Tasks to be Performed:

1. Data Acquisition

- **1.1** Download the dataset.
- **1.2** Convert the dataset into a DataFrame using appropriate code.
- **1.3** Display the first and last five records to confirm successful loading of the data.
- **1.4** Use functions to display:
    - Column headings
    - Statistical information
    - Description of the data
    - Statistical summary
- **1.5** Write your observations:
    - Number of features and examples in the dataset.
    - Types of data attributes.

2. Data Preparation

- **2.1** Check for:
    - Duplicate data
    - Missing data
    - Data inconsistencies
    - Outliers (using boxplots)
- **2.2** Apply techniques to:
    - Remove duplicate data
    - Impute or remove missing data
    - Resolve data inconsistencies
    - Remove outliers
- **2.3** Encode categorical data using one of the following techniques:
    - One-hot encoding
    - Label encoding
- **2.4** Report your observations:

- Justify methods used for handling duplicates, missing data, inconsistencies, and outliers (if any).
- If none of the above issues are present, mention this explicitly.
- Specify the encoding method used for categorical features.

3. Data Exploration using Visualizations

- **3.1** Create scatter plots for each feature against the target variable.
- **3.2** Perform EDA using two additional visualizations (e.g., pair plot, heat map, correlation plot, regression plot).
    - Provide proper justification for why the chosen plots are helpful in identifying optimal attributes.
    - Marks will only be awarded if proper justifications are provided.

Expectations

- The assignment should reflect your understanding of the entire data preparation process.
- All code must be well-documented with appropriate comments. It should follow the naming and chapter section naming as mentioned in the assignment description.
- Observations and justifications should be clear and concise, written in plain English.
- Ensure the notebook and PDF are neat, structured, and easy to follow.