1. Overall Distributions

- **Age**
  - Distribution is approximately normal but **right-skewed**: a long tail of older passengers.
  - **Mean age ≈ 29.7**, **median ≈ 28**, with a concentration between ages 20–40.
  - Noticeable "child bump" under age 10, reflecting families with young children.
- **Fare**
  - Highly **right-skewed**: a few very expensive tickets (up to $512), but **75% of fares ≤ $50**.
  - When you cap fares at $100 for visualization, the majority cluster under $50, with a small tail stretching out to high values.

2. Passenger Class & Embarkation

- **Pclass Composition**
  - **3rd Class** is the largest cohort (~55%), **1st Class** makes up ~25%, and **2nd Class** about ~20%.
  - Reflects the ship's design: many steerage passengers, fewer in luxury.
- **Boarding Port**
  - **Southampton (S)** accounts for ~70% of embarkations, **Cherbourg (C)** ~19%, and **Queenstown (Q)** ~11%.
  - Little variation by class: even 1st-class passengers predominantly boarded at Southampton.

3. Survival Rates by Group

- **By Class**
  - **1st Class**: ~62–64% survived
  - **2nd Class**: ~47–49% survived
  - **3rd Class**: ~24–26% survived
  - Strong downward trend: lower classes had sharply lower odds of survival.
- **By Gender**
  - **Females**: ~75% survival
  - **Males**: ~19–20% survival
  - "Women and children first" policy clearly in effect.
- **By Age Group**
  - **Children (<18)**: modestly higher survival (~50–55%) than overall (~38%).
  - **Adults (18–60)**: around ~35% survival.
  - **Seniors (>60)**: small sample, survival ~20–25%, similar to adult males.

4. Fare & Survival

- **Average Fare Paid**
  - **Survived**: mean fare ≈ $48
  - **Did not survive**: mean fare ≈ $22
  - Indicates wealthier passengers had better access to lifeboats.

- **Fare Bands**
  - Passengers paying **> $50** had ~60–70% chance of survival
  - Those paying **< $20** had < 30% survival.

5. Correlation Insights

- **Survival vs. Pclass**: **–0.35** (strong negative)
- **Survival vs. Fare**: **+0.26** (moderate positive)
- **Survival vs. Age**: **–0.08** (weak negative)
- **Survival vs. SibSp/Parch**: near zero (little direct effect)

6. Family Size Dynamics

- **SibSp (siblings/spouses aboard)**
  - **0**: ~68% of passengers
  - **1**: ~22%
  - **≥2**: ~10%
- **Parch (parents/children aboard)**
  - **0**: ~76%
  - **1–2**: ~20%
  - **>2**: ~4%
- **Survival vs. Family Size**
  - Slight peak in survival when traveling with **one** family member (SibSp = 1 or Parch = 1), but declines when family groups grow large (SibSp ≥ 3).

7. Class vs. Age & Fare Patterns

- **Age by Class**
  - Median ages: 1st ≈ 37, 2nd ≈ 29, 3rd ≈ 24.
  - Younger demographic in lower classes—but all classes span children to seniors.
- **Fare by Class**
  - Median fares: 1st ≈ $60, 2nd ≈ $20, 3rd ≈ $8.
  - Clear separation: first-class passengers paid ~7× what 3rd-class did.

8. Two-Dimensional Views

- **Age vs. Fare (colored by Survival)**
  - Survivors populate both low-fare child clusters and high-fare adult clusters.
  - Little “magic age”—rather, high fare and female gender drive survival.
- **Embarkation vs. Survival**
  - **Cherbourg** boards show a slightly higher survival (~42%) compared to Southampton (~38%) and Queenstown (~32%), likely because more 1st-class passengers boarded at C.

Key Takeaway

Survival hinged primarily on **class**, **gender**, and **ticket fare**—a proxy for socioeconomic status and priority in evacuation. Age and family size had secondary effects: children and those with a single relative onboard had marginally better odds, but these factors pale compared to being a wealthy female in first class.