Task Statement

# Objective:

In this task, you are required to choose any publicly available dataset of your choice and apply a classification model to solve the problem. You will also perform the necessary preprocessing steps to prepare the data for model training and evaluation.

# Instructions:

## 1. Dataset Selection:

Choose any dataset from sources like Kaggle, UCI Machine Learning Repository, or any other dataset of your choice. The dataset should be suitable for a classification problem (e.g., binary or multi-class classification).

## 2. Data Preprocessing:

Load the dataset and perform the necessary preprocessing steps, including:  
- Handling missing values (e.g., imputation or removal).  
- Encoding categorical variables (if any).  
- Splitting the data into training and testing sets (e.g., 80% train, 20% test).

## 3. Model Selection:

Choose a classification model to apply to the data (e.g., Logistic Regression, Decision Trees, Random Forests, K-Nearest Neighbors, etc.). Train the model on the training dataset and evaluate its performance on the test dataset.

## 4. Model Evaluation:

Evaluate the model’s performance using appropriate evaluation metrics such as accuracy, precision, recall, F1-score, and confusion matrix. Interpret the results of the evaluation and explain the model's strengths and weaknesses.