

```
In [1]: import pandas as pd
```

## IMPORT AND PRINT DATA SET

```
In [2]: data = pd.read_csv("vehicle.csv")
```

```
Out[2]:
```

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon
0	1.0	lounge	51.0	882.0	25000.0	1.0	44.907242	8.611559
1	2.0	pop	51.0	1186.0	32500.0	1.0	45.666359	12.241889
2	3.0	sport	74.0	4658.0	142228.0	1.0	45.503300	11.417
3	4.0	lounge	51.0	2739.0	160000.0	1.0	40.633171	17.634609
4	5.0	pop	73.0	3074.0	106880.0	1.0	41.903221	12.495650
...	...	...	...	...	...	...	...	...
1544	NaN	NaN	NaN	NaN	NaN	NaN	NaN	len
1545	NaN	NaN	NaN	NaN	NaN	NaN	NaN	con
1546	NaN	NaN	NaN	NaN	NaN	NaN	NaN	Null val
1547	NaN	NaN	NaN	NaN	NaN	NaN	NaN	f
1548	NaN	NaN	NaN	NaN	NaN	NaN	NaN	sea

## SHAPE

```
In [3]: data.shape
```

```
Out[3]: (1549, 11)
```

## SIZE

```
In [4]: data.size
```

```
Out[4]: 17039
```

## PRINT FIRST 10 VALUES

```
In [5]: data.head(10)
```

```
Out[5]:
```

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon
0	1.0	lounge	51.0	882.0	25000.0	1.0	44.907242	8.611559868
1	2.0	pop	51.0	1186.0	32500.0	1.0	45.666359	12.24188995
2	3.0	sport	74.0	4658.0	142228.0	1.0	45.503300	11.41784
3	4.0	lounge	51.0	2739.0	160000.0	1.0	40.633171	17.63460922
4	5.0	pop	73.0	3074.0	106880.0	1.0	41.903221	12.49565029
5	6.0	pop	74.0	3623.0	70225.0	1.0	45.000702	7.68227005
6	7.0	lounge	51.0	731.0	11600.0	1.0	44.907242	8.611559868
7	8.0	lounge	51.0	1521.0	49076.0	1.0	41.903221	12.49565029
8	9.0	sport	73.0	4049.0	76000.0	1.0	45.548000	11.54946995
9	10.0	sport	51.0	3653.0	89000.0	1.0	45.438301	10.99170017

## PRINT LAST 7 VALUES

```
In [6]: data.tail(7)
```

```
Out[6]:
```

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon	price	Ui
1544	NaN	NaN	NaN	NaN	NaN	NaN	NaN	length	5	
1545	NaN	NaN	NaN	NaN	NaN	NaN	NaN	concat	lonprice	
1546	NaN	NaN	NaN	NaN	NaN	NaN	NaN	Null values	NO	
1547	NaN	NaN	NaN	NaN	NaN	NaN	NaN	find	1	
1548	NaN	NaN	NaN	NaN	NaN	NaN	NaN	search	1	

## DESCRIPTION OF TABLE

In [7]: `data.describe()`

Out[7]:

	ID	engine_power	age_in_days	km	previous_owners	lat
count	1538.000000	1538.000000	1538.000000	1538.000000	1538.000000	1538.000000
mean	769.500000	51.904421	1650.980494	53396.011704	1.123537	43.541361
std	444.126671	3.988023	1289.522278	40046.830723	0.416423	2.133518
min	1.000000	51.000000	366.000000	1232.000000	1.000000	36.855839
25%	385.250000	51.000000	670.000000	20006.250000	1.000000	41.802990
50%	769.500000	51.000000	1035.000000	39031.000000	1.000000	44.394096
75%	1153.750000	51.000000	2616.000000	79667.750000	1.000000	45.467960
max	1538.000000	77.000000	4658.000000	235000.000000	4.000000	46.795612

## FIND NULL VALUES

In [8]: `data.isna()`

Out[8]:

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon	price	Un
0	False	False	False	False	False	False	False	False	False	
1	False	False	False	False	False	False	False	False	False	
2	False	False	False	False	False	False	False	False	False	
3	False	False	False	False	False	False	False	False	False	
4	False	False	False	False	False	False	False	False	False	
...	...	...	...	...	...	...	...	...	...	
1544	True	True	True	True	True	True	True	False	False	
1545	True	True	True	True	True	True	True	False	False	
1546	True	True	True	True	True	True	True	False	False	
1547	True	True	True	True	True	True	True	False	False	
1548	True	True	True	True	True	True	True	False	False	

1549 rows × 11 columns

## FILL NULL VALUES

```
In [9]: data.fillna(1)
```

```
Out[9]:
```

	ID	model	engine_power	age_in_days	km	previous_owners	lat	lon
0	1.0	lounge	51.0	882.0	25000.0	1.0	44.907242	8.61155986
1	2.0	pop	51.0	1186.0	32500.0	1.0	45.666359	12.2418896
2	3.0	sport	74.0	4658.0	142228.0	1.0	45.503300	11.4178
3	4.0	lounge	51.0	2739.0	160000.0	1.0	40.633171	17.6346092
4	5.0	pop	73.0	3074.0	106880.0	1.0	41.903221	12.4956502
...	...	...	...	...	...	...	...	...
1544	1.0	1	1.0	1.0	1.0	1.0	1.000000	leng
1545	1.0	1	1.0	1.0	1.0	1.0	1.000000	conc
1546	1.0	1	1.0	1.0	1.0	1.0	1.000000	Null value
1547	1.0	1	1.0	1.0	1.0	1.0	1.000000	fir
1548	1.0	1	1.0	1.0	1.0	1.0	1.000000	searc

1549 rows × 11 columns

```
In [12]: data.columns
```

```
Out[12]: Index(['ID', 'model', 'engine_power', 'age_in_days', 'km', 'previous_owners',  
               'lat', 'lon', 'price', 'Unnamed: 9', 'Unnamed: 10'],  
              dtype='object')
```

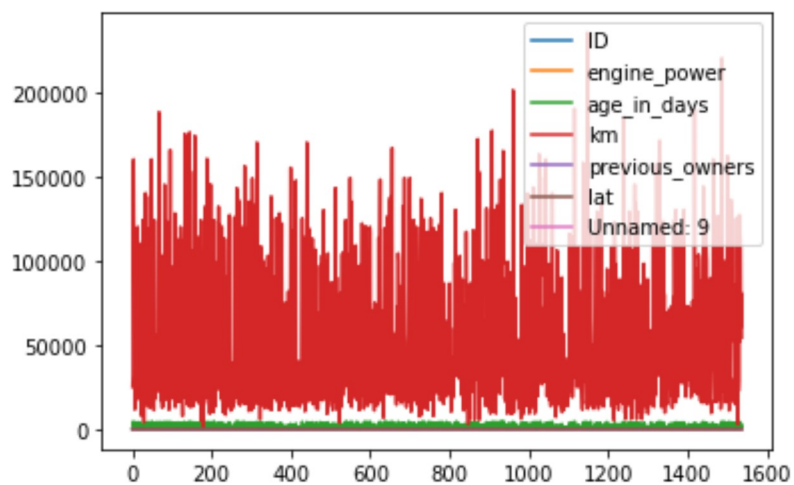
```
In [13]: data.index
```

```
Out[13]: RangeIndex(start=0, stop=1549, step=1)
```

## LINE PLOT

In [27]: `data.plot_line()`

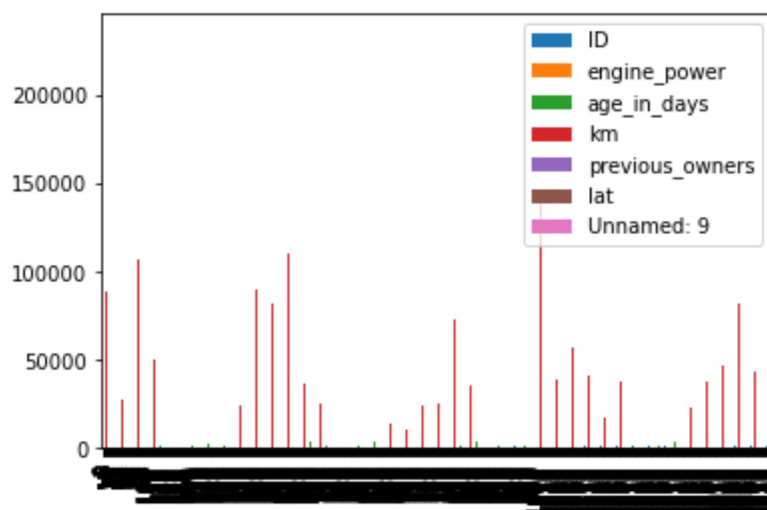
Out[27]: `<AxesSubplot:>`



## BAR CHART

In [15]: `data.plot_bar()`

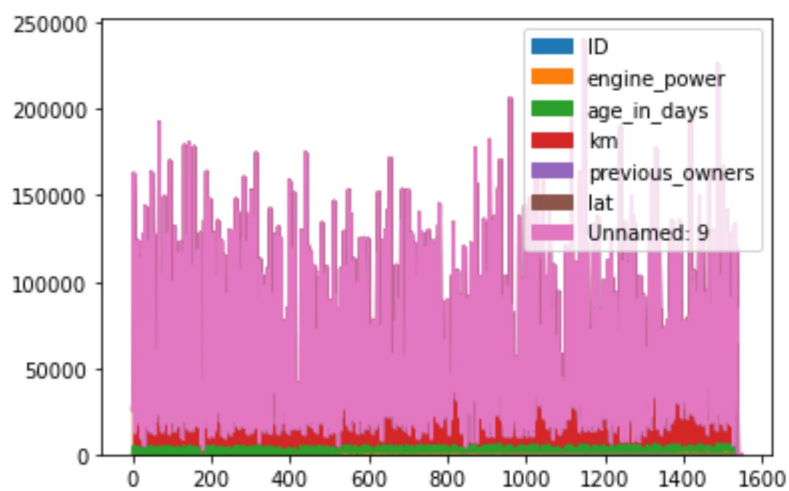
Out[15]: `<AxesSubplot:>`



## AREA CHART

```
In [16]: data.plot_area()
```

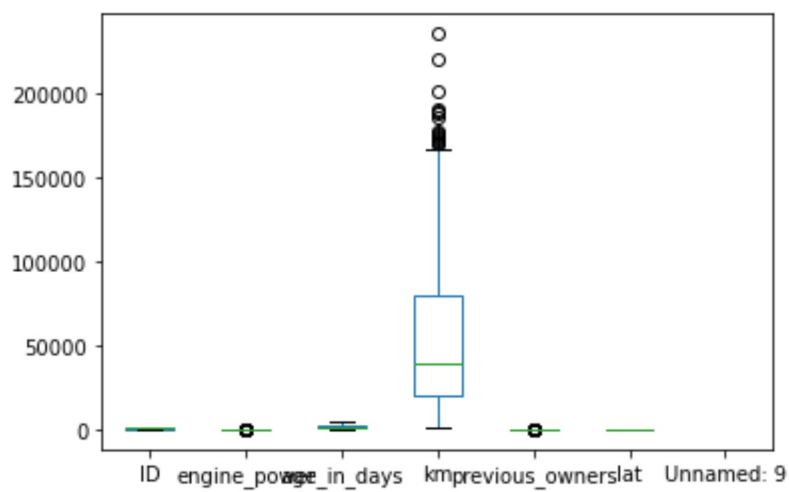
```
Out[16]: <AxesSubplot:>
```



## BOX PLOT

```
In [17]: data.plot_box()
```

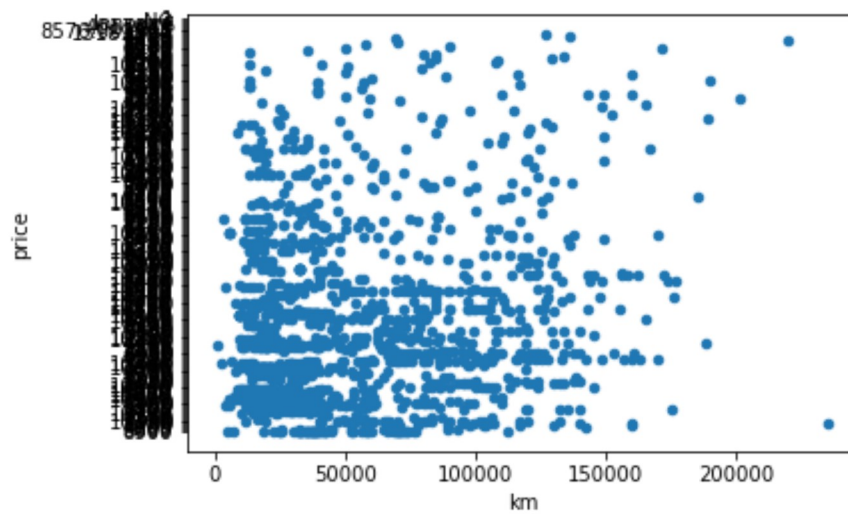
```
Out[17]: <AxesSubplot:>
```



## SCATTER PLOT

```
In [21]: data.plot.scatter(x="km", y="price")
```

```
Out[21]: <AxesSubplot:xlabel='km', ylabel='price'>
```



## PIE CHART

```
In [26]: data.plot.pie(x="km")
```

```
Out[26]: <AxesSubplot:ylabel='km'>
```

