

3	?	alfa-romero	gas	std	two	convertible	rwd	front	88.60	...	130	mpfi	3.47	2.68	9.00	111	5000	21	27	13495	
0	3	?	alfa-romero	gas	std	two	convertible	rwd	front	88.6	...	130	mpfi	3.47	2.68	9.0	111	5000	21	27	16500
1	1	?	alfa-romero	gas	std	two	hatchback	rwd	front	94.5	...	152	mpfi	2.68	3.47	9.0	154	5000	19	26	16500
2	2	164	audi	gas	std	four	sedan	fwd	front	99.8	...	109	mpfi	3.19	3.40	10.0	102	5500	24	30	13950
3	2	164	audi	gas	std	four	sedan	4wd	front	99.4	...	136	mpfi	3.19	3.40	8.0	115	5500	18	22	17450
4	2	?	audi	gas	std	two	sedan	fwd	front	99.8	...	136	mpfi	3.19	3.40	8.5	110	5500	19	25	15250
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
199	-1	95	volvo	gas	std	four	sedan	rwd	front	109.1	...	141	mpfi	3.78	3.15	9.5	114	5400	23	28	16845
200	-1	95	volvo	gas	turbo	four	sedan	rwd	front	109.1	...	141	mpfi	3.78	3.15	8.7	160	5300	19	25	19045
201	-1	95	volvo	gas	std	four	sedan	rwd	front	109.1	...	173	mpfi	3.58	2.87	8.8	134	5500	18	23	21485
202	-1	95	volvo	diesel	turbo	four	sedan	rwd	front	109.1	...	145	idl	3.01	3.40	23.0	106	4800	26	27	22470
203	-1	95	volvo	gas	turbo	four	sedan	rwd	front	109.1	...	141	mpfi	3.78	3.15	9.5	114	5400	19	25	22625

204 rows × 26 columns

```
... <class 'pandas.core.frame.DataFrame'>
RangeIndex: 204 entries, 0 to 203
Data columns (total 26 columns):
 #   Column      Non-Null Count Dtype  
--- 
 0   3           204 non-null    int64  
 1   ?           204 non-null    object  
 2   alfa-romero 204 non-null    object  
 3   gas          204 non-null    object  
 4   std          204 non-null    object  
 5   two          204 non-null    object  
 6   convertible  204 non-null    object  
 7   rwd          204 non-null    object  
 8   front        204 non-null    object  
 9   88.60        204 non-null    float64 
 10  168.80       204 non-null    float64 
 11  64.10        204 non-null    float64 
 12  48.80        204 non-null    float64 
 13  2548         204 non-null    int64  
 14  dohc         204 non-null    object  
 15  four          204 non-null    object  
 16  130          204 non-null    int64  
 17  mpfi         204 non-null    object  
 18  3.47          204 non-null    object  
 19  2.68          204 non-null    object  
 20  9.00          204 non-null    float64 
 21  111          204 non-null    object  
 22  5000         204 non-null    object  
 23  21           204 non-null    int64  
 24  27           204 non-null    int64  
 25  13495        204 non-null    object  
dtypes: float64(5), int64(5), object(16)
```

memory usage: 41.6+ KB

```
... <class 'pandas.core.frame.DataFrame'>
RangeIndex: 205 entries, 0 to 204
Data columns (total 26 columns):
 #   Column           Non-Null Count Dtype  
--- 
 0   symboling        205 non-null    int64  
 1   normalized-losses 164 non-null    object  
 2   make              205 non-null    object  
 3   fuel-type         205 non-null    object  
 4   aspiration        205 non-null    object  
 5   num-of-doors      203 non-null    object  
 6   body-style         205 non-null    object  
 7   drive-wheels       205 non-null    object  
 8   engine-location    205 non-null    object  
 9   wheel-base         205 non-null    float64 
 10  length             205 non-null    float64 
 11  width              205 non-null    float64 
 12  height             205 non-null    float64 
 13  curb-weight        205 non-null    int64  
 14  engine-type        205 non-null    object  
 15  num-of-cylinders   205 non-null    object  
 16  engine-size        205 non-null    int64  
 17  fuel-system         205 non-null    object  
 18  bore               201 non-null    object  
 19  stroke              201 non-null    object  
 20  compression-ratio   205 non-null    float64 
 21  horsepower          203 non-null    object  
 22  peak-rpm            203 non-null    object  
 23  city-mpg            205 non-null    int64  
 24  highway-mpg          205 non-null    int64  
 25  price               201 non-null    object  
dtypes: float64(5), int64(5), object(16)
memory usage: 41.8+ KB
```

```
... <class 'pandas.core.frame.DataFrame'>
RangeIndex: 205 entries, 0 to 204
Data columns (total 26 columns):
 #   Column            Non-Null Count Dtype  
--- 
 0   symboling          205 non-null   int64  
 1   normalized-losses  205 non-null   object  
 2   make               205 non-null   object  
 3   fuel-type          205 non-null   object  
 4   aspiration         205 non-null   object  
 5   num-of-doors       205 non-null   object  
 6   body-style         205 non-null   object  
 7   drive-wheels       205 non-null   object  
 8   engine-location    205 non-null   object  
 9   wheel-base         205 non-null   float64 
 10  length              205 non-null   float64 
 11  width              205 non-null   float64 
 12  height              205 non-null   float64 
 13  curb-weight        205 non-null   int64  
 14  engine-type         205 non-null   object  
 15  num-of-cylinders   205 non-null   object  
 16  engine-size         205 non-null   int64  
 17  fuel-system         205 non-null   object  
 18  bore                205 non-null   object  
 19  stroke              205 non-null   object  
 20  compression-ratio   205 non-null   float64 
 21  horsepower          205 non-null   object  
 22  peak-rpm             205 non-null   object  
 23  city-mpg             205 non-null   int64  
 24  highway-mpg          205 non-null   int64  
 25  price               205 non-null   object  
dtypes: float64(5), int64(5), object(16)
memory usage: 41.8+ KB
```

For more information about the study, please contact Dr. Michael J. Hwang at (319) 356-4520 or via email at [mhwang@uiowa.edu](mailto:mhwang@uiowa.edu).

```
symboling
symboling    False    205      Name: count, dtype: int64
                           normalized_losses
                           normalized_losses
                           False    164      Name: count, dtype: int64
                           True     41       Name: count, dtype: int64
                           make
                           make
                           make    205      Name: count, dtype: int64
                           fuel-type
                           fuel-type
                           False    205      Name: count, dtype: int64
                           aspiration
                           aspiration
                           False    205      Name: count, dtype: int64
                           num-of-doors
                           num-of-doors
                           False    203      Name: count, dtype: int64
                           True     2       body-style
                           body-style
                           body-style
                           False    205      Name: count, dtype: int64
                           drive-wheels
                           drive-wheels
                           False    205      Name: count, dtype: int64
                           engine-location
                           engine-location
                           False    205      Name: count, dtype: int64
                           length
                           length
                           False    205      Name: count, dtype: int64
                           width
```

	symboling	normalized-losses	make	fuel-type	aspiration	num-of-doors	body-style	drive-wheels	engine-location	wheel-base	...	engine-size	fuel-system	bore	stroke	compression-ratio	horsepower	peak-rpm	city-mpg	highway-mpg	price
0	False	True	False	False	False	False	False	False	False	False	...	False	False	False	False	False	False	False	False	False	
1	False	True	False	False	False	False	False	False	False	False	...	False	False	False	False	False	False	False	False	False	
2	False	True	False	False	False	False	False	False	False	False	...	False	False	False	False	False	False	False	False	False	
3	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	False	False	False	False	False	
4	False	False	False	False	False	False	False	False	False	False	...	False	False	False	False	False	False	False	False	False	

5 rows × 26 columns

7

...	0	
symboling	int64	
normalized-losses	object	
make	object	
fuel-type	object	
aspiration	object	
num-of-doors	object	
body-style	object	
drive-wheels	object	
engine-location	object	
wheel-base	float64	
length	float64	
width	float64	
height	float64	
curb-weight	int64	
engine-type	object	
num-of-cylinders	object	
engine-size	int64	
fuel-system	object	
bore	object	
stroke	object	
compression-ratio	float64	
horsepower	object	
peak-rpm	object	
city-mpg	int64	
highway-mpg	int64	
price	object	
		dtype: object

9

...	normalized-losses	
0	122.0	
1	122.0	
2	122.0	
3	164	
4	164	
...	...	
200	95	
201	95	
202	95	
203	95	
204	95	

205 rows × 1 columns

dtype: object

10

...	count	
body-style		
sedan	96	
hatchback	70	
wagon	25	
hardtop	8	
convertible	6	

dtype: int64

12

...	Name: count, dtype: int64	
wheel-base	wheel-base	
False	201	
Name: count, dtype: int64		
length	length	
False	201	
Name: count, dtype: int64		
width	width	
False	201	
Name: count, dtype: int64		
height	height	
False	201	
Name: count, dtype: int64		
curb-weight	curb-weight	
False	201	
Name: count, dtype: int64		
engine-type	engine-type	
False	201	
Name: count, dtype: int64		
num-of-cylinders	num-of-cylinders	
False	201	
Name: count, dtype: int64		
engine-size	engine-size	
False	201	
Name: count, dtype: int64		
fuel-system	fuel-system	
False	201	
Name: count, dtype: int64		
bore	bore	
False	201	
Name: count, dtype: int64		

13

```
... <class 'pandas.core.frame.DataFrame'>
RangeIndex: 201 entries, 0 to 200
Data columns (total 26 columns):
 #   Column           Non-Null Count  Dtype  
 ---  -- 
 0   symboling        201 non-null    int64  
 1   normalized-losses 201 non-null    object  
 2   make              201 non-null    object  
 3   fuel-type         201 non-null    object  
 4   aspiration        201 non-null    object  
 5   num-of-doors      201 non-null    object  
 6   body-style        201 non-null    object  
 7   drive-wheels      201 non-null    object  
 8   engine-location   201 non-null    object  
 9   wheel-base        201 non-null    float64
 10  length             201 non-null    float64
 11  width              201 non-null    float64
 12  height             201 non-null    float64
 13  curb-weight       201 non-null    int64  
 14  engine-type        201 non-null    object  
 15  num-of-cylinders  201 non-null    object  
 16  engine-size        201 non-null    int64  
 17  fuel-system        201 non-null    object  
 18  bore               201 non-null    object  
 19  stroke              201 non-null    object  
 20  compression-ratio 201 non-null    float64
 21  horsepower          201 non-null    object  
 22  peak-rpm            201 non-null    object  
 23  city-mpg            201 non-null    int64  
 24  highway-mpg          201 non-null    int64  
 25  price              201 non-null    object  
dtypes: float64(5), int64(5), object(16)
memory usage: 41.0+ KB
```

14