

# Project Case Study: Analysis Of Titanic Dataset

The Titanic dataset consists of 418 passenger records with 12 columns, including details such as age, gender, passenger class, fare, embarkation, and family relations. These columns are of mixed data types: 2 float columns, 5 integer columns, and 5 object columns, providing both numerical and categorical information for analysis.

## ❖ Age Analysis:

The Age analysis reveals that Titanic passengers ranged from children to the elderly, with young adults around 24 years being most common. Most males were aged 18–30, often traveling for work or migration, while older passengers mainly occupied first class, showing that wealthier travellers preferred luxury and comfort.

## ❖ Gender Trends Among Passengers:

The analysis of gender distribution reveals that male passengers outnumbered females on the Titanic. This difference was most evident in third class, where a large proportion of men travelled in search of work and better opportunities. The trend reflects the social and economic patterns of that era, as many young men from lower and middle classes were migrating across the Atlantic for a new beginning.

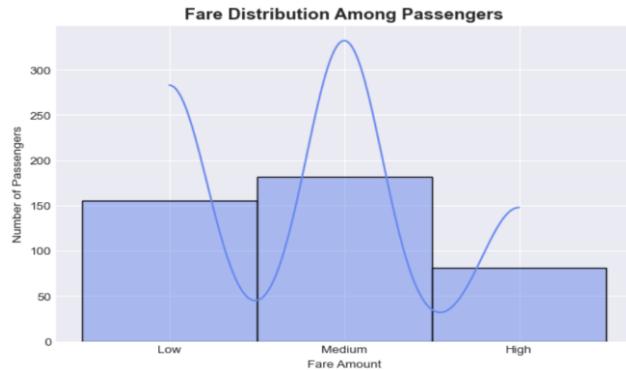
## ❖ Passenger Class Insights:

The class-wise analysis shows that most passengers travelled in third class (over half of the total), followed by second class, while first class had the fewest travellers. This highlights that the Titanic served not only as a luxury liner for the wealthy but also as a means of travel for middle- and working-class passengers. The first class was mainly occupied by older and affluent individuals, whereas younger travellers with limited means mostly chose third class cabins.



## ❖ Fare Distribution Analysis:

The Fare analysis reveals a wide gap between passenger groups. First-class travellers paid the highest fares, reflecting their access to luxurious cabins and exclusive facilities. In contrast, third-class passengers paid minimal fares, representing those from working- and middle-class backgrounds seeking affordable travel. The fare variation clearly illustrates the economic diversity aboard the Titanic, where class differences significantly shaped the travel experience.



## ❖ Embarkation Analysis:

Most passengers boarded from Southampton (270 passengers) with an average age of 28 years and average fare of 29, showing that many were middle-class and travelled mostly in third class. Passengers from Cherbourg were fewer, older (average age 32) and paid higher fares, indicating that many wealthy and older travellers boarded from here. Queenstown had the fewest passengers, mostly younger and paying less, mostly lower-class third-class travellers.

## ❖ Family and Travel Companions:

The dataset has columns for siblings/spouses (SibSp) and parents/children (Parch). There were about 127 families onboard. Around 537 passengers travelled alone, 209 travelled with 1 sibling or spouse, 45 with 2, and 25 with 3 or more. About 175 passengers travelled with at least one parent or child. This shows that while many were solo travellers (often young men moving for work), a significant number of families travelled together.

## ❖ Overall Insights:

The Titanic had a mix of different passengers. Most were young men in third class, showing middle-class and working-class travellers. Older and richer passengers stayed in first class, mostly boarding from Cherbourg. Southampton had the largest group, mostly younger middle-class people, while Queenstown had poorer passengers in third class. Ticket prices show big differences, with some paying a lot for luxury and others paying very little. The ship carried both solo travellers and families, showing a mix of society at that time.