● **Problem Statement (SMART)**
 By the end of a 4-week analysis period, determine the key passenger characteristics and circumstances that influenced survival on the Titanic, and provide at least **three actionable policy recommendations** for improving passenger safety during maritime disasters, ensuring that these recommendations address at least **80% of the risk factors identified in the dataset**.

● **Context**
 The sinking of the Titanic in 1912 highlighted critical safety vulnerabilities in passenger vessels, including evacuation procedures, lifeboat allocation, and emergency preparedness. Historical passenger data contains demographic and travel information that allows us to examine which factors most strongly impacted survival. By analyzing this data, the government can identify systematic safety gaps and propose policies to prevent similar disasters.

● **Criteria for Success**

  ● Identify and quantify the top factors influencing survival (e.g., class, gender, age, family size).

  ● Generate **at least three actionable safety policy recommendations** based on data insights.

  ● Ensure recommendations address **80% of the risk factors** identified in the analysis.

  ● Complete the analysis and reporting within **4 weeks**.

● **Scope of Solution Space**
 The potential solutions may include:

  ● **Regulatory updates** to ensure equitable access to safety equipment and lifeboats across all passenger classes.

  ● **Operational policy changes** regarding crew training, evacuation procedures, and communication protocols during emergencies.

  ● **Design and infrastructure improvements** for passenger vessels to enhance survivability and evacuation efficiency.

- **Data-driven monitoring systems** to assess compliance and readiness across passenger ships under U.S. jurisdiction.

- **Constraints**

  - Historical dataset with **~891 entries**; missing data may require imputation or careful handling.

  - Analysis must prioritize **interpretability and actionable insights**, not just predictive accuracy.

  - Recommendations must be feasible for implementation in real-world maritime policy contexts.

- **Stakeholders**

  - **Primary:** U.S. government agency responsible for passenger vessel safety.

  - **Secondary:** Policy makers, maritime regulators, and ship operators.

  - **Tertiary:** Data science team producing actionable insights.

- **Data Sources**

  - Kaggle Titanic dataset: https://www.kaggle.com/competitions/titanic/data