**Business Proposal: Factors Affecting Passenger Survival in Maritime Disasters**

**Data Source**

The Titanic dataset provides demographics and attributes for 891 passengers. It has features like Pclass, Sex, Age, Fare. This is an interesting dataset as the Titanic sinking was one of the deadliest disasters in history. Analyzing this data can provide insights into the factors that influenced survival outcomes when the ship sank. These learnings can inform policies for better passenger coordination in potential future maritime disasters.

**Link to Dataset:** <https://github.com/luvrama/ml-jupyter-notebook/blob/main/Titanic.ipynb>

Analyzing this data can provide insights into survival factors valuable for the maritime industry.

**Business Problem**

What factors most strongly influenced passenger survival rates during the Titanic disaster? Identifying key correlations can help maritime agencies formulate better evacuation protocols and regulations.

**Hypotheses**

Hypothesis 1: Passenger class correlated with survival odds.

Hypothesis 2: Women and children had higher survival rates.

Hypothesis 3: Younger passengers had better survival odds.

**Analysis Plan**

**Hypothesis 1:** No difference in survival rate between passenger classes

* Use 2 sample t-test to compare survival rate between 2 passenger classes e.g. 1st class vs 2nd class
* Null hypothesis: There is no difference in mean survival rate between the two classes
* Alternate hypothesis: There is a significant difference in survival rate between the two classes
* Check p-value - if p-value < significance level (say 0.05), we can reject the null hypothesis

**Hypothesis 2:** No difference in survival rate between males and females

* Use 2 sample t-test to compare survival rate between males and females
* Null hypothesis: There is no difference in mean survival rate between males and females
* Alternate hypothesis: There is a significant difference in survival rate between males and females
* Check p-value - if p-value < significance level (say 0.05), we can reject the null hypothesis

**Hypothesis 3:** No correlation between age and survival rate

* Use tukey test between age and survival
* Null hypothesis: There is no correlation between age and survival
* Alternate hypothesis: There is a significant correlation between age and survival

**Audience**

The key audience is maritime safety regulators and cruise/ship operators.

**Benefits**

The findings would help the audience formulate optimized safety guidelines and evacuation protocols that improve passenger survival rates in potential maritime disasters.