📑 Exploratory Data Analysis Report – Titanic Dataset

1. Introduction

The Titanic dataset provides passenger details such as age, gender, class, fare, and survival status.
The goal of this analysis is to uncover meaningful insights, identify trends, and highlight factors that influenced survival.

---

2. Dataset Overview

- Total rows: 891
- Total columns: 12
- Key features: Passenger Class, Gender, Age, Fare, Embarkation Point, Survival

---

3. Methodology

We applied Exploratory Data Analysis (EDA) techniques using Python libraries:

- **Pandas** for data cleaning and summaries
- **Matplotlib & Seaborn** for visualization
- **Statistical exploration** to identify relationships and correlations

---

4. Key Findings & Visualizations

a. Passenger Demographics

- Age distribution shows most passengers were between __ and __ years.
- A significant proportion of passengers traveled in **3rd class**.

b. Gender & Survival

- Female passengers had a much higher survival rate compared to males.

c. Class & Survival

- 1st class passengers had higher survival chances than 2nd and 3rd class.
- 3rd class showed the lowest survival rate.

d. Correlations

- Strong correlation between **fare** and **class**.

- Survival was influenced by **gender** and **class**.

(Insert charts/plots here as images in the PDF, e.g., bar plots, heatmaps, etc.)

---

5. Summary of Insights

- **Women and children** had higher chances of survival.
- **Wealthier passengers (1st class)** were more likely to survive.
- The dataset highlights social and economic inequalities present during the Titanic disaster.

---

6. Conclusion

This analysis demonstrates how **EDA** can uncover patterns and relationships within data. The Titanic dataset provides a classic example of how demographic and socio-economic factors influenced survival outcomes.