3)

In the given dataset , we are provided with name , seller , offer type , price , abtest , vehicle type , year of registration , gearbox , powerps , model , kilometer , fuelType , brand , not repaired damaged , nr of pictures , postal code .

Among these , a price of a used car can be analysed with the help of a few variables

Those variables are **name** , **vehicle type** , **year of registration , model** and **kilometer**

These are the **independent variables** .

The **price** which has to be analysed is the **dependent variable** on the independent variables mentioned above .

Name of the car : is considered because every car will have different feautres and facilities available in it , based on those , the price at which it can be sold varries.

Vehicle type : similarly vehicle type is also used for identifying the merits and drawbacks of the vehicle .

Year of registration : year of registration helps us derive the age of the car by calculating the difference and as we know the age of the car is inversely proportional to the selling price . Therefore , it is very essential to take it into consideration.

Model : model also helps us in knowing the details of the car such as features and age as mentioned above.

Kilometer : The number of kilometers a car has ran helps in predicting the health of the car . It is inversely proportional to the price .

**Limitations**

Year of registration and kilometers are equally important . There are chances of this equal importance creating a conflict , because if the age of the car is high and the kilometer value is low , or the vice versa , there are chances of the model getting into an ambiguity without being able to figure out which feature has to be treated more importantly .

**Model**

According to my appraoch , I have to consider multiple independent variables for analysis .

Multiple of Polynomial regression model is suitable .

Regression model determines the relation between independent variables and a dependent variable .

Let x1 , x2,x3,x4,x5 are  name , vehicle type , year of registration , model and kilometer respectively .

Y is the selling price of the car . Y can be modeled by different types of relation

**multiple regression :  y = a0 + a1*x1 + a2*x2 + a3*x3 + a4*x4 + a5*x5**

**polynomial regression : y = a0 + a1*x1 + a2*x2^2 + a3*x3^3 + a4*x4^4 + a5*x5^5**

Either of these 2 models can be used for analysing the selling price of the used car.