Task 5 – Exploratory Data Analysis (EDA) Report

This report summarizes the findings from the Exploratory Data Analysis (EDA) performed on the Titanic Dataset.

1. Dataset Overview:
The dataset includes passenger details such as Name, Age, Sex, Ticket, Fare, Class, Embarkation point, and Survival status.

2. Key Observations:
- Females had a significantly higher survival rate than males.
- Passengers in 1st class survived more compared to 2nd and 3rd class.
- Children had better survival chances than adults.
- Higher fare values were associated with higher survival probability.- Missing values existed in Age, Cabin, and Embarked columns.

3. Data Cleaning:
- Age missing values were filled with the median.
- Embarked missing values were filled with the mode.
- Cabin column was dropped due to excessive missing values.

4. Feature Engineering:
- Extracted Title from passenger names.
- Created Age Groups to analyze survival across age ranges.

5. Visual Insights:
Charts included distribution of age, fare, gender counts, class counts, survival comparisons, and a heatmap of correlations.

Conclusion:
The analysis reveals clear survival patterns linked to gender, class, fare, and age, providing strong foundations for predictive modeling.