

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings('ignore')
```

```
In [2]: df = pd.read_csv('cars.csv')
```

```
Out[2]:
```

	symboling	normalized-losses	make	fuel-type	body-style	drive-wheels	engine-location	width	height	engine-type	engine-size	horsepower	city-mpg	highway-mpg	price
0	3	?	alfa-romeo	gas	convertible	rwd	front	64.1	48.8	ohc	130	111	21	27	13495
1	3	?	alfa-romeo	gas	hatchback	rwd	front	65.5	52.4	ohc	152	154	19	26	16500
2	1	?	alfa-romeo	gas	sedan	fwd	front	65.2	54.3	ohc	109	102	24	30	12950
3	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450

```
In [3]: df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 295 entries, 0 to 284
Data columns (total 15 columns):
#  column                non-null count  dtype
---  --
0  symboling              295 non-null    int64
1  normalized-losses      295 non-null    object
2  make                   295 non-null    object
3  fuel-type              295 non-null    object
4  body-style             295 non-null    object
5  drive-wheels           295 non-null    object
6  engine-location        295 non-null    object
7  width                  295 non-null    float64
8  height                 295 non-null    float64
9  engine-type            295 non-null    object
10 engine-size            295 non-null    int64
11 horsepower             295 non-null    int64
12 city-mpg                295 non-null    int64
13 highway-mpg            295 non-null    int64
14 price                  295 non-null    int64
dtypes: float64(2), int64(9), object(4)
memory usage: 24.1+ KB
```

```
In [4]: df['normalized-losses'].value_counts()
```

```
Out[4]:
```

	symboling	normalized-losses	make	fuel-type	body-style	drive-wheels	engine-location	width	height	engine-type	engine-size	horsepower	city-mpg	highway-mpg	price
0	3	?	alfa-romeo	gas	convertible	rwd	front	64.1	48.8	ohc	130	111	21	27	13495
1	3	?	alfa-romeo	gas	hatchback	rwd	front	65.5	52.4	ohc	152	154	19	26	16500
2	1	?	alfa-romeo	gas	sedan	fwd	front	65.2	54.3	ohc	109	102	24	30	12950
3	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
4	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
5	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
6	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
7	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
8	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
9	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
10	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
11	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
12	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
13	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
14	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
15	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
16	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
17	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
18	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
19	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
20	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
21	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
22	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
23	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
24	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
25	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
26	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
27	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
28	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
29	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
30	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
31	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
32	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
33	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
34	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
35	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
36	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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38	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
39	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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41	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
42	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
43	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
44	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
45	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
46	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
47	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
48	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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50	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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53	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
54	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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56	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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61	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
62	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
63	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
64	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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66	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
67	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
68	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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72	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
73	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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75	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
76	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
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78	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
79	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
80	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
81	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
82	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
83	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
84	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
85	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
86	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
87	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
88	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
89	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
90	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	136	115	18	22	17450
91	2	?	alfa-romeo	gas	sedan	fwd	front	65.4	54.3	ohc	13				