

## **Definition of EDA :**

Exploratory Data Analysis (EDA) is an approach to analyzing datasets to summarize their main characteristics, often with visual methods. It helps to understand the structure, patterns, relationships, and potential issues within the data, such as missing values or outliers, before proceeding with more advanced analyses or machine learning.

## **Steps in EDA :**

### **1. Importing Libraries:**

To begin, we need to import necessary Python libraries like pandas, numpy, matplotlib, and seaborn for data manipulation and visualization.

### **2. Reading the Dataset:**

The first step is to load the dataset into a pandas DataFrame using the `read_csv()` function for CSV files or other relevant functions for different file formats.

### **3. Analysing the Dataset:**

Once the data is loaded, inspect it using functions like `head()` (to view the first few rows), `info()` (to view data types and non-null values), and `describe()` (to get summary statistics for numerical columns).

### **4. Checking for Missing Values:**

It's crucial to check for missing or null values in the dataset, as they can affect the analysis. Use `isnull()` to identify missing data, and `sum()` to count them.

### **5. Checking for Duplicates:**

Duplicates can skew the analysis, so it's important to check and remove them if necessary using the `duplicated()` method.