Titanic Dataset Analysis — Summary Report

Objective:
Explore relationships between passenger features and survival on the Titanic.

Key Visualizations & Observations

- **Age Distribution by Survival:**
  Younger passengers, especially children, had higher survival rates compared to older passengers.
- **Fare Distribution by Passenger Class:**
  Passengers in 1st class paid significantly higher fares and had better chances of survival than those in lower classes.
- **Age vs Fare by Survival:**
  Survivors were often either younger or paid higher fares, indicating a survival advantage linked to age and ticket cost.
- **Correlation Heatmap:**
  Passenger class and fare showed moderate correlations with survival, highlighting these as important survival predictors.

Summary of Findings

- Survival chances were strongly influenced by passenger class and fare paid, with 1st class passengers having the highest survival rates.
- Age had a weaker but noticeable effect; children and younger adults were more likely to survive.
- The dataset contains missing values in age and some other columns which could impact the analysis.
- Gender and embarkation point, though not deeply analyzed here, are also known factors influencing survival.

Conclusion

This analysis confirms that socio-economic status (class, fare) and age were key determinants of survival on the Titanic. Further work could include exploring gender effects, family size, and ticket fare more deeply for comprehensive insights.