**ELEVATE\_LABS (DATA ANALYST INTERNSHIP)**

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**Domain: Data Analyst**

**Task 5: Exploratory Data Analysis (EDA) – Titanic Dataset**

**Observations for Each Visual**

**1. Survival Count**  
Around 38% of passengers survived, while ~62% did not survive.  
This shows the dataset is imbalanced towards non-survivors.

**2. Age Distribution**  
Most passengers were between 20–40 years old.  
There were fewer very young children and elderly passengers.

**3. Survival Rate by Gender**  
Female passengers had a much higher survival rate (~74%) compared to males (~19%).  
Gender was a strong factor in survival.

**4. Survival Rate by Passenger Class**  
Survival was highest in 1st class (~63%), moderate in 2nd class (~47%),  
and lowest in 3rd class (~24%).  
Passenger class strongly influenced survival chances.

**5. Embarked vs Survival**  
Passengers from port Cherbourg (C) had higher survival rates compared to ports S and Q.  
Embarkation location had some influence on survival.

**6. Fare Distribution**  
Survivors generally paid higher fares.  
This is consistent with more 1st class passengers surviving.

**7. Scatterplot: Age vs Fare**  
Higher fares and younger ages (especially children) were more likely associated with survival.

**8. Correlation Heatmap**

* Survived correlates positively with **Fare** and **Sex** (female).
* Pclass is negatively correlated with survival (lower class number → higher survival).
* Age has weak correlation with survival.

**Summary of Findings**

* **Gender:** Females had significantly higher survival rates than males.
* **Class:** 1st class passengers survived more often than 2nd and 3rd class.
* **Age:** Children had a better chance of survival than adults.
* **Fare:** Passengers who paid higher fares were more likely to survive (likely due to being in higher classes).
* **Embarked:** Passengers boarding from Cherbourg (C) survived at higher rates.
* **Overall:** Survival was strongly influenced by **gender, passenger class, and fare**, while age and embarkation port had moderate effects.