

Lab 1

Datasets

1. Electric Vehicle population Dataset

**problem Statement:** The dataset contains information about Battery Electric Vehicles and plug-in Hybrid Electric Vehicles registered in Washington state. It includes details like vehicle type, make, model, electric range and location. The dataset has 223,995 rows and 17 columns with missing values. possible problem statements include predicting EV adoption based on vehicle features and geographic location, analyzing regional factors influencing EV popularity

Number of rows = 223995

Number of columns = 17

Columns

- |  |                        |
|--|------------------------|
| (1) VIN                                      | (16) Electric Utility  |
| (2) county                                   | (17) 2020 Census Tract |
| (3) City                                     |                        |
| (4) State                                    |                        |
| (5) postal Code                              |                        |
| (6) Model Year                               |                        |
| (7) Make                                     |                        |
| (8) Model                                    |                        |
| (9) Electric Vehicle Type                    |                        |
| (10) Clean Alternative fuel Vehicle Eligible |                        |
| (11) Electric Range                          |                        |
| (12) Base MSRP                               |                        |
| (13) Legislative District                    |                        |
| (14) DOL Vehicle ID                          |                        |
| (15) Vehicle location                        |                        |



## 2 Laptop price Dataset

problem statement: This dataset contains 11769 records of laptops with various hardware specifications and prices. It is designed for predictive modeling, price estimation and exploratory data analysis. The dataset includes real-world values to reflect the factors that influence laptop prices. This dataset can be used for:   
1. Building machine learning models to predict laptop prices based on specification,   
2. Market Analysis &   
3. Feature importance Study.

number of rows = 11769

number of columns = 11

### Columns

1. Brand
2. processor
3. RAM
4. Storage
5. GPU
6. Screen Size
7. Resolution
8. Battery life
9. weight
10. operating System
11. price.

## 3 Indian Bike Sales Dataset

**Problem Statement:** This dataset contains records of motorcycle sales across various Indian states, covering top brands like Honda, Royal Enfield, TVS, Yamaha, Hero, Bajaj, KTM and Kawasaki. The dataset includes key attributes such as average daily distance traveled, engine capacity, fuel type etc. it provides insights into bike sales trends, market demand, and resale value across different city tiers.

Number of rows = 10001  
Number of columns = 15

### Columns

- (1) State
- (2) Avg Daily Distance
- (3) Brand
- (4) Model
- (5) Price
- (6) Year of Manufacture
- (7) Engine Capacity
- (8) Fuel Type
- (9) Mileage
- (10) Owner Typ
- (11) Registration
- (12) Insurance
- (13) Seller Type
- (14) Resale price
- (15) City Tier



#### ④ Road Accident Survival Dataset

##### Problem Statement:

This dataset contains detailed records of simulated road accident data, focusing on factors influencing survival outcomes. The dataset includes demographic, behavioral, and situational attributes, providing valuable insight into how various factors impact the survival probability during road accidents.

number of rows = 201

number of columns = 6

##### columns

- ① Age
- ② Gender
- ③ Speed-of-impact
- ④ Helmet-Used
- ⑤ Seatbelt-Used
- ⑥ Survived

#### ⑤ Phone Usage in India

##### Problem Statement:

The dataset represents simulated phone usage data for Indian users. It contains 17,886 rows and 16 columns, each row representing an individual's phone usage details. The data reflects various aspects of mobile phone behaviour including demographics, phone brand and app usage patterns.



number of rows = 14687

number of columns = 16

columns

(1) User ID

(2) Age

(3) Gender

(4) Location

(5) phone Brand

(6) OS

(7) Screen Time

(8) Data Usage

(9) calls Duration

(10) Number of Apps Install

(11) Social Media Time

(12) E-commerce Spend

(13) Streaming Time

(14) Gaming Time

(15) Monthly Precharge

(16) primary usage

3/3/2023

$$\frac{\sum x_i^2}{n} - \left( \frac{\sum x_i}{n} \right)^2 = 18$$

$$\frac{14687 \times 18}{16} - \left( \frac{14687}{16} \right)^2 = 18$$