Corolla Analysis

Used cars are far more profitable for a dealer than new cars. Because of this, dealers are often anxious to offer new-car shoppers "trade-ins" where they can trade their old car and deduct the trade-in amount from the price of the new car. According to the National Automobile Dealers Association (NADA), 61% of a dealer's used car inventory comes from trade-ins. Used car sales are a "blind negotiation" because the buyer doesn't know what the dealer paid for the car on a trade-in. This results in a major advantage to the dealer because they can typically sell it for much higher than they paid for it on a trade-in.

The risk dealers take on trade-ins is the possibility that the car won't resell for a profit. Because of this, dealers need to know the price at which a used car will sell in the future at the time of trade-in. In this way, the dealer can offer a trade-in amount that will result in a reasonable profit for the company. The issue is that not all used cars are the same. Used cars vary in color, number of miles driven, number of doors, etc., all of which will impact the final resale value of the car.

The `Cars` dataset is a collection of information on used cars at one particular dealership and includes the following variables:

Variable	Description
Id	Record
Model	Model Description
Price	Offer Price in Dollars
Age_08_04	Age in months as in August 2004
Mfg_Year	Manufacturing Year
Miles	Accumulated miles on odometer
Fuel_Type	Fuel Type (Petrol, Diesel, CNG)
HP	Horse Power
Color	Color (Blue, Red, Grey, Silver, Black, etc.)
Automatic	Yes= 1, No= 0
CC	Cylinder Volume in cubic centimeters
Doors	Number of doors
Cylinders	Number of cylinders
Weight	Weight in Kilograms
Mfr_Guarantee	Within Manufacturer's Guaranteeperiod (Yes= 1,No= 0)
ABS	Anti-Lock Brake System (Yes= 1, No= 0)
Airbag_1	Driver_Airbag (Yes= 1, No= 0)
Airbag_2	Passenger Airbag (Yes= 1, No= 0)
Airco	Airconditioning (Yes= 1, No= 0)
Automatic_airco	Automatic Airconditioning (Yes= 1, No= 0)
Boardcomputer	Board computer (Yes= 1, No= 0)
CD_Player	CD Player (Yes= 1, No= 0)
Powered_Windows	Powered Windows (Yes= 1, No= 0)
Power_Steering	Powered Steering (Yes= 1, No= 0)
Radio	Yes= 1, No= 0