**Dataset Description:**

You are provided with a dataset containing information about passengers aboard the Titanic. The dataset includes the following columns:

1. PassengerId: Unique identifier for each passenger.
2. Survived: Whether the passenger survived (0 = No, 1 = Yes).
3. Pclass: Ticket class (1 = 1st, 2 = 2nd, 3 = 3rd).
4. Name: Passenger's name.
5. Sex: Passenger's gender.
6. Age: Passenger's age.
7. SibSp: Number of siblings/spouses aboard.
8. Parch: Number of parents/children aboard.
9. Ticket: Ticket number.
10. Fare: Passenger fare.
11. Cabin: Cabin number.
12. Embarked: Port of embarkation (C = Cherbourg, Q = Queenstown, S = Southampton).

**Tasks:**

**Data Cleaning:**

Handle missing values in the dataset by performing appropriate imputation techniques. You can consider imputing missing values for 'Age', 'Fare', and 'Embarked' columns.

**Feature Engineering:**

* Family Size:
  + Create a new feature called 'FamilySize' by adding the 'SibSp' (number of siblings/spouses) and 'Parch' (number of parents/children) columns. This feature represents the total number of family members aboard for each passenger.
* Title Extraction:
  + Extract the titles (e.g., Mr., Mrs., Miss, etc.) from the 'Name' column for each passenger.
  + Create a new feature called 'Title' containing the extracted titles.
* Age Group:
  + Group passengers into different age groups (e.g., child, adult, senior) based on their age.
  + Create a new feature called 'AgeGroup' to represent the age group of each passenger.
* Fare per Person:
  + Calculate the fare per person by dividing the 'Fare' column by the 'FamilySize' for each passenger.
  + Create a new feature called 'FarePerPerson' to represent the fare per person.
* Label Encoding:
  + Encode categorical features such as 'Sex' and 'Embarked' using label encoding technique to convert them into numerical format suitable for machine learning algorithms.