Titanic Survival Prediction Report

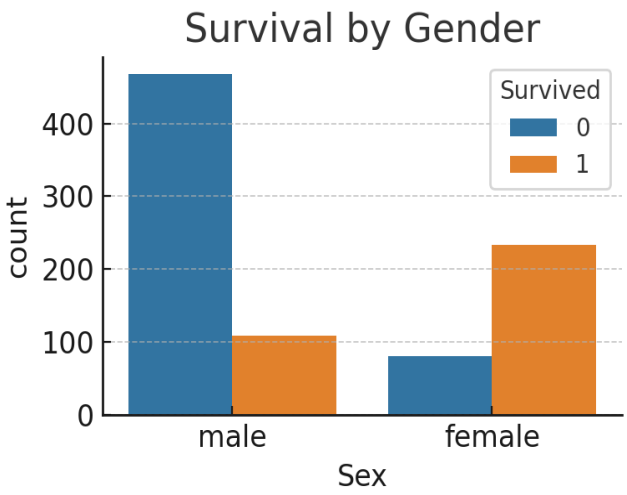
This project applies Machine Learning techniques to predict passenger survival on the Titanic dataset. The task is a binary classification problem where the target variable is Survived (0 = died, 1 = survived).

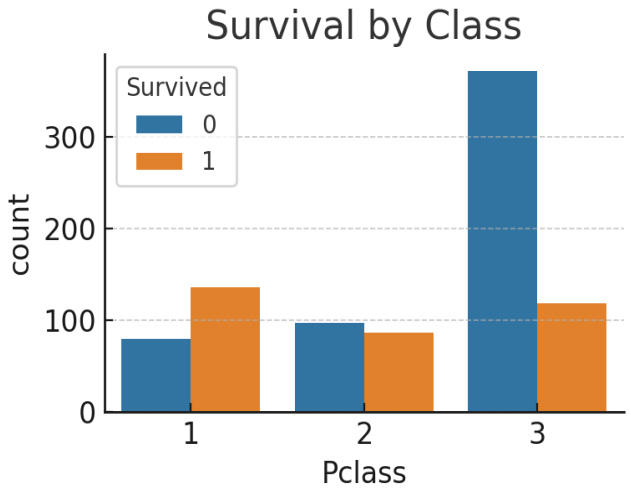
Dataset Overview
- Total passengers: 891
- Target variable: Survived
- Features: Pclass, Sex, Age, SibSp, Parch, Fare, Embarked, FamilySize, IsAlone
- Missing values: Age, Embarked, Cabin (dropped).

Methodology
- Preprocessing: dropped irrelevant columns, filled missing values, encoded categorical variables.
- Feature Engineering: FamilySize, IsAlone.
- Models: Logistic Regression and Random Forest Classifier.

Model	Accuracy
Random Forest	81.6%
Logistic Regression	79% (approx)

Visual Insights





Conclusion
Random Forest achieved higher accuracy (~81.6%) compared to Logistic Regression (~79%). Important survival factors include gender, passenger class, and age. Future improvements could involve hyperparameter tuning and testing gradient boosting methods.