# Exploratory Data Analysis Report — Titanic Dataset

## Objective

The objective of this analysis is to explore the Titanic dataset using statistical and visual methods to identify patterns, trends, relationships, and anomalies.

## Dataset Overview

The dataset contains 891 rows and 13 columns. It includes both numerical and categorical features such as passenger class, age, sex, fare, and survival status.

## Data Cleaning Findings

1. Age column contains missing values.
2. Cabin column has many missing values.
3. Embarked column has very few missing values.
4. Other columns are complete.

## Statistical Insights

1. Average passenger age is around 29 years.
2. Average fare is about 32.
3. Most passengers traveled alone.
4. Survival rate is approximately 38%.

## Visualization Insights

1. Most passengers were between 20–40 years old.
2. Females had significantly higher survival rate than males.
3. First class passengers had highest survival.
4. Third class passengers had lowest survival.

## Correlation Analysis

1. Passenger class negatively correlates with survival.
2. Fare and passenger class have strong negative correlation.
3. SibSp and Parch are moderately correlated.
4. Age has very weak correlation with survival.

## Final Conclusion

The analysis shows that gender, passenger class, and fare strongly influenced survival outcomes. Females and higher■class passengers had better survival chances. Age alone did not significantly impact survival. Socioeconomic factors played a major role in survival probability.