

Case Study: Analyzing the Titanic Dataset with NumPy, Pandas, Matplotlib, and Seaborn

Objective:

The goal of this case study is to analyze the Titanic dataset using popular Python libraries such as NumPy, Pandas, Matplotlib, and Seaborn. We aim to explore and visualize various aspects of the dataset to gain insights into the demographics and factors influencing survival rates among Titanic passengers.

Dataset:

The Titanic dataset contains information about passengers on board the Titanic, including details such as age, gender, ticket class, and survival status.

Steps:

1. Data Loading and Exploration:
 - Load the titanic dataset using Pandas.
 - Explore the basic statistics, data types, and structure of the dataset.
2. Data Preprocessing:
 - Handle missing values, if any.
 - Check for duplicate entries.
3. Data Visualization:
 - Use Matplotlib and Seaborn to visualize:
 - Survival Rate
 - Age Distribution
 - Survival Rate by Gender
 - Survival Rate by Class