Titanic Dataset Analysis Report

Objective

To explore the Titanic dataset and identify patterns, trends, and relationships among features that contributed to passenger survival.

Dataset Overview

The dataset includes details such as:
- Survived
- Pclass
- Name, Sex, Age
- SibSp, Parch
- Ticket, Fare, Cabin, Embarked

Tools Used

Python, pandas, seaborn, matplotlib

Findings from Visualizations

1. Heatmap:
   - Fare and Survived show a notable positive correlation.

2. Pairplot:
   - Survivors cluster in higher fare and lower age range.

3. Histogram (Age & Fare):
   - Most passengers were 20-40 years old; few paid high fares.

4. Boxplot (Age vs Pclass):
   - 1st class passengers are generally older.

5. Countplot (Sex, Pclass, Embarked vs Survived):
   - Females and 1st class passengers had higher survival rates.

6. Violinplot (Fare by Class & Survival):
   - Higher fares linked to better survival chances.

7. Scatterplot (Age vs Fare):
   - Survivors clustered among young and high-paying passengers.

Summary of Key Insights

- Females had higher survival rates.
- 1st class passengers were more likely to survive.
- Children and younger people had better survival chances.
- Higher fare = higher survival.
- Passengers from Cherbourg had a higher survival rate.