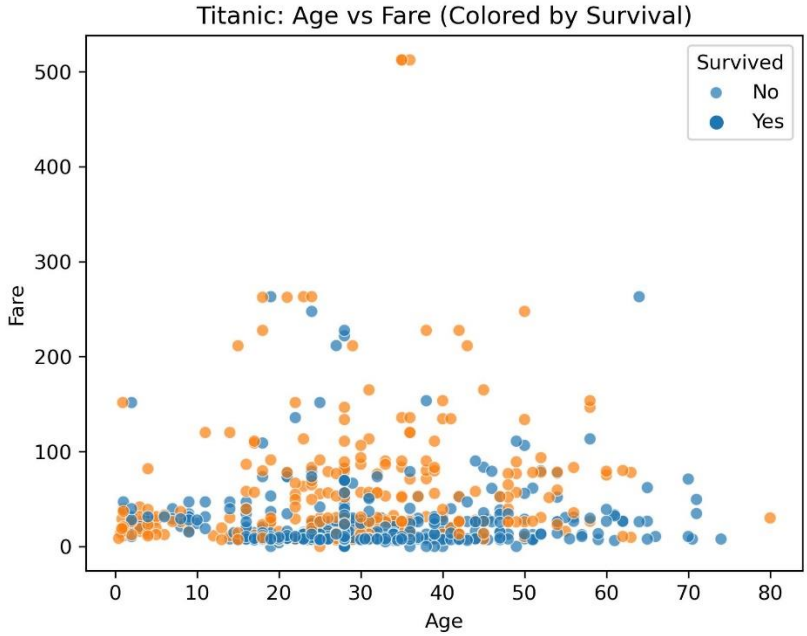
Fare vs Pclass: Clear separation — higher fares are associated with lower Pclass values (1st class).

Fare vs Survived: Higher fares are generally linked to higher survival rates.

Age vs Survived: No strong linear relationship, but younger passengers seem to have slightly better survival chances.

SibSp & Parch: Positive relationship — passengers with more siblings/spouses tend to also have more parents/children.

No strong linear relationships among most variables, which supports earlier correlation heatmap findings.



The observations for the Age vs Fare (Colored by Survival) scatter plot:

Most passengers paid fares below 100, regardless of age.

A few passengers paid extremely high fares (over 500), and these are mainly survivors — likely 1st-class passengers.

Survival (orange points) is more frequent among passengers with higher fares, indicating a link between wealth/class and survival chances.

Age does not show a strong trend with survival — survivors and non-survivors are spread across all age groups.

Younger passengers (children) and older passengers with higher fares seem to have had better chances of survival compared to low-fare passengers.