Summary of Findings

After conducting an exploratory data analysis (EDA) on the Titanic dataset, the following key insights were observed:

1. Survival Rates

- Overall, a **higher proportion of passengers did not survive** the Titanic disaster (~62% deaths vs ~38% survivors).

- **Females** had a significantly **higher survival rate** (~74%) compared to males (~19%).

2. Impact of Passenger Class

- **First-class passengers** had the **highest survival rate** (~63%).

- **Third-class passengers** were the majority but had the **lowest survival rates** (~24%).

- Socio-economic status (ticket class) strongly influenced chances of survival.

3. Age Distribution

- Most passengers were between **20 and 40 years old**.

- **Children (younger passengers)** had relatively higher survival rates compared to adults.

- Median age of survivors was slightly lower than that of non-survivors.

4. Fare Influence

- Passengers who paid **higher fares** had a **higher probability of survival**.

- The **fare distribution** was **highly skewed**, with most passengers paying low fares and a few paying very high fares.

5. Embarkation Port

- Most passengers boarded from port **'S' (Southampton)**.

- Survival rates varied slightly based on embarkation point, but class and gender had stronger effects.

6. Correlation Insights

- **Fare** had a positive correlation with **Survival**.

- **Pclass** had a negative correlation with **Survival** (higher class = lower numeric value = better survival chances).

- Other features like **Age** had very weak correlation with survival.

Final Conclusion:

- Survival during the Titanic disaster was strongly influenced by **gender, socio-economic class, and fare paid**.

- Women, children, and first-class passengers were prioritized during the evacuation.

The EDA of the Titanic dataset reveals important human and socio-economic factors that played a critical role in survival — highlighting class privilege and gender-based rescue priorities during one of history's most infamous maritime disasters.