

CAR RESALE VALUE PREDICTION

<u>Team id</u>	<u>PNT2022TMID51364</u>
<u>Date</u>	<u>4 November 2022</u>

Data Cleaning and Pre-Processing

```
df = df.dropna()
df = df.drop_duplicates()

# Removing Unnecessary Columns
df = df[df["owner"] != "Test Drive Car"]

df.reset_index(drop=True, inplace=True)

df.head()
```

	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power	torque	seats
0	Maruti Swift Dzire VDI	2014	450000	145500	Diesel	Individual	Manual	First Owner	23.4 kmpl	1248 CC	74 bhp	190Nm@ 2000rpm	5.0
1	Skoda Rapid 1.5 TDI Ambition	2014	370000	120000	Diesel	Individual	Manual	Second Owner	21.14 kmpl	1498 CC	103.52 bhp	250Nm@ 1500-2500rpm	5.0
2	Honda City 2017-2020 EXi	2006	158000	140000	Petrol	Individual	Manual	Third Owner	17.7 kmpl	1497 CC	78 bhp	12.7@ 2,700(kgm@ rpm)	5.0
3	Hyundai i20 Sportz Diesel	2010	225000	127000	Diesel	Individual	Manual	First Owner	23.0 kmpl	1396 CC	90 bhp	22.4 kgm at 1750-2750rpm	5.0
4	Maruti Swift VXI BSIII	2007	130000	120000	Petrol	Individual	Manual	First Owner	16.1 kmpl	1298 CC	88.2 bhp	11.5@ 4,500(kgm@ rpm)	5.0

```
df.isna().sum()
```

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```
name          0
year          0
selling_price 0
km_driven     0
fuel          0
seller_type   0
transmission  0
owner         0
mileage       0
engine        0
max_power     0
torque        0
seats         0
dtype: int64
```

```
df.shape
```

```
(6712, 13)
```

```
df.info
```

```
<bound method DataFrame.info of
0      Maruti Swift Dzire VDI  2014    450000    145500
1      Skoda Rapid 1.5 TDI Ambition  2014    370000    120000
2      Honda City 2017-2020 EXi  2006    158000    140000
3      Hyundai i20 Sportz Diesel  2010    225000    127000
4      Maruti Swift VXi BSIII  2007    130000    120000
...
6707  Maruti Wagon R VXi BS IV with ABS  2013    260000    50000
6708      Hyundai i20 Magna 1.4 CRDi  2014    475000    80000
6709      Hyundai i20 Magna  2013    320000    110000
6710      Hyundai Verna CRDi SX  2007    135000    119000
6711      Maruti Swift Dzire ZDi  2009    382000    120000

   fuel seller_type transmission   owner  mileage \
0  Diesel  Individual    Manual  First Owner  23.4 kmpl
1  Diesel  Individual    Manual  Second Owner  21.14 kmpl
2  Petrol  Individual    Manual  Third Owner  17.7 kmpl
3  Diesel  Individual    Manual  First Owner  23.0 kmpl
4  Petrol  Individual    Manual  First Owner  16.1 kmpl
...
6707  Petrol  Individual    Manual  Second Owner  18.9 kmpl
6708  Diesel  Individual    Manual  Second Owner  22.54 kmpl
6709  Petrol  Individual    Manual  First Owner  18.5 kmpl
6710  Diesel  Individual    Manual  Fourth & Above Owner  16.8 kmpl
6711  Diesel  Individual    Manual  First Owner  19.3 kmpl
```

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```

      engine  max_power      torque  seats
0    1248 CC      74 bhp    190Nm@ 2000rpm  5.0
1    1498 CC    103.52 bhp    250Nm@ 1500-2500rpm  5.0
2    1497 CC      78 bhp    12.7@ 2,700(kgm@ rpm)  5.0
3    1396 CC      90 bhp    22.4 kgm at 1750-2750rpm  5.0
4    1298 CC     88.2 bhp    11.5@ 4,500(kgm@ rpm)  5.0
...      ...      ...      ...      ...
6707  998 CC      67.1 bhp      90Nm@ 3500rpm  5.0
6708  1396 CC     88.73 bhp    219.7Nm@ 1500-2750rpm  5.0
6709  1197 CC     82.85 bhp    113.7Nm@ 4000rpm  5.0
6710  1493 CC     110 bhp    24@ 1,900-2,750(kgm@ rpm)  5.0
6711  1248 CC      73.9 bhp    190Nm@ 2000rpm  5.0

```

[6712 rows x 13 columns]>

```

print(df["fuel"].value_counts())
print(df["seller_type"].value_counts())
print(df["transmission"].value_counts())
print(df["owner"].value_counts())

```

```

Diesel      3657
Petrol      2969
CNG         51
LPG         35
Name: fuel, dtype: int64
Individual   6024
Dealer       661
Trustmark Dealer    27
Name: seller_type, dtype: int64
Manual       6141
Automatic     571
Name: transmission, dtype: int64
First Owner   4176
Second Owner  1888
Third Owner   493
Fourth & Above Owner  155
Name: owner, dtype: int64

```

```

df['company']=df['name'].str.split().str.slice(start=0,stop=1).str.join(
(' '))
df.head()

```

	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine	max_power	torque	seats	company
0	Maruti Swift Dzire VDI	2014	450000	145500	Diesel	Individual	Manual	First Owner	23.4 kmpl	1248 CC	74 bhp	190Nm@ 2000rpm	5.0	Maruti
1	Skoda Rapid 1.5 TDI Ambition	2014	370000	120000	Diesel	Individual	Manual	Second Owner	21.14 kmpl	1498 CC	103.52 bhp	250Nm@ 1500-2500rpm	5.0	Skoda
2	Honda City 2017-2020 EXi	2006	158000	140000	Petrol	Individual	Manual	Third Owner	17.7 kmpl	1497 CC	78 bhp	12.7@ 2,700(kgm@ rpm)	5.0	Honda
3	Hyundai i20 Sportz Diesel	2010	225000	127000	Diesel	Individual	Manual	First Owner	23.0 kmpl	1396 CC	90 bhp	22.4 kgm at 1750-2750rpm	5.0	Hyundai
4	Maruti Swift VXi BSIII	2007	130000	120000	Petrol	Individual	Manual	First Owner	16.1 kmpl	1298 CC	88.2 bhp	11.5@ 4,500(kgm@ rpm)	5.0	Maruti

```
df.to_csv('cleaned_car_details.csv')
```