**Data Overview & Quality**

1. The dataset contains **891 rows and 12 columns**, including passenger demographic, ticket, and survival information.
2. Cabin has the highest missing values (~77%), making it unsuitable for direct analysis without imputation.
3. Age has ~20% missing values; imputation is needed for modeling.
4. Embarked has only 2 missing values, which can be filled with the most frequent port (S).

**👥 Passenger Demographics**

1. Majority of passengers are **male** (~64%), with females making up ~36%.
2. Most passengers are between **20–40 years old**, with a small peak for children under 10.
3. The age distribution is slightly right-skewed; few passengers are above 60.
4. Median fare paid was about **£14.45**, with a few extremely high fares (> £200).

**🚢 Travel Class & Fare**

1. **Pclass 3** has the largest number of passengers (~55%), followed by Pclass 1 (~24%) and Pclass 2 (~21%).
2. Median fare decreases sharply from Pclass 1 to Pclass 3, with first-class fares showing wide variation and many high outliers.
3. **Pclass and Fare** have a strong negative correlation (-0.55), meaning higher classes tend to have higher fares.

**📍 Boarding Ports**

1. Most passengers boarded at **Southampton (S)** (~72%), followed by Cherbourg (C) (~19%) and Queenstown (Q) (~9%).
2. Passengers from Cherbourg generally paid higher fares and had higher survival rates compared to other ports.

**💀 Survival Patterns**

1. Overall survival rate is about **38%** — 342 out of 891 passengers survived.
2. **Females** had a much higher survival rate (~74%) compared to males (~19%).
3. First-class passengers had the highest survival rate (~63%), while third-class had the lowest (~24%).
4. Children (especially under 10) had a higher chance of survival compared to adults in the same class.

**📊 Correlation Insights**

1. Survived shows the strongest correlation with Pclass (-0.34) and Fare (+0.26).
2. Age has a weak negative correlation (-0.08) with survival — age alone isn’t a strong predictor.
3. Family-related variables (SibSp and Parch) show weak correlations with survival individually, but engineered features like FamilySize may reveal stronger patterns.