In this assignment, you will choose from Kaggle and perform data preprocessing techniques to clean and prepare them for machine learning models. The goal is to handle missing values, encode categorical features, scale numerical data, and split the dataset into training and testing sets.

* Visit Kaggle and select of your choice.
* The datasets should include and some for a complete preprocessing exercise.

Perform the following preprocessing steps on each dataset:  
  
**1-Handling Missing Values:**

* Identify missing values in the dataset.
* Use appropriate techniques such as:
* Mean/Median/Mode imputation for numerical features.
* Forward-fill or backward-fill if applicable.
* Dropping rows/columns (if necessary).

**2-Encoding Categorical Variables:**

* Identify categorical columns.
* Apply one of the following:
* (for ordinal categories).
* (for nominal categories).

**3-Feature Scaling:**

* Normalize/standardize numerical features.
* Use techniques such as:
* (for features where distribution is not normal).
* (for normally distributed features).

**4-Splitting the Dataset**  
Your submission must include:  
**Each dataset should have a containing:**

* Data loading and exploration.
* Preprocessing steps with explanations.
* Train-test split code.

**Write a detailed explanation of the preprocessing steps.**

* Why each method was chosen.
* Before-and-after comparisons.
* Any challenges faced.

**Submit the**

* **handwritten notes in class room**
* **3python notebooks in google classroom.**