# Titanic – Survival Prediction of Passengers

## Problem Statement

The RMS Titanic was a British passenger liner that sank in the North Atlantic Ocean in the early morning hours of 15 April 1912, after it collided with an iceberg during its maiden voyage from Southampton to New York City. There were an estimated 2,224 passengers and crew aboard the ship, and more than 1,500 died, making it one of the deadliest commercial peacetime maritime disasters in modern history. The RMS Titanic was the largest ship afloat at the time it entered service and was the second of three Olympic-class ocean liners operated by the White Star Line. The Titanic was built by the Harland and Wolff shipyard in Belfast. Thomas Andrews, her architect, died in the disaster. We need to predict the survival of the passengers if the ship were to set sail today and there by find out more about people who have the highest chance of survival and encourage such people to join us on the voyage there by reducing the disaster rate.

## Project Design Methodology

Survival prediction model for Titanic using Random Forest classifier, Gradient Boosting, Logistic Regression algorithm ensembles, using scikit-learn. I used techniques like Data Transformation, Missing Values Treatment, Outlier value treatment, Exploratory data analysis, Machine learning algorithms like XGBoost, Random Forest Classifier, Logistic Regression, Hyperparameter tuning, Variance Inflation Factor and Information Value Analysis and evaluation of Machine learning algorithms like ROC score, Fscore, Precision recall curve etc.

## Final Products to be completed

1. Project Presentation
2. Project Report
3. Project code in the form of jupyter notebook.