Problem Statement

The Titanic dataset provides information about passengers who were aboard the RMS Titanic, including their personal details such as age, gender, class, and survival status. The goal of this project is to build a predictive model that can determine whether a passenger survived or did not survive the Titanic disaster based on these attributes.

The key challenge is to predict the **Survival** status (1 = Survived, 0 = Did not survive) of passengers using the following features:

- **Passenger Class (Pclass)**: The class of the passenger (1st, 2nd, or 3rd class).
- **Sex**: The gender of the passenger (Male or Female).
- **Age**: The age of the passenger (numeric value).
- **SibSp**: The number of siblings or spouses aboard the Titanic.
- **Parch**: The number of parents or children aboard the Titanic.
- **Fare**: The amount of money the passenger paid for the ticket.
- **Embarked**: The port where the passenger boarded the Titanic (C = Cherbourg, Q = Queenstown, S = Southampton).
- **Cabin**: The cabin the passenger stayed in (this feature is not always available in the dataset).

The task is to preprocess the dataset, handle missing data, explore relationships among features, and build a model that can predict survival accurately.

The outcome will help to understand how various factors like gender, age, class, and the port of embarkation contributed to the likelihood of survival, while creating a robust model for predicting survival of future passengers with similar attributes.