

Dataset shape before operations: (5847, 17)

1) SELECT -> shape: (5847, 11)

Seats	New_Price	Price	Name	Location	Year	Age	Kilometers_Driven	Mileage	Engine	Power
5.0	4.78	12.50	Hyundai Creta 1.6 CRDi SX Option	Pune	2015	10	41000	19.67	1582.0	126.20
5.0	8.61	4.50	Honda Jazz V	Chennai	2011	14	46000	13.00	1199.0	88.70
7.0	4.78	6.00	Maruti Ertiga VDI	Chennai	2012	13	87000	20.77	1248.0	88.76
5.0	4.78	17.74	Audi A4 New 2.0 TDI Multitronic	Coimbatore	2013	12	40670	15.20	1968.0	140.80
5.0	4.78	3.50	Nissan Micra Diesel XV	Jaipur	2013	12	86999	23.08	1461.0	63.10
8.0	21.00	17.50	Toyota Innova Crysta 2.8 GX AT 8S	Mumbai	2016	9	36000	11.36	2755.0	171.50
5.0	4.78	5.20	Volkswagen Vento Diesel Comfortline	Pune	2013	12	64430	20.54	1598.0	103.60
5.0	4.78	1.95	Tata Indica Vista Quadrajet LS	Chennai	2012	13	65932	22.30	1248.0	74.00
5.0	10.65	9.95	Maruti Ciaz Zeta	Kochi	2018	7	25692	21.56	1462.0	103.25
5.0	4.78	4.49	Honda City 1.5 V AT Sunroof	Kolkata	2012	13	60000	16.80	1497.0	116.30

2) FILTER (Delhi & Price > 10) -> shape: (157, 17)

Owner_Type	Mileage	Engine	Power	Seats	New_Price	Price	Fuel_Type_Electric	Fuel_Type_Petrol
First	12.70	2179.0	187.70	5.0	4.78	27.00	False	False
False	11	11						
First	13.50	2477.0	175.56	7.0	32.01	15.00	False	False
True	11	11						
First	11.74	1796.0	186.00	5.0	4.78	26.70	False	True
False	10	10						
Second	18.53	1968.0	187.74	5.0	4.78	29.50	False	False
False	11	11						
Second	16.73	1995.0	218.00	5.0	4.78	13.90	False	False
False	14	14						
First	13.00	2982.0	168.50	7.0	4.78	16.50	False	False
True	11	11						
First	14.80	1595.0	120.70	5.0	4.78	11.25	False	True
False	12	12						
First	15.73	1968.0	174.33	5.0	4.78	19.90	False	False
False	10	10						
First	11.80	2967.0	246.70	5.0	4.78	45.00	False	False
False	13	13						
First	17.90	2143.0	136.00	5.0	4.78	20.26	False	False

False 10 10

3) RENAME New\_Price -> New\_Car\_Price\_Lakh -> shape: (5847, 17)

Unnamed: 0	Name	Location	Year	Kilometers_Driven	Owner_Type		
Mileage	Engine	Power	Seats	New_Car_Price_Lakh	Price	Fuel_Type_Electric	Fuel_Type_Petrol
Transmission_Manual	Age	Car_Age					
1	Hyundai Creta 1.6 CRDi SX Option	Pune	2015	41000	First		
19.67	1582.0	126.20	5.0	4.78	12.50	False	False
True	10	10					
2	Honda Jazz V	Chennai	2011	46000	First		
13.00	1199.0	88.70	5.0	8.61	4.50	False	True
True	14	14					
3	Maruti Ertiga VDI	Chennai	2012	87000	First		
20.77	1248.0	88.76	7.0	4.78	6.00	False	False
True	13	13					
4	Audi A4 New 2.0 TDI Multitronic	Coimbatore	2013	40670	Second		
15.20	1968.0	140.80	5.0	4.78	17.74	False	False
False	12	12					
6	Nissan Micra Diesel XV	Jaipur	2013	86999	First		
23.08	1461.0	63.10	5.0	4.78	3.50	False	False
True	12	12					
7	Toyota Innova Crysta 2.8 GX AT 8S	Mumbai	2016	36000	First		
11.36	2755.0	171.50	8.0	21.00	17.50	False	False
False	9	9					
8	Volkswagen Vento Diesel Comfortline	Pune	2013	64430	First		
20.54	1598.0	103.60	5.0	4.78	5.20	False	False
True	12	12					
9	Tata Indica Vista Quadrajet LS	Chennai	2012	65932	Second		
22.30	1248.0	74.00	5.0	4.78	1.95	False	False
True	13	13					
10	Maruti Ciaz Zeta	Kochi	2018	25692	First		
21.56	1462.0	103.25	5.0	10.65	9.95	False	True
True	7	7					
11	Honda City 1.5 V AT Sunroof	Kolkata	2012	60000	First		
16.80	1497.0	116.30	5.0	4.78	4.49	False	True
False	13	13					

4) MUTATE (Price\_per\_1000km added) -> shape: (5847, 18)

Price	Kilometers_Driven	Price_per_1000km
12.50	41000	30.487805
4.50	46000	9.782609
6.00	87000	6.896552
17.74	40670	43.619375
3.50	86999	4.023035
17.50	36000	48.611111
5.20	64430	8.070774
1.95	65932	2.957593
9.95	25692	38.728009
4.49	60000	7.483333

5) ARRANGE (sorted by Price desc) -> shape: (5847, 18)

Name	Location	Price
Land Rover Range Rover 3.0 Diesel LWB Vogue	Hyderabad	160.00
Lamborghini Gallardo Coupe	Delhi	120.00
Jaguar F Type 5.0 V8 S	Hyderabad	100.00
Land Rover Range Rover Sport SE	Kochi	97.07
BMW 7 Series 740Li	Coimbatore	93.67
BMW 7 Series 740Li	Bangalore	93.00
Mercedes-Benz SLK-Class 55 AMG	Bangalore	90.00

BMW X6 xDrive 40d M Sport	Ahmedabad	85.00
Mercedes-Benz SLC 43 AMG	Coimbatore	83.96
Mercedes-Benz GLS 350d Grand Edition	Delhi	79.00

6) GROUP BY Owner\_Type -> shape: (4, 4)

	Owner_Type	mean_price	count	avg_mileage
	First	10.105076	4811	18.454496
Fourth & Above		3.415000	8	13.862500
	Second	7.839719	925	16.914411
	Third	5.348058	103	15.853398