

# Laptop Dataset – Data Exploration Report

## 1. Importing Libraries

Pandas and NumPy libraries are imported. Pandas helps in data loading, cleaning and analysis, while NumPy supports numerical operations.

## 2. Loading the Dataset

The dataset 'laptop\_data.csv' is loaded using `pandas.read_csv()`. The code tries an alternative encoding to prevent errors when special characters are present.

## 3. Displaying Dataset Samples

`head()` shows the first 5 rows, while `tail()` displays the last 5 rows. This helps understand the dataset's structure and sample entries.

## 4. Dataset Dimensions

`shape()` reveals the total number of rows and columns, giving a clear idea of dataset size.

## 5. Checking Missing Values

`isnull().sum()` is used to detect missing values in each column before performing cleaning.

## 6. Handling Missing Values

Missing values are filled based on column type: Mode for text columns and Mean for numerical columns.

## 7. Verifying Data Types

`dtypes` displays each column's datatype. This helps decide further preprocessing steps like encoding or scaling.