Predicting Car Price Based on age using simple linear Regression

**Objective**

To predict the price of a car using its age (in years), helping buyers and sellers estimate value using data analysis.

We use simple linear regression to model the relationship between car age and its price.

**Dataset Description**

The dataset was taken from a real-world car listing platform. It contains various details about used cars including:

* Price
* Year of manufacturing
* Kilometers driven
* Fuel type

For this project, we focus only of the year to calculate age and price columns.

**Data Cleaning and Preparation**

We cleaned the dataset by:

* Removing rows with missing values or “Ask for Price”
* Removing non-numeric values in the price and kms\_driven columns
* Calculating Car Age as: 2025 – Year
* Keeping only: Car\_Age and Price columns for analysis

**Data Visualization**

We used a **scatter plot** to visualize how **car price** decreases as the car gets older.

A **negative linear trend** was clearly visible-confirming linear trend was clearly visible confirming the usefulness of linear regression.

**Model Building**

We used Simple Linear Regression from sklearn.

* X=Car\_Age
* Y=Price

Trend the model with:

Python

Model=Linear Regression()

Model.fit(X, Y)

Regression Equation

Price=m×Car\_Age +c

Where”

* m is the slope price decrease per year
* c is the intercept price of a new car(age=0)

Example:

Price=-42150×Age+545000

**Prediction Result**

We predicted the price of a brand-new car (age=0):

Approximately 5.45 lakh

**Conclusion**

* Car Age is a strong predictor of used car price.
* Linear regression fits this problem well.
* We learned how to clean data, visualize it, apply regression, and make predictions.
* This model can help car sellers/buyers make **data-based decisions.**