

In [29]:

```
import pandas as pd
```

In [30]:

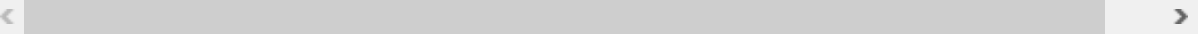
```
cars = pd.read_csv(r'https://github.com/YBI-Foundation/Dataset/raw/main/MPG.csv')
```

In [31]:

```
cars.head(10)
```

Out[31]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	n
0	18.0	8	307.0	130.0	3504	12.0	70	usa	chev che m
1	15.0	8	350.0	165.0	3693	11.5	70	usa	t skylark
2	18.0	8	318.0	150.0	3436	11.0	70	usa	plym sat
3	16.0	8	304.0	150.0	3433	12.0	70	usa	amc i
4	17.0	8	302.0	140.0	3449	10.5	70	usa	ford ti
5	15.0	8	429.0	198.0	4341	10.0	70	usa	ford ga
6	14.0	8	454.0	220.0	4354	9.0	70	usa	chev irr
7	14.0	8	440.0	215.0	4312	8.5	70	usa	plym fi
8	14.0	8	455.0	225.0	4425	10.0	70	usa	po cat
9	15.0	8	390.0	190.0	3850	8.5	70	usa	ambass



In [32]:

```
cars.tail()
```

Out[32]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	n
393	27.0	4	140.0	86.0	2790	15.6	82	usa	mus
394	44.0	4	97.0	52.0	2130	24.6	82	europa	pi
395	32.0	4	135.0	84.0	2295	11.6	82	usa	d ram
396	28.0	4	120.0	79.0	2625	18.6	82	usa	ra
397	31.0	4	119.0	82.0	2720	19.4	82	usa	che

In [33]:

```
pd.options.display.max_rows = None
```

In [34]:

cars

Out[34]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
0	18.0	8	307.0	130.0	3504	12.0	70	usa	c
1	15.0	8	350.0	165.0	3693	11.5	70	usa	sky
2	18.0	8	318.0	150.0	3436	11.0	70	usa	p
3	16.0	8	304.0	150.0	3433	12.0	70	usa	ar
4	17.0	8	302.0	140.0	3449	10.5	70	usa	fo
5	15.0	8	429.0	198.0	4341	10.0	70	usa	forc
6	14.0	8	454.0	220.0	4354	9.0	70	usa	c
7	14.0	8	440.0	215.0	4312	8.5	70	usa	p
8	14.0	8	455.0	225.0	4425	10.0	70	usa	
9	15.0	8	390.0	190.0	3850	8.5	70	usa	amb
10	15.0	8	383.0	170.0	3563	10.0	70	usa	ch
11	14.0	8	340.0	160.0	3609	8.0	70	usa	p 'c
12	15.0	8	400.0	150.0	3761	9.5	70	usa	c mor
13	14.0	8	455.0	225.0	3086	10.0	70	usa	buic waç
14	24.0	4	113.0	95.0	2372	15.0	70	japan	coro
15	22.0	6	198.0	95.0	2833	15.5	70	usa	p
16	18.0	6	199.0	97.0	2774	15.5	70	usa	am
17	21.0	6	200.0	85.0	2587	16.0	70	usa	n
18	27.0	4	97.0	88.0	2130	14.5	70	japan	
19	26.0	4	97.0	46.0	1835	20.5	70	europe	volk 113'
20	25.0	4	110.0	87.0	2672	17.5	70	europe	peuç

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
21	24.0	4	107.0	90.0	2430	14.5	70	europa	au
22	25.0	4	104.0	95.0	2375	17.5	70	europa	s
23	26.0	4	121.0	113.0	2234	12.5	70	europa	bn
24	21.0	6	199.0	90.0	2648	15.0	70	usa	amc
25	10.0	8	360.0	215.0	4615	14.0	70	usa	f
26	10.0	8	307.0	200.0	4376	15.0	70	usa	ch
27	11.0	8	318.0	210.0	4382	13.5	70	usa	dod
28	9.0	8	304.0	193.0	4732	18.5	70	usa	l
29	27.0	4	97.0	88.0	2130	14.5	71	japan	
30	28.0	4	140.0	90.0	2264	15.5	71	usa	c ve
31	25.0	4	113.0	95.0	2228	14.0	71	japan	
32	25.0	4	98.0	NaN	2046	19.0	71	usa	fc
33	19.0	6	232.0	100.0	2634	13.0	71	usa	amc
34	16.0	6	225.0	105.0	3439	15.5	71	usa	p
35	17.0	6	250.0	100.0	3329	15.5	71	usa	c
36	19.0	6	250.0	88.0	3302	15.5	71	usa	fo
37	18.0	6	232.0	100.0	3288	15.5	71	usa	
38	14.0	8	350.0	165.0	4209	12.0	71	usa	c
39	14.0	8	400.0	175.0	4464	11.5	71	usa	br
40	14.0	8	351.0	153.0	4154	13.5	71	usa	ford
41	14.0	8	318.0	150.0	4096	13.0	71	usa	p
42	12.0	8	383.0	180.0	4955	11.5	71	usa	
43	13.0	8	400.0	170.0	4746	12.0	71	usa	ford sq
44	13.0	8	400.0	175.0	5140	12.0	71	usa	sa
45	18.0	6	258.0	110.0	2962	13.5	71	usa	am sp
46	22.0	4	140.0	72.0	2408	19.0	71	usa	c ve
47	19.0	6	250.0	100.0	3282	15.0	71	usa	

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
48	18.0	6	250.0	88.0	3139	14.5	71	usa	r
49	23.0	4	122.0	86.0	2220	14.0	71	usa	ca
50	28.0	4	116.0	90.0	2123	14.0	71	europa	or
51	30.0	4	79.0	70.0	2074	19.5	71	europa	peug
52	30.0	4	88.0	76.0	2065	14.5	71	europa	f
53	31.0	4	71.0	65.0	1773	19.0	71	japan	coro
54	35.0	4	72.0	69.0	1613	18.0	71	japan	data
55	27.0	4	97.0	60.0	1834	19.0	71	europa	volk mi
56	26.0	4	91.0	70.0	1955	20.5	71	usa	p
57	24.0	4	113.0	95.0	2278	15.5	72	japan	
58	25.0	4	97.5	80.0	2126	17.0	72	usa	do
59	23.0	4	97.0	54.0	2254	23.5	72	europa	volk
60	20.0	4	140.0	90.0	2408	19.5	72	usa	c
61	21.0	4	122.0	86.0	2226	16.5	72	usa	fc r
62	13.0	8	350.0	165.0	4274	12.0	72	usa	c
63	14.0	8	400.0	175.0	4385	12.0	72	usa	
64	15.0	8	318.0	150.0	4135	13.5	72	usa	p
65	14.0	8	351.0	153.0	4129	13.0	72	usa	ford
66	17.0	8	304.0	150.0	3672	11.5	72	usa	amb
67	11.0	8	429.0	208.0	4633	11.0	72	usa	
68	13.0	8	350.0	155.0	4502	13.5	72	usa	
69	12.0	8	350.0	160.0	4456	13.5	72	usa	olc
70	13.0	8	400.0	190.0	4422	12.5	72	usa	
71	19.0	3	70.0	97.0	2330	13.5	72	japan	ma

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin
72	15.0	8	304.0	150.0	3892	12.5	72	usa
73	13.0	8	307.0	130.0	4098	14.0	72	usa
74	13.0	8	302.0	140.0	4294	16.0	72	usa
75	14.0	8	318.0	150.0	4077	14.0	72	usa
76	18.0	4	121.0	112.0	2933	14.5	72	europa
77	22.0	4	121.0	76.0	2511	18.0	72	europa
78	21.0	4	120.0	87.0	2979	19.5	72	europa
79	26.0	4	96.0	69.0	2189	18.0	72	europa
80	22.0	4	122.0	86.0	2395	16.0	72	usa
81	28.0	4	97.0	92.0	2288	17.0	72	japan
82	23.0	4	120.0	97.0	2506	14.5	72	japan
83	28.0	4	98.0	80.0	2164	15.0	72	usa
84	27.0	4	97.0	88.0	2100	16.5	72	japan
85	13.0	8	350.0	175.0	4100	13.0	73	usa
86	14.0	8	304.0	150.0	3672	11.5	73	usa
87	13.0	8	350.0	145.0	3988	13.0	73	usa
88	14.0	8	302.0	137.0	4042	14.5	73	usa
89	15.0	8	318.0	150.0	3777	12.5	73	usa
90	12.0	8	429.0	198.0	4952	11.5	73	usa
91	13.0	8	400.0	150.0	4464	12.0	73	usa
92	13.0	8	351.0	158.0	4363	13.0	73	usa
93	14.0	8	318.0	150.0	4237	14.5	73	usa

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
94	13.0	8	440.0	215.0	4735	11.0	73	usa	new br
95	12.0	8	455.0	225.0	4951	11.0	73	usa	ele
96	13.0	8	360.0	175.0	3821	11.0	73	usa	amb br
97	18.0	6	225.0	105.0	3121	16.5	73	usa	p
98	16.0	6	250.0	100.0	3278	18.0	73	usa	c
99	18.0	6	232.0	100.0	2945	16.0	73	usa	am
100	18.0	6	250.0	88.0	3021	16.5	73	usa	n
101	23.0	6	198.0	95.0	2904	16.0	73	usa	p
102	26.0	4	97.0	46.0	1950	21.0	73	europa	volk sup
103	11.0	8	400.0	150.0	4997	14.0	73	usa	c
104	12.0	8	400.0	167.0	4906	12.5	73	usa	ford
105	13.0	8	360.0	170.0	4654	13.0	73	usa	p
106	12.0	8	350.0	180.0	4499	12.5	73	usa	old visti
107	18.0	6	232.0	100.0	2789	15.0	73	usa	amc
108	20.0	4	97.0	88.0	2279	19.0	73	japan	
109	21.0	4	140.0	72.0	2401	19.5	73	usa	c
110	22.0	4	108.0	94.0	2379	16.5	73	japan	dat
111	18.0	3	70.0	90.0	2124	13.5	73	japan	ma
112	19.0	4	122.0	85.0	2310	18.5	73	usa	fc
113	21.0	6	155.0	107.0	2472	14.0	73	usa	
114	26.0	4	98.0	90.0	2265	15.5	73	europa	spo
115	15.0	8	350.0	145.0	4082	13.0	73	usa	c mor
116	16.0	8	400.0	230.0	4278	9.5	73	usa	gr
117	29.0	4	68.0	49.0	1867	19.5	73	europa	
118	24.0	4	116.0	75.0	2158	15.5	73	europa	ope
119	20.0	4	114.0	91.0	2582	14.0	73	europa	au

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
120	19.0	4	121.0	112.0	2868	15.5	73	europa	volvo
121	15.0	8	318.0	150.0	3399	11.0	73	usa	do
122	24.0	4	121.0	110.0	2660	14.0	73	europa	sa
123	20.0	6	156.0	122.0	2807	13.5	73	japan	toyota
124	11.0	8	350.0	180.0	3664	11.0	73	usa	old
125	20.0	6	198.0	95.0	3102	16.5	74	usa	p
126	21.0	6	200.0	NaN	2875	17.0	74	usa	n
127	19.0	6	232.0	100.0	2901	16.0	74	usa	am
128	15.0	6	250.0	100.0	3336	17.0	74	usa	c
129	31.0	4	79.0	67.0	1950	19.0	74	japan	data
130	26.0	4	122.0	80.0	2451	16.5	74	usa	fi
131	32.0	4	71.0	65.0	1836	21.0	74	japan	corolla
132	25.0	4	140.0	75.0	2542	17.0	74	usa	c
133	16.0	6	250.0	100.0	3781	17.0	74	usa	c
134	16.0	6	258.0	110.0	3632	18.0	74	usa	
135	18.0	6	225.0	105.0	3613	16.5	74	usa	p
136	16.0	8	302.0	140.0	4141	14.0	74	usa	fi
137	13.0	8	350.0	150.0	4699	14.5	74	usa	lu:
138	14.0	8	318.0	150.0	4457	13.5	74	usa	cust
139	14.0	8	302.0	140.0	4638	16.0	74	usa	fi tor
140	14.0	8	304.0	150.0	4257	15.5	74	usa	
141	29.0	4	98.0	83.0	2219	16.5	74	europa	
142	26.0	4	79.0	67.0	1963	15.5	74	europa	volk
143	26.0	4	97.0	78.0	2300	14.5	74	europa	ope
144	31.0	4	76.0	52.0	1649	16.5	74	japan	
145	32.0	4	83.0	61.0	2003	19.0	74	japan	dat

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
146	28.0	4	90.0	75.0	2125	14.5	74	usa	do
147	24.0	4	90.0	75.0	2108	15.5	74	europa	
148	26.0	4	116.0	75.0	2246	14.0	74	europa	fi
149	24.0	4	120.0	97.0	2489	15.0	74	japan	hor
150	26.0	4	108.0	93.0	2391	15.5	74	japan	
151	31.0	4	79.0	67.0	2000	16.0	74	europa	
152	19.0	6	225.0	95.0	3264	16.0	75	usa	p
153	18.0	6	250.0	105.0	3459	16.0	75	usa	c
154	15.0	6	250.0	72.0	3432	21.0	75	usa	r
155	15.0	6	250.0	72.0	3158	19.5	75	usa	n
156	16.0	8	400.0	170.0	4668	11.5	75	usa	
157	15.0	8	350.0	145.0	4440	14.0	75	usa	c
158	16.0	8	318.0	150.0	4498	14.5	75	usa	p gr
159	14.0	8	351.0	148.0	4657	13.5	75	usa	
160	17.0	6	231.0	110.0	3907	21.0	75	usa	
161	16.0	6	250.0	105.0	3897	18.5	75	usa	c
162	15.0	6	258.0	110.0	3730	19.0	75	usa	
163	18.0	6	225.0	95.0	3785	19.0	75	usa	p
164	21.0	6	231.0	110.0	3039	15.0	75	usa	ξ
165	20.0	8	262.0	110.0	3221	13.5	75	usa	c mo
166	13.0	8	302.0	129.0	3169	12.0	75	usa	mi
167	29.0	4	97.0	75.0	2171	16.0	75	japan	
168	23.0	4	140.0	83.0	2639	17.0	75	usa	fc
169	20.0	6	232.0	100.0	2914	16.0	75	usa	amc
170	23.0	4	140.0	78.0	2592	18.5	75	usa	
171	24.0	4	134.0	96.0	2702	13.5	75	japan	
172	25.0	4	90.0	71.0	2223	16.5	75	europa	volk
173	24.0	4	119.0	97.0	2545	17.0	75	japan	dat

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
174	18.0	6	171.0	97.0	2984	14.5	75	usa	fc
175	29.0	4	90.0	70.0	1937	14.0	75	europa	volk
176	19.0	6	232.0	90.0	3211	17.0	75	usa	an
177	23.0	4	115.0	95.0	2694	15.0	75	europa	au
178	23.0	4	120.0	88.0	2957	17.0	75	europa	peuq
179	22.0	4	121.0	98.0	2945	14.5	75	europa	volh
180	25.0	4	121.0	115.0	2671	13.5	75	europa	sa
181	33.0	4	91.0	53.0	1795	17.5	75	japan	hor
182	28.0	4	107.0	86.0	2464	15.5	76	europa	
183	25.0	4	116.0	81.0	2220	16.9	76	europa	op
184	25.0	4	140.0	92.0	2572	14.9	76	usa	
185	26.0	4	98.0	79.0	2255	17.7	76	usa	do
186	27.0	4	101.0	83.0	2202	15.3	76	europa	ren
187	17.5	8	305.0	140.0	4215	13.0	76	usa	c
188	16.0	8	318.0	150.0	4190	13.0	76	usa	br
189	15.5	8	304.0	120.0	3962	13.9	76	usa	
190	14.5	8	351.0	152.0	4215	12.8	76	usa	fi
191	22.0	6	225.0	100.0	3233	15.4	76	usa	p
192	22.0	6	250.0	105.0	3353	14.5	76	usa	c
193	24.0	6	200.0	81.0	3012	17.6	76	usa	n
194	22.5	6	232.0	90.0	3085	17.6	76	usa	am
195	29.0	4	85.0	52.0	2035	22.2	76	usa	c (
196	24.5	4	98.0	60.0	2164	22.1	76	usa	c
197	29.0	4	90.0	70.0	1937	14.2	76	europa	v
198	33.0	4	91.0	53.0	1795	17.4	76	japan	hor
199	20.0	6	225.0	100.0	3651	17.7	76	usa	a
200	18.0	6	250.0	78.0	3574	21.0	76	usa	!
201	18.5	6	250.0	110.0	3645	16.2	76	usa	ve

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
202	17.5	6	258.0	95.0	3193	17.8	76	usa	an
203	29.5	4	97.0	71.0	1825	12.2	76	europa	volk
204	32.0	4	85.0	70.0	1990	17.0	76	japan	d
205	28.0	4	97.0	75.0	2155	16.4	76	japan	
206	26.5	4	140.0	72.0	2565	13.6	76	usa	fc
207	20.0	4	130.0	102.0	3150	15.7	76	europa	ve
208	13.0	8	318.0	150.0	3940	13.2	76	usa	p pre
209	19.0	4	120.0	88.0	3270	21.9	76	europa	peug
210	19.0	6	156.0	108.0	2930	15.5	76	japan	toyc
211	16.5	6	168.0	120.0	3820	16.7	76	europa	me be
212	16.5	8	350.0	180.0	4380	12.1	76	usa	
213	13.0	8	350.0	145.0	4055	12.0	76	usa	ch
214	13.0	8	302.0	130.0	3870	15.0	76	usa	f
215	13.0	8	318.0	150.0	3755	14.0	76	usa	dod
216	31.5	4	98.0	68.0	2045	18.5	77	japan	accu
217	30.0	4	111.0	80.0	2155	14.8	77	usa	bu isuzi
218	36.0	4	79.0	58.0	1825	18.6	77	europa	renu
219	25.5	4	122.0	96.0	2300	15.5	77	usa	p e
220	33.5	4	85.0	70.0	1945	16.8	77	japan	dat ha
221	17.5	8	305.0	145.0	3880	12.5	77	usa	c
222	17.0	8	260.0	110.0	4060	19.0	77	usa	olc s
223	15.5	8	318.0	145.0	4140	13.7	77	usa	br
224	15.0	8	302.0	130.0	4295	14.9	77	usa	br
225	17.5	6	250.0	110.0	3520	16.4	77	usa	c c
226	20.5	6	231.0	105.0	3425	16.9	77	usa	

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
227	19.0	6	225.0	100.0	3630	17.7	77	usa	p
228	18.5	6	250.0	98.0	3525	19.0	77	usa	
229	16.0	8	400.0	180.0	4220	11.1	77	usa	grai
230	15.5	8	350.0	170.0	4165	11.4	77	usa	c mor
231	15.5	8	400.0	190.0	4325	12.2	77	usa	
232	16.0	8	351.0	149.0	4335	14.5	77	usa	thu
233	29.0	4	97.0	78.0	1940	14.5	77	europa	volk
234	24.5	4	151.0	88.0	2740	16.0	77	usa	
235	26.0	4	97.0	75.0	2265	18.2	77	japan	
236	25.5	4	140.0	89.0	2755	15.8	77	usa	mi
237	30.5	4	98.0	63.0	2051	17.0	77	usa	c (
238	33.5	4	98.0	83.0	2075	15.9	77	usa	do
239	30.0	4	97.0	67.0	1985	16.4	77	japan	s
240	30.5	4	97.0	78.0	2190	14.1	77	europa	volk
241	22.0	6	146.0	97.0	2815	14.5	77	japan	dat
242	21.5	4	121.0	110.0	2600	12.8	77	europa	bi
243	21.5	3	80.0	110.0	2720	13.5	77	japan	ma volk
244	43.1	4	90.0	48.0	1985	21.5	78	europa	
245	36.1	4	98.0	66.0	1800	14.4	78	usa	fo
246	32.8	4	78.0	52.0	1985	19.4	78	japan	mi
247	39.4	4	85.0	70.0	2070	18.6	78	japan	dat
248	36.1	4	91.0	60.0	1800	16.4	78	japan	hor
249	19.9	8	260.0	110.0	3365	15.5	78	usa	olc br

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
250	19.4	8	318.0	140.0	3735	13.2	78	usa	(
251	20.2	8	302.0	139.0	3570	12.8	78	usa	r
252	19.2	6	231.0	105.0	3535	19.2	78	usa	p
253	20.5	6	200.0	95.0	3155	18.2	78	usa	c
254	20.2	6	200.0	85.0	2965	15.8	78	usa	
255	25.1	4	140.0	88.0	2720	15.4	78	usa	
256	20.5	6	225.0	100.0	3430	17.2	78	usa	p
257	19.4	6	232.0	90.0	3210	17.2	78	usa	
258	20.6	6	231.0	105.0	3380	15.8	78	usa	
259	20.8	6	200.0	85.0	3070	16.7	78	usa	
260	18.6	6	225.0	110.0	3620	18.7	78	usa	
261	18.1	6	258.0	120.0	3410	15.1	78	usa	cor
262	19.2	8	305.0	145.0	3425	13.2	78	usa	c mor
263	17.7	6	231.0	165.0	3445	13.4	78	usa	bui spo
264	18.1	8	302.0	139.0	3205	11.2	78	usa	foi
265	17.5	8	318.0	140.0	4080	13.7	78	usa	maç
266	30.0	4	98.0	68.0	2155	16.5	78	usa	c (
267	27.5	4	134.0	95.0	2560	14.2	78	japan	
268	27.2	4	119.0	97.0	2300	14.7	78	japan	dat
269	30.9	4	105.0	75.0	2230	14.5	78	usa	dod
270	21.1	4	134.0	95.0	2515	14.8	78	japan	toyo g
271	23.2	4	156.0	105.0	2745	16.7	78	usa	p
272	23.8	4	151.0	85.0	2855	17.6	78	usa	olc st
273	23.9	4	119.0	97.0	2405	14.9	78	japan	dat

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
274	20.3	5	131.0	103.0	2830	15.9	78	europa	al
275	17.0	6	163.0	125.0	3140	13.6	78	europa	volk
276	21.6	4	121.0	115.0	2795	15.7	78	europa	saab
277	16.2	6	163.0	133.0	3410	15.8	78	europa	
278	31.5	4	89.0	71.0	1990	14.9	78	europa	volk
279	29.5	4	98.0	68.0	2135	16.6	78	japan	ea
280	21.5	6	231.0	115.0	3245	15.4	79	usa	lei
281	19.8	6	200.0	85.0	2990	18.2	79	usa	z
282	22.3	4	140.0	88.0	2890	17.3	79	usa	fa
283	20.2	6	232.0	90.0	3265	18.2	79	usa	conc
284	20.6	6	225.0	110.0	3360	16.6	79	usa	
285	17.0	8	305.0	130.0	3840	15.4	79	usa	c
286	17.6	8	302.0	129.0	3725	13.4	79	usa	
287	16.5	8	351.0	138.0	3955	13.2	79	usa	
288	18.2	8	318.0	135.0	3830	15.2	79	usa	d
289	16.9	8	350.0	155.0	4360	14.9	79	usa	buic waç
290	15.5	8	351.0	142.0	4054	14.3	79	usa	ford sq
291	19.2	8	267.0	125.0	3605	15.0	79	usa	c clas
292	18.5	8	360.0	150.0	3940	13.0	79	usa	cour
293	31.9	4	89.0	71.0	1925	14.0	79	europa	v
294	34.1	4	86.0	65.0	1975	15.2	79	japan	mi
295	35.7	4	98.0	80.0	1915	14.4	79	usa	do ha
296	27.4	4	121.0	80.0	2670	15.0	79	usa	amc
297	25.4	5	183.0	77.0	3530	20.1	79	europa	m be

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin
298	23.0	8	350.0	125.0	3900	17.4	79	usa
299	27.2	4	141.0	71.0	3190	24.8	79	europa
300	23.9	8	260.0	90.0	3420	22.2	79	usa
301	34.2	4	105.0	70.0	2200	13.2	79	usa
302	34.5	4	105.0	70.0	2150	14.9	79	usa
303	31.8	4	85.0	65.0	2020	19.2	79	japan
304	37.3	4	91.0	69.0	2130	14.7	79	europa
305	28.4	4	151.0	90.0	2670	16.0	79	usa
306	28.8	6	173.0	115.0	2595	11.3	79	usa
307	26.8	6	173.0	115.0	2700	12.9	79	usa
308	33.5	4	151.0	90.0	2556	13.2	79	usa
309	41.5	4	98.0	76.0	2144	14.7	80	europa
310	38.1	4	89.0	60.0	1968	18.8	80	japan
311	32.1	4	98.0	70.0	2120	15.5	80	usa
312	37.2	4	86.0	65.0	2019	16.4	80	japan
313	28.0	4	151.0	90.0	2678	16.5	80	usa
314	26.4	4	140.0	88.0	2870	18.1	80	usa
315	24.3	4	151.0	90.0	3003	20.1	80	usa
316	19.1	6	225.0	90.0	3381	18.7	80	usa
317	34.3	4	97.0	78.0	2188	15.8	80	europa
318	29.8	4	134.0	90.0	2711	15.5	80	japan
319	31.3	4	120.0	75.0	2542	17.5	80	japan
320	37.0	4	119.0	92.0	2434	15.0	80	japan
321	32.2	4	108.0	75.0	2265	15.2	80	japan
322	46.6	4	86.0	65.0	2110	17.9	80	japan
323	27.9	4	156.0	105.0	2800	14.4	80	usa

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
324	40.8	4	85.0	65.0	2110	19.2	80	japan	dat
325	44.3	4	90.0	48.0	2085	21.7	80	europa	vw
326	43.4	4	90.0	48.0	2335	23.7	80	europa	vw
327	36.4	5	121.0	67.0	2950	19.9	80	europa	audi
328	30.0	4	146.0	67.0	3250	21.8	80	europa	mercedes
329	44.6	4	91.0	67.0	1850	13.8	80	japan	honda
330	40.9	4	85.0	NaN	1835	17.3	80	europa	renault
331	33.8	4	97.0	67.0	2145	18.0	80	japan	subaru
332	29.8	4	89.0	62.0	1845	15.3	80	europa	volkswagen
333	32.7	6	168.0	132.0	2910	11.4	80	japan	dat
334	23.7	3	70.0	100.0	2420	12.5	80	japan	ma
335	35.0	4	122.0	88.0	2500	15.1	80	europa	triumph
336	23.6	4	140.0	NaN	2905	14.3	80	usa	r
337	32.4	4	107.0	72.0	2290	17.0	80	japan	
338	27.2	4	135.0	84.0	2490	15.7	81	usa	p
339	26.6	4	151.0	84.0	2635	16.4	81	usa	
340	25.8	4	156.0	92.0	2620	14.4	81	usa	dodge
341	23.5	6	173.0	110.0	2725	12.6	81	usa	chrysler
342	30.0	4	135.0	84.0	2385	12.9	81	usa	p
343	39.1	4	79.0	58.0	1755	16.9	81	japan	
344	39.0	4	86.0	64.0	1875	16.4	81	usa	p
345	35.1	4	81.0	60.0	1760	16.1	81	japan	honda
346	32.3	4	97.0	67.0	2065	17.8	81	japan	
347	37.0	4	85.0	65.0	1975	19.4	81	japan	dat
348	37.7	4	89.0	62.0	2050	17.3	81	japan	toyota
349	34.1	4	91.0	68.0	1985	16.0	81	japan	mazda

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
350	34.7	4	105.0	63.0	2215	14.9	81	usa	p
351	34.4	4	98.0	65.0	2045	16.2	81	usa	h
352	29.9	4	98.0	65.0	2380	20.7	81	usa	for
353	33.0	4	105.0	74.0	2190	14.2	81	europe	for
354	34.5	4	100.0	NaN	2320	15.8	81	europe	volk
355	33.7	4	107.0	75.0	2210	14.4	81	japan	rei
356	32.4	4	108.0	75.0	2350	16.8	81	japan	
357	32.9	4	119.0	100.0	2615	14.8	81	japan	
358	31.6	4	120.0	74.0	2635	18.3	81	japan	ma
359	28.1	4	141.0	80.0	3230	20.4	81	europe	50
360	30.7	6	145.0	76.0	3160	19.6	81	europe	volv
361	25.4	6	168.0	116.0	2900	12.6	81	japan	,
362	24.2	6	146.0	120.0	2930	13.8	81	japan	dat
363	22.4	6	231.0	110.0	3415	15.8	81	usa	
364	26.6	8	350.0	105.0	3725	19.0	81	usa	olc
365	20.2	6	200.0	88.0	3060	17.1	81	usa	c
366	17.6	6	225.0	85.0	3465	16.6	81	usa	gr
367	28.0	4	112.0	88.0	2605	19.6	82	usa	c
368	27.0	4	112.0	88.0	2640	18.6	82	usa	c
369	34.0	4	112.0	88.0	2395	18.0	82	usa	c
370	31.0	4	112.0	85.0	2575	16.2	82	usa	ca
371	29.0	4	135.0	84.0	2525	16.0	82	usa	j
372	27.0	4	151.0	90.0	2735	18.0	82	usa	ha
373	24.0	4	140.0	92.0	2865	16.4	82	usa	dod

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
374	23.0	4	151.0	NaN	3035	20.5	82	usa	co
375	36.0	4	105.0	74.0	1980	15.3	82	europa	volk
376	37.0	4	91.0	68.0	2025	18.2	82	japan	mi
377	31.0	4	91.0	68.0	1970	17.6	82	japan	mi
378	38.0	4	105.0	63.0	2125	14.7	82	usa	p
379	36.0	4	98.0	70.0	2125	17.3	82	usa	
380	36.0	4	120.0	88.0	2160	14.5	82	japan	st
381	36.0	4	107.0	75.0	2205	14.5	82	japan	
382	34.0	4	108.0	70.0	2245	16.9	82	japan	
383	38.0	4	91.0	67.0	1965	15.0	82	japan	hor
384	32.0	4	91.0	67.0	1965	15.7	82	japan	hor
385	38.0	4	91.0	67.0	1995	16.2	82	japan	dat
386	25.0	6	181.0	110.0	2945	16.4	82	usa	
387	38.0	6	262.0	85.0	3015	17.0	82	usa	old cutla
388	26.0	4	156.0	92.0	2585	14.5	82	usa	m
389	22.0	6	232.0	112.0	2835	14.7	82	usa	g
390	32.0	4	144.0	96.0	2665	13.9	82	japan	toyo
391	36.0	4	135.0	84.0	2370	13.0	82	usa	cha
392	27.0	4	151.0	90.0	2950	17.3	82	usa	c
393	27.0	4	140.0	86.0	2790	15.6	82	usa	mu
394	44.0	4	97.0	52.0	2130	24.6	82	europa	vw
395	32.0	4	135.0	84.0	2295	11.6	82	usa	r
396	28.0	4	120.0	79.0	2625	18.6	82	usa	for
397	31.0	4	119.0	82.0	2720	19.4	82	usa	che

In [35]:

cars.info

Out[35]:

```
<bound method DataFrame.info of
er weight acceleration \
0 18.0 8 307.0 130.0 3504 12.0
1 15.0 8 350.0 165.0 3693 11.5
2 18.0 8 318.0 150.0 3436 11.0
3 16.0 8 304.0 150.0 3433 12.0
4 17.0 8 302.0 140.0 3449 10.5
5 15.0 8 429.0 198.0 4341 10.0
6 14.0 8 454.0 220.0 4354 9.0
7 14.0 8 440.0 215.0 4312 8.5
8 14.0 8 455.0 225.0 4425 10.0
9 15.0 8 390.0 190.0 3850 8.5
10 15.0 8 383.0 170.0 3563 10.0
11 14.0 8 340.0 160.0 3609 8.0
12 15.0 8 400.0 150.0 3761 9.5
13 14.0 8 455.0 225.0 3086 10.0
14 24.0 4 113.0 95.0 2372 15.0
15 22.0 6 198.0 95.0 2833 15.5
16 18.0 6 199.0 97.0 2774 15.5
17 21.0 6 200.0 85.0 2587 16.0
18 27.0 4 97.0 88.0 2130 14.5
19 26.0 4 97.0 46.0 1835 20.5
20 25.0 4 110.0 87.0 2672 17.5
21 24.0 4 107.0 90.0 2430 14.5
22 25.0 4 104.0 95.0 2375 17.5
23 26.0 4 121.0 113.0 2234 12.5
24 21.0 6 199.0 90.0 2648 15.0
25 10.0 8 360.0 215.0 4615 14.0
26 10.0 8 307.0 200.0 4376 15.0
27 11.0 8 318.0 210.0 4382 13.5
28 9.0 8 304.0 193.0 4732 18.5
29 27.0 4 97.0 88.0 2130 14.5
30 28.0 4 140.0 90.0 2264 15.5
31 25.0 4 113.0 95.0 2228 14.0
32 25.0 4 98.0 NaN 2046 19.0
33 19.0 6 232.0 100.0 2634 13.0
34 16.0 6 225.0 105.0 3439 15.5
35 17.0 6 250.0 100.0 3329 15.5
36 19.0 6 250.0 88.0 3302 15.5
37 18.0 6 232.0 100.0 3288 15.5
38 14.0 8 350.0 165.0 4209 12.0
39 14.0 8 400.0 175.0 4464 11.5
40 14.0 8 351.0 153.0 4154 13.5
41 14.0 8 318.0 150.0 4096 13.0
42 12.0 8 383.0 180.0 4955 11.5
43 13.0 8 400.0 170.0 4746 12.0
44 13.0 8 400.0 175.0 5140 12.0
45 18.0 6 258.0 110.0 2962 13.5
46 22.0 4 140.0 72.0 2408 19.0
47 19.0 6 250.0 100.0 3282 15.0
48 18.0 6 250.0 88.0 3139 14.5
49 23.0 4 122.0 86.0 2220 14.0
50 28.0 4 116.0 90.0 2123 14.0
51 30.0 4 79.0 70.0 2074 19.5
52 30.0 4 88.0 76.0 2065 14.5
```

53	31.0	4	71.0	65.0	1773	19.0
54	35.0	4	72.0	69.0	1613	18.0
55	27.0	4	97.0	60.0	1834	19.0
56	26.0	4	91.0	70.0	1955	20.5
57	24.0	4	113.0	95.0	2278	15.5
58	25.0	4	97.5	80.0	2126	17.0
59	23.0	4	97.0	54.0	2254	23.5
60	20.0	4	140.0	90.0	2408	19.5
61	21.0	4	122.0	86.0	2226	16.5
62	13.0	8	350.0	165.0	4274	12.0
63	14.0	8	400.0	175.0	4385	12.0
64	15.0	8	318.0	150.0	4135	13.5
65	14.0	8	351.0	153.0	4129	13.0
66	17.0	8	304.0	150.0	3672	11.5
67	11.0	8	429.0	208.0	4633	11.0
68	13.0	8	350.0	155.0	4502	13.5
69	12.0	8	350.0	160.0	4456	13.5
70	13.0	8	400.0	190.0	4422	12.5
71	19.0	3	70.0	97.0	2330	13.5
72	15.0	8	304.0	150.0	3892	12.5
73	13.0	8	307.0	130.0	4098	14.0
74	13.0	8	302.0	140.0	4294	16.0
75	14.0	8	318.0	150.0	4077	14.0
76	18.0	4	121.0	112.0	2933	14.5
77	22.0	4	121.0	76.0	2511	18.0
78	21.0	4	120.0	87.0	2979	19.5
79	26.0	4	96.0	69.0	2189	18.0
80	22.0	4	122.0	86.0	2395	16.0
81	28.0	4	97.0	92.0	2288	17.0
82	23.0	4	120.0	97.0	2506	14.5
83	28.0	4	98.0	80.0	2164	15.0
84	27.0	4	97.0	88.0	2100	16.5
85	13.0	8	350.0	175.0	4100	13.0
86	14.0	8	304.0	150.0	3672	11.5
87	13.0	8	350.0	145.0	3988	13.0
88	14.0	8	302.0	137.0	4042	14.5
89	15.0	8	318.0	150.0	3777	12.5
90	12.0	8	429.0	198.0	4952	11.5
91	13.0	8	400.0	150.0	4464	12.0
92	13.0	8	351.0	158.0	4363	13.0
93	14.0	8	318.0	150.0	4237	14.5
94	13.0	8	440.0	215.0	4735	11.0
95	12.0	8	455.0	225.0	4951	11.0
96	13.0	8	360.0	175.0	3821	11.0
97	18.0	6	225.0	105.0	3121	16.5
98	16.0	6	250.0	100.0	3278	18.0
99	18.0	6	232.0	100.0	2945	16.0
100	18.0	6	250.0	88.0	3021	16.5
101	23.0	6	198.0	95.0	2904	16.0
102	26.0	4	97.0	46.0	1950	21.0
103	11.0	8	400.0	150.0	4997	14.0
104	12.0	8	400.0	167.0	4906	12.5
105	13.0	8	360.0	170.0	4654	13.0
106	12.0	8	350.0	180.0	4499	12.5
107	18.0	6	232.0	100.0	2789	15.0
108	20.0	4	97.0	88.0	2279	19.0
109	21.0	4	140.0	72.0	2401	19.5
110	22.0	4	108.0	94.0	2379	16.5
111	18.0	3	70.0	90.0	2124	13.5
112	19.0	4	122.0	85.0	2310	18.5
113	21.0	6	155.0	107.0	2472	14.0

114	26.0	4	98.0	90.0	2265	15.5
115	15.0	8	350.0	145.0	4082	13.0
116	16.0	8	400.0	230.0	4278	9.5
117	29.0	4	68.0	49.0	1867	19.5
118	24.0	4	116.0	75.0	2158	15.5
119	20.0	4	114.0	91.0	2582	14.0
120	19.0	4	121.0	112.0	2868	15.5
121	15.0	8	318.0	150.0	3399	11.0
122	24.0	4	121.0	110.0	2660	14.0
123	20.0	6	156.0	122.0	2807	13.5
124	11.0	8	350.0	180.0	3664	11.0
125	20.0	6	198.0	95.0	3102	16.5
126	21.0	6	200.0	NaN	2875	17.0
127	19.0	6	232.0	100.0	2901	16.0
128	15.0	6	250.0	100.0	3336	17.0
129	31.0	4	79.0	67.0	1950	19.0
130	26.0	4	122.0	80.0	2451	16.5
131	32.0	4	71.0	65.0	1836	21.0
132	25.0	4	140.0	75.0	2542	17.0
133	16.0	6	250.0	100.0	3781	17.0
134	16.0	6	258.0	110.0	3632	18.0
135	18.0	6	225.0	105.0	3613	16.5
136	16.0	8	302.0	140.0	4141	14.0
137	13.0	8	350.0	150.0	4699	14.5
138	14.0	8	318.0	150.0	4457	13.5
139	14.0	8	302.0	140.0	4638	16.0
140	14.0	8	304.0	150.0	4257	15.5
141	29.0	4	98.0	83.0	2219	16.5
142	26.0	4	79.0	67.0	1963	15.5
143	26.0	4	97.0	78.0	2300	14.5
144	31.0	4	76.0	52.0	1649	16.5
145	32.0	4	83.0	61.0	2003	19.0
146	28.0	4	90.0	75.0	2125	14.5
147	24.0	4	90.0	75.0	2108	15.5
148	26.0	4	116.0	75.0	2246	14.0
149	24.0	4	120.0	97.0	2489	15.0
150	26.0	4	108.0	93.0	2391	15.5
151	31.0	4	79.0	67.0	2000	16.0
152	19.0	6	225.0	95.0	3264	16.0
153	18.0	6	250.0	105.0	3459	16.0
154	15.0	6	250.0	72.0	3432	21.0
155	15.0	6	250.0	72.0	3158	19.5
156	16.0	8	400.0	170.0	4668	11.5
157	15.0	8	350.0	145.0	4440	14.0
158	16.0	8	318.0	150.0	4498	14.5
159	14.0	8	351.0	148.0	4657	13.5
160	17.0	6	231.0	110.0	3907	21.0
161	16.0	6	250.0	105.0	3897	18.5
162	15.0	6	258.0	110.0	3730	19.0
163	18.0	6	225.0	95.0	3785	19.0
164	21.0	6	231.0	110.0	3039	15.0
165	20.0	8	262.0	110.0	3221	13.5
166	13.0	8	302.0	129.0	3169	12.0
167	29.0	4	97.0	75.0	2171	16.0
168	23.0	4	140.0	83.0	2639	17.0
169	20.0	6	232.0	100.0	2914	16.0
170	23.0	4	140.0	78.0	2592	18.5
171	24.0	4	134.0	96.0	2702	13.5
172	25.0	4	90.0	71.0	2223	16.5
173	24.0	4	119.0	97.0	2545	17.0
174	18.0	6	171.0	97.0	2984	14.5

175	29.0	4	90.0	70.0	1937	14.0
176	19.0	6	232.0	90.0	3211	17.0
177	23.0	4	115.0	95.0	2694	15.0
178	23.0	4	120.0	88.0	2957	17.0
179	22.0	4	121.0	98.0	2945	14.5
180	25.0	4	121.0	115.0	2671	13.5
181	33.0	4	91.0	53.0	1795	17.5
182	28.0	4	107.0	86.0	2464	15.5
183	25.0	4	116.0	81.0	2220	16.9
184	25.0	4	140.0	92.0	2572	14.9
185	26.0	4	98.0	79.0	2255	17.7
186	27.0	4	101.0	83.0	2202	15.3
187	17.5	8	305.0	140.0	4215	13.0
188	16.0	8	318.0	150.0	4190	13.0
189	15.5	8	304.0	120.0	3962	13.9
190	14.5	8	351.0	152.0	4215	12.8
191	22.0	6	225.0	100.0	3233	15.4
192	22.0	6	250.0	105.0	3353	14.5
193	24.0	6	200.0	81.0	3012	17.6
194	22.5	6	232.0	90.0	3085	17.6
195	29.0	4	85.0	52.0	2035	22.2
196	24.5	4	98.0	60.0	2164	22.1
197	29.0	4	90.0	70.0	1937	14.2
198	33.0	4	91.0	53.0	1795	17.4
199	20.0	6	225.0	100.0	3651	17.7
200	18.0	6	250.0	78.0	3574	21.0
201	18.5	6	250.0	110.0	3645	16.2
202	17.5	6	258.0	95.0	3193	17.8
203	29.5	4	97.0	71.0	1825	12.2
204	32.0	4	85.0	70.0	1990	17.0
205	28.0	4	97.0	75.0	2155	16.4
206	26.5	4	140.0	72.0	2565	13.6
207	20.0	4	130.0	102.0	3150	15.7
208	13.0	8	318.0	150.0	3940	13.2
209	19.0	4	120.0	88.0	3270	21.9
210	19.0	6	156.0	108.0	2930	15.5
211	16.5	6	168.0	120.0	3820	16.7
212	16.5	8	350.0	180.0	4380	12.1
213	13.0	8	350.0	145.0	4055	12.0
214	13.0	8	302.0	130.0	3870	15.0
215	13.0	8	318.0	150.0	3755	14.0
216	31.5	4	98.0	68.0	2045	18.5
217	30.0	4	111.0	80.0	2155	14.8
218	36.0	4	79.0	58.0	1825	18.6
219	25.5	4	122.0	96.0	2300	15.5
220	33.5	4	85.0	70.0	1945	16.8
221	17.5	8	305.0	145.0	3880	12.5
222	17.0	8	260.0	110.0	4060	19.0
223	15.5	8	318.0	145.0	4140	13.7
224	15.0	8	302.0	130.0	4295	14.9
225	17.5	6	250.0	110.0	3520	16.4
226	20.5	6	231.0	105.0	3425	16.9
227	19.0	6	225.0	100.0	3630	17.7
228	18.5	6	250.0	98.0	3525	19.0
229	16.0	8	400.0	180.0	4220	11.1
230	15.5	8	350.0	170.0	4165	11.4
231	15.5	8	400.0	190.0	4325	12.2
232	16.0	8	351.0	149.0	4335	14.5
233	29.0	4	97.0	78.0	1940	14.5
234	24.5	4	151.0	88.0	2740	16.0
235	26.0	4	97.0	75.0	2265	18.2

236	25.5	4	140.0	89.0	2755	15.8
237	30.5	4	98.0	63.0	2051	17.0
238	33.5	4	98.0	83.0	2075	15.9
239	30.0	4	97.0	67.0	1985	16.4
240	30.5	4	97.0	78.0	2190	14.1
241	22.0	6	146.0	97.0	2815	14.5
242	21.5	4	121.0	110.0	2600	12.8
243	21.5	3	80.0	110.0	2720	13.5
244	43.1	4	90.0	48.0	1985	21.5
245	36.1	4	98.0	66.0	1800	14.4
246	32.8	4	78.0	52.0	1985	19.4
247	39.4	4	85.0	70.0	2070	18.6
248	36.1	4	91.0	60.0	1800	16.4
249	19.9	8	260.0	110.0	3365	15.5
250	19.4	8	318.0	140.0	3735	13.2
251	20.2	8	302.0	139.0	3570	12.8
252	19.2	6	231.0	105.0	3535	19.2
253	20.5	6	200.0	95.0	3155	18.2
254	20.2	6	200.0	85.0	2965	15.8
255	25.1	4	140.0	88.0	2720	15.4
256	20.5	6	225.0	100.0	3430	17.2
257	19.4	6	232.0	90.0	3210	17.2
258	20.6	6	231.0	105.0	3380	15.8
259	20.8	6	200.0	85.0	3070	16.7
260	18.6	6	225.0	110.0	3620	18.7
261	18.1	6	258.0	120.0	3410	15.1
262	19.2	8	305.0	145.0	3425	13.2
263	17.7	6	231.0	165.0	3445	13.4
264	18.1	8	302.0	139.0	3205	11.2
265	17.5	8	318.0	140.0	4080	13.7
266	30.0	4	98.0	68.0	2155	16.5
267	27.5	4	134.0	95.0	2560	14.2
268	27.2	4	119.0	97.0	2300	14.7
269	30.9	4	105.0	75.0	2230	14.5
270	21.1	4	134.0	95.0	2515	14.8
271	23.2	4	156.0	105.0	2745	16.7
272	23.8	4	151.0	85.0	2855	17.6
273	23.9	4	119.0	97.0	2405	14.9
274	20.3	5	131.0	103.0	2830	15.9
275	17.0	6	163.0	125.0	3140	13.6
276	21.6	4	121.0	115.0	2795	15.7
277	16.2	6	163.0	133.0	3410	15.8
278	31.5	4	89.0	71.0	1990	14.9
279	29.5	4	98.0	68.0	2135	16.6
280	21.5	6	231.0	115.0	3245	15.4
281	19.8	6	200.0	85.0	2990	18.2
282	22.3	4	140.0	88.0	2890	17.3
283	20.2	6	232.0	90.0	3265	18.2
284	20.6	6	225.0	110.0	3360	16.6
285	17.0	8	305.0	130.0	3840	15.4
286	17.6	8	302.0	129.0	3725	13.4
287	16.5	8	351.0	138.0	3955	13.2
288	18.2	8	318.0	135.0	3830	15.2
289	16.9	8	350.0	155.0	4360	14.9
290	15.5	8	351.0	142.0	4054	14.3
291	19.2	8	267.0	125.0	3605	15.0
292	18.5	8	360.0	150.0	3940	13.0
293	31.9	4	89.0	71.0	1925	14.0
294	34.1	4	86.0	65.0	1975	15.2
295	35.7	4	98.0	80.0	1915	14.4
296	27.4	4	121.0	80.0	2670	15.0

297	25.4	5	183.0	77.0	3530	20.1
298	23.0	8	350.0	125.0	3900	17.4
299	27.2	4	141.0	71.0	3190	24.8
300	23.9	8	260.0	90.0	3420	22.2
301	34.2	4	105.0	70.0	2200	13.2
302	34.5	4	105.0	70.0	2150	14.9
303	31.8	4	85.0	65.0	2020	19.2
304	37.3	4	91.0	69.0	2130	14.7
305	28.4	4	151.0	90.0	2670	16.0
306	28.8	6	173.0	115.0	2595	11.3
307	26.8	6	173.0	115.0	2700	12.9
308	33.5	4	151.0	90.0	2556	13.2
309	41.5	4	98.0	76.0	2144	14.7
310	38.1	4	89.0	60.0	1968	18.8
311	32.1	4	98.0	70.0	2120	15.5
312	37.2	4	86.0	65.0	2019	16.4
313	28.0	4	151.0	90.0	2678	16.5
314	26.4	4	140.0	88.0	2870	18.1
315	24.3	4	151.0	90.0	3003	20.1
316	19.1	6	225.0	90.0	3381	18.7
317	34.3	4	97.0	78.0	2188	15.8
318	29.8	4	134.0	90.0	2711	15.5
319	31.3	4	120.0	75.0	2542	17.5
320	37.0	4	119.0	92.0	2434	15.0
321	32.2	4	108.0	75.0	2265	15.2
322	46.6	4	86.0	65.0	2110	17.9
323	27.9	4	156.0	105.0	2800	14.4
324	40.8	4	85.0	65.0	2110	19.2
325	44.3	4	90.0	48.0	2085	21.7
326	43.4	4	90.0	48.0	2335	23.7
327	36.4	5	121.0	67.0	2950	19.9
328	30.0	4	146.0	67.0	3250	21.8
329	44.6	4	91.0	67.0	1850	13.8
330	40.9	4	85.0	NaN	1835	17.3
331	33.8	4	97.0	67.0	2145	18.0
332	29.8	4	89.0	62.0	1845	15.3
333	32.7	6	168.0	132.0	2910	11.4
334	23.7	3	70.0	100.0	2420	12.5
335	35.0	4	122.0	88.0	2500	15.1
336	23.6	4	140.0	NaN	2905	14.3
337	32.4	4	107.0	72.0	2290	17.0
338	27.2	4	135.0	84.0	2490	15.7
339	26.6	4	151.0	84.0	2635	16.4
340	25.8	4	156.0	92.0	2620	14.4
341	23.5	6	173.0	110.0	2725	12.6
342	30.0	4	135.0	84.0	2385	12.9
343	39.1	4	79.0	58.0	1755	16.9
344	39.0	4	86.0	64.0	1875	16.4
345	35.1	4	81.0	60.0	1760	16.1
346	32.3	4	97.0	67.0	2065	17.8
347	37.0	4	85.0	65.0	1975	19.4
348	37.7	4	89.0	62.0	2050	17.3
349	34.1	4	91.0	68.0	1985	16.0
350	34.7	4	105.0	63.0	2215	14.9
351	34.4	4	98.0	65.0	2045	16.2
352	29.9	4	98.0	65.0	2380	20.7
353	33.0	4	105.0	74.0	2190	14.2
354	34.5	4	100.0	NaN	2320	15.8
355	33.7	4	107.0	75.0	2210	14.4
356	32.4	4	108.0	75.0	2350	16.8
357	32.9	4	119.0	100.0	2615	14.8

358	31.6	4	120.0	74.0	2635	18.3
359	28.1	4	141.0	80.0	3230	20.4
360	30.7	6	145.0	76.0	3160	19.6
361	25.4	6	168.0	116.0	2900	12.6
362	24.2	6	146.0	120.0	2930	13.8
363	22.4	6	231.0	110.0	3415	15.8
364	26.6	8	350.0	105.0	3725	19.0
365	20.2	6	200.0	88.0	3060	17.1
366	17.6	6	225.0	85.0	3465	16.6
367	28.0	4	112.0	88.0	2605	19.6
368	27.0	4	112.0	88.0	2640	18.6
369	34.0	4	112.0	88.0	2395	18.0
370	31.0	4	112.0	85.0	2575	16.2
371	29.0	4	135.0	84.0	2525	16.0
372	27.0	4	151.0	90.0	2735	18.0
373	24.0	4	140.0	92.0	2865	16.4
374	23.0	4	151.0	NaN	3035	20.5
375	36.0	4	105.0	74.0	1980	15.3
376	37.0	4	91.0	68.0	2025	18.2
377	31.0	4	91.0	68.0	1970	17.6
378	38.0	4	105.0	63.0	2125	14.7
379	36.0	4	98.0	70.0	2125	17.3
380	36.0	4	120.0	88.0	2160	14.5
381	36.0	4	107.0	75.0	2205	14.5
382	34.0	4	108.0	70.0	2245	16.9
383	38.0	4	91.0	67.0	1965	15.0
384	32.0	4	91.0	67.0	1965	15.7
385	38.0	4	91.0	67.0	1995	16.2
386	25.0	6	181.0	110.0	2945	16.4
387	38.0	6	262.0	85.0	3015	17.0
388	26.0	4	156.0	92.0	2585	14.5
389	22.0	6	232.0	112.0	2835	14.7
390	32.0	4	144.0	96.0	2665	13.9
391	36.0	4	135.0	84.0	2370	13.0
392	27.0	4	151.0	90.0	2950	17.3
393	27.0	4	140.0	86.0	2790	15.6
394	44.0	4	97.0	52.0	2130	24.6
395	32.0	4	135.0	84.0	2295	11.6
396	28.0	4	120.0	79.0	2625	18.6
397	31.0	4	119.0	82.0	2720	19.4

	model_year	origin	name
0	70	usa	chevrolet chevelle malibu
1	70	usa	buick skylark 320
2	70	usa	plymouth satellite
3	70	usa	amc rebel sst
4	70	usa	ford torino
5	70	usa	ford galaxie 500
6	70	usa	chevrolet impala
7	70	usa	plymouth fury iii
8	70	usa	pontiac catalina
9	70	usa	amc ambassador dpl
10	70	usa	dodge challenger se
11	70	usa	plymouth 'cuda 340
12	70	usa	chevrolet monte carlo
13	70	usa	buick estate wagon (sw)
14	70	japan	toyota corona mark ii
15	70	usa	plymouth duster
16	70	usa	amc hornet
17	70	usa	ford maverick
18	70	japan	datsum pl510

19	70	europe	volkswagen 1131 deluxe sedan
20	70	europe	peugeot 504
21	70	europe	audi 100 ls
22	70	europe	saab 99e
23	70	europe	bmw 2002
24	70	usa	amc gremlin
25	70	usa	ford f250
26	70	usa	chevy c20
27	70	usa	dodge d200
28	70	usa	hi 1200d
29	71	japan	datsum pl510
30	71	usa	chevrolet vega 2300
31	71	japan	toyota corona
32	71	usa	ford pinto
33	71	usa	amc gremlin
34	71	usa	plymouth satellite custom
35	71	usa	chevrolet chevelle malibu
36	71	usa	ford torino 500
37	71	usa	amc matador
38	71	usa	chevrolet impala
39	71	usa	pontiac catalina brougham
40	71	usa	ford galaxie 500
41	71	usa	plymouth fury iii
42	71	usa	dodge monaco (sw)
43	71	usa	ford country squire (sw)
44	71	usa	pontiac safari (sw)
45	71	usa	amc hornet sportabout (sw)
46	71	usa	chevrolet vega (sw)
47	71	usa	pontiac firebird
48	71	usa	ford mustang
49	71	usa	mercury capri 2000
50	71	europe	opel 1900
51	71	europe	peugeot 304
52	71	europe	fiat 124b
53	71	japan	toyota corolla 1200
54	71	japan	datsum 1200
55	71	europe	volkswagen model 111
56	71	usa	plymouth cricket
57	72	japan	toyota corona hardtop
58	72	usa	dodge colt hardtop
59	72	europe	volkswagen type 3
60	72	usa	chevrolet vega
61	72	usa	ford pinto runabout
62	72	usa	chevrolet impala
63	72	usa	pontiac catalina
64	72	usa	plymouth fury iii
65	72	usa	ford galaxie 500
66	72	usa	amc ambassador sst
67	72	usa	mercury marquis
68	72	usa	buick lesabre custom
69	72	usa	oldsmobile delta 88 royale
70	72	usa	chrysler newport royal
71	72	japan	mazda rx2 coupe
72	72	usa	amc matador (sw)
73	72	usa	chevrolet chevelle concours (sw)
74	72	usa	ford gran torino (sw)
75	72	usa	plymouth satellite custom (sw)
76	72	europe	volvo 145e (sw)
77	72	europe	volkswagen 411 (sw)
78	72	europe	peugeot 504 (sw)
79	72	europe	renault 12 (sw)

80	72	usa	ford pinto (sw)
81	72	japan	datsum 510 (sw)
82	72	japan	toyouta corona mark ii (sw)
83	72	usa	dodge colt (sw)
84	72	japan	toyota corolla 1600 (sw)
85	73	usa	buick century 350
86	73	usa	amc matador
87	73	usa	chevrolet malibu
88	73	usa	ford gran torino
89	73	usa	dodge coronet custom
90	73	usa	mercury marquis brougham
91	73	usa	chevrolet caprice classic
92	73	usa	ford ltd
93	73	usa	plymouth fury gran sedan
94	73	usa	chrysler new yorker brougham
95	73	usa	buick electra 225 custom
96	73	usa	amc ambassador brougham
97	73	usa	plymouth valiant
98	73	usa	chevrolet nova custom
99	73	usa	amc hornet
100	73	usa	ford maverick
101	73	usa	plymouth duster
102	73	europe	volkswagen super beetle
103	73	usa	chevrolet impala
104	73	usa	ford country
105	73	usa	plymouth custom suburb
106	73	usa	oldsmobile vista cruiser
107	73	usa	amc gremlin
108	73	japan	toyota carina
109	73	usa	chevrolet vega
110	73	japan	datsum 610
111	73	japan	maxda rx3
112	73	usa	ford pinto
113	73	usa	mercury capri v6
114	73	europe	fiat 124 sport coupe
115	73	usa	chevrolet monte carlo s
116	73	usa	pontiac grand prix
117	73	europe	fiat 128
118	73	europe	opel manta
119	73	europe	audi 100ls
120	73	europe	volvo 144ea
121	73	usa	dodge dart custom
122	73	europe	saab 99le
123	73	japan	toyota mark ii
124	73	usa	oldsmobile omega
125	74	usa	plymouth duster
126	74	usa	ford maverick
127	74	usa	amc hornet
128	74	usa	chevrolet nova
129	74	japan	datsum b210
130	74	usa	ford pinto
131	74	japan	toyota corolla 1200
132	74	usa	chevrolet vega
133	74	usa	chevrolet chevelle malibu classic
134	74	usa	amc matador
135	74	usa	plymouth satellite sebring
136	74	usa	ford gran torino
137	74	usa	buick century luxus (sw)
138	74	usa	dodge coronet custom (sw)
139	74	usa	ford gran torino (sw)
140	74	usa	amc matador (sw)

141	74	europe	audi fox
142	74	europe	volkswagen dasher
143	74	europe	opel manta
144	74	japan	toyota corona
145	74	japan	datsum 710
146	74	usa	dodge colt
147	74	europe	fiat 128
148	74	europe	fiat 124 tc
149	74	japan	honda civic
150	74	japan	subaru
151	74	europe	fiat x1.9
152	75	usa	plymouth valiant custom
153	75	usa	chevrolet nova
154	75	usa	mercury monarch
155	75	usa	ford maverick
156	75	usa	pontiac catalina
157	75	usa	chevrolet bel air
158	75	usa	plymouth grand fury
159	75	usa	ford ltd
160	75	usa	buick century
161	75	usa	chevroelt chevelle malibu
162	75	usa	amc matador
163	75	usa	plymouth fury
164	75	usa	buick skyhawk
165	75	usa	chevrolet monza 2+2
166	75	usa	ford mustang ii
167	75	japan	toyota corolla
168	75	usa	ford pinto
169	75	usa	amc gremlin
170	75	usa	pontiac astro
171	75	japan	toyota corona
172	75	europe	volkswagen dasher
173	75	japan	datsum 710
174	75	usa	ford pinto
175	75	europe	volkswagen rabbit
176	75	usa	amc pacer
177	75	europe	audi 100ls
178	75	europe	peugeot 504
179	75	europe	volvo 244dl
180	75	europe	saab 99le
181	75	japan	honda civic cvcc
182	76	europe	fiat 131
183	76	europe	opel 1900
184	76	usa	capri ii
185	76	usa	dodge colt
186	76	europe	renault 12tl
187	76	usa	chevrolet chevelle malibu classic
188	76	usa	dodge coronet brougham
189	76	usa	amc matador
190	76	usa	ford gran torino
191	76	usa	plymouth valiant
192	76	usa	chevrolet nova
193	76	usa	ford maverick
194	76	usa	amc hornet
195	76	usa	chevrolet chevette
196	76	usa	chevrolet woody
197	76	europe	vw rabbit
198	76	japan	honda civic
199	76	usa	dodge aspen se
200	76	usa	ford granada ghia
201	76	usa	pontiac ventura sj

202	76	usa	amc pacer d/l
203	76	europa	volkswagen rabbit
204	76	japan	datsum b-210
205	76	japan	toyota corolla
206	76	usa	ford pinto
207	76	europa	volvo 245
208	76	usa	plymouth volare premier v8
209	76	europa	peugeot 504
210	76	japan	toyota mark ii
211	76	europa	mercedes-benz 280s
212	76	usa	cadillac seville
213	76	usa	chevy c10
214	76	usa	ford f108
215	76	usa	dodge d100
216	77	japan	honda accord cvcc
217	77	usa	buick opel isuzu deluxe
218	77	europa	renault 5 gtl
219	77	usa	plymouth arrow gs
220	77	japan	datsum f-10 hatchback
221	77	usa	chevrolet caprice classic
222	77	usa	oldsmobile cutlass supreme
223	77	usa	dodge monaco brougham
224	77	usa	mercury cougar brougham
225	77	usa	chevrolet concours
226	77	usa	buick skylark
227	77	usa	plymouth volare custom
228	77	usa	ford granada
229	77	usa	pontiac grand prix lj
230	77	usa	chevrolet monte carlo landau
231	77	usa	chrysler cordoba
232	77	usa	ford thunderbird
233	77	europa	volkswagen rabbit custom
234	77	usa	pontiac sunbird coupe
235	77	japan	toyota corolla liftback
236	77	usa	ford mustang ii 2+2
237	77	usa	chevrolet chevette
238	77	usa	dodge colt m/m
239	77	japan	subaru dl
240	77	europa	volkswagen dasher
241	77	japan	datsum 810
242	77	europa	bmw 320i
243	77	japan	mazda rx-4
244	78	europa	volkswagen rabbit custom diesel
245	78	usa	ford fiesta
246	78	japan	mazda glc deluxe
247	78	japan	datsum b210 gx
248	78	japan	honda civic cvcc
249	78	usa	oldsmobile cutlass salon brougham
250	78	usa	dodge diplomat
251	78	usa	mercury monarch ghia
252	78	usa	pontiac phoenix lj
253	78	usa	chevrolet malibu
254	78	usa	ford fairmont (auto)
255	78	usa	ford fairmont (man)
256	78	usa	plymouth volare
257	78	usa	amc concord
258	78	usa	buick century special
259	78	usa	mercury zephyr
260	78	usa	dodge aspen
261	78	usa	amc concord d/l
262	78	usa	chevrolet monte carlo landau

263	78	usa	buick regal sport coupe (turbo)
264	78	usa	ford futura
265	78	usa	dodge magnum xe
266	78	usa	chevrolet chevette
267	78	japan	toyota corona
268	78	japan	datsum 510
269	78	usa	dodge omni
270	78	japan	toyota celica gt liftback
271	78	usa	plymouth sapporo
272	78	usa	oldsmobile starfire sx
273	78	japan	datsum 200-sx
274	78	europe	audi 5000
275	78	europe	volvo 264gl
276	78	europe	saab 99gle
277	78	europe	peugeot 604sl
278	78	europe	volkswagen scirocco
279	78	japan	honda accord lx
280	79	usa	pontiac lemans v6
281	79	usa	mercury zephyr 6
282	79	usa	ford fairmont 4
283	79	usa	amc concord dl 6
284	79	usa	dodge aspen 6
285	79	usa	chevrolet caprice classic
286	79	usa	ford ltd landau
287	79	usa	mercury grand marquis
288	79	usa	dodge st. regis
289	79	usa	buick estate wagon (sw)
290	79	usa	ford country squire (sw)
291	79	usa	chevrolet malibu classic (sw)
292	79	usa	chrysler lebaron town @ country (sw)
293	79	europe	vw rabbit custom
294	79	japan	maxda glc deluxe
295	79	usa	dodge colt hatchback custom
296	79	usa	amc spirit dl
297	79	europe	mercedes benz 300d
298	79	usa	cadillac eldorado
299	79	europe	peugeot 504
300	79	usa	oldsmobile cutlass salon brougham
301	79	usa	plymouth horizon
302	79	usa	plymouth horizon tc3
303	79	japan	datsum 210
304	79	europe	fiat strada custom
305	79	usa	buick skylark limited
306	79	usa	chevrolet citation
307	79	usa	oldsmobile omega brougham
308	79	usa	pontiac phoenix
309	80	europe	vw rabbit
310	80	japan	toyota corolla tercel
311	80	usa	chevrolet chevette
312	80	japan	datsum 310
313	80	usa	chevrolet citation
314	80	usa	ford fairmont
315	80	usa	amc concord
316	80	usa	dodge aspen
317	80	europe	audi 4000
318	80	japan	toyota corona liftback
319	80	japan	mazda 626
320	80	japan	datsum 510 hatchback
321	80	japan	toyota corolla
322	80	japan	mazda glc
323	80	usa	dodge colt

324	80	japan	datsum 210
325	80	europe	vw rabbit c (diesel)
326	80	europe	vw dasher (diesel)
327	80	europe	audi 5000s (diesel)
328	80	europe	mercedes-benz 240d
329	80	japan	honda civic 1500 gl
330	80	europe	renault lecar deluxe
331	80	japan	subaru dl
332	80	europe	vokswagen rabbit
333	80	japan	datsum 280-zx
334	80	japan	mazda rx-7 gs
335	80	europe	triumph tr7 coupe
336	80	usa	ford mustang cobra
337	80	japan	honda accord
338	81	usa	plymouth reliant
339	81	usa	buick skylark
340	81	usa	dodge aries wagon (sw)
341	81	usa	chevrolet citation
342	81	usa	plymouth reliant
343	81	japan	toyota starlet
344	81	usa	plymouth champ
345	81	japan	honda civic 1300
346	81	japan	subaru
347	81	japan	datsum 210 mpg
348	81	japan	toyota tercel
349	81	japan	mazda glc 4
350	81	usa	plymouth horizon 4
351	81	usa	ford escort 4w
352	81	usa	ford escort 2h
353	81	europe	volkswagen jetta
354	81	europe	renault 18i
355	81	japan	honda prelude
356	81	japan	toyota corolla
357	81	japan	datsum 200sx
358	81	japan	mazda 626
359	81	europe	peugeot 505s turbo diesel
360	81	europe	volvo diesel
361	81	japan	toyota cressida
362	81	japan	datsum 810 maxima
363	81	usa	buick century
364	81	usa	oldsmobile cutlass ls
365	81	usa	ford granada gl
366	81	usa	chrysler lebaron salon
367	82	usa	chevrolet cavalier
368	82	usa	chevrolet cavalier wagon
369	82	usa	chevrolet cavalier 2-door
370	82	usa	pontiac j2000 se hatchback
371	82	usa	dodge aries se
372	82	usa	pontiac phoenix
373	82	usa	ford fairmont futura
374	82	usa	amc concord dl
375	82	europe	volkswagen rabbit l
376	82	japan	mazda glc custom l
377	82	japan	mazda glc custom
378	82	usa	plymouth horizon miser
379	82	usa	mercury lynx l
380	82	japan	nissan stanza xe
381	82	japan	honda accord
382	82	japan	toyota corolla
383	82	japan	honda civic
384	82	japan	honda civic (auto)

```

385      82    japan      datsun 310 gx
386      82     usa      buick century limited
387      82     usa    oldsmobile cutlass ciera (diesel)
388      82     usa    chrysler lebaron medallion
389      82     usa      ford granada l
390      82    japan      toyota celica gt
391      82     usa    dodge charger 2.2
392      82     usa    chevrolet camaro
393      82     usa    ford mustang gl
394      82  europe      vw pickup
395      82     usa    dodge rampage
396      82     usa    ford ranger
397      82     usa    chevy s-10  >

```

In [36]:

```
cars.describe()
```

Out[36]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year
count	398.000000	398.000000	398.000000	392.000000	398.000000	398.000000	398.000000
mean	23.514573	5.454774	193.425879	104.469388	2970.424623	15.568090	76.01005
std	7.815984	1.701004	104.269838	38.491160	846.841774	2.757689	3.69762
min	9.000000	3.000000	68.000000	46.000000	1613.000000	8.000000	70.00000
25%	17.500000	4.000000	104.250000	75.000000	2223.750000	13.825000	73.00000
50%	23.000000	4.000000	148.500000	93.500000	2803.500000	15.500000	76.00000
75%	29.000000	8.000000	262.000000	126.000000	3608.000000	17.175000	79.00000
max	46.600000	8.000000	455.000000	230.000000	5140.000000	24.800000	82.00000

In [37]:

```
cars.describe(include = 'all')
```

Out[37]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year
count	398.000000	398.000000	398.000000	392.000000	398.000000	398.000000	398.000000
unique	NaN	NaN	NaN	NaN	NaN	NaN	NaN
top	NaN	NaN	NaN	NaN	NaN	NaN	NaN
freq	NaN	NaN	NaN	NaN	NaN	NaN	NaN
mean	23.514573	5.454774	193.425879	104.469388	2970.424623	15.568090	76.010000
std	7.815984	1.701004	104.269838	38.491160	846.841774	2.757689	3.697600
min	9.000000	3.000000	68.000000	46.000000	1613.000000	8.000000	70.000000
25%	17.500000	4.000000	104.250000	75.000000	2223.750000	13.825000	73.000000
50%	23.000000	4.000000	148.500000	93.500000	2803.500000	15.500000	76.000000
75%	29.000000	8.000000	262.000000	126.000000	3608.000000	17.175000	79.000000
max	46.600000	8.000000	455.000000	230.000000	5140.000000	24.800000	82.000000

In [38]:

```
cars.corr()
```

Out[38]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year
mpg	1.000000	-0.775396	-0.804203	-0.778427	-0.831741	0.420289	0.579267
cylinders	-0.775396	1.000000	0.950721	0.842983	0.896017	-0.505419	-0.348746
displacement	-0.804203	0.950721	1.000000	0.897257	0.932824	-0.543684	-0.370164
horsepower	-0.778427	0.842983	0.897257	1.000000	0.864538	-0.689196	-0.416361
weight	-0.831741	0.896017	0.932824	0.864538	1.000000	-0.417457	-0.306564
acceleration	0.420289	-0.505419	-0.543684	-0.689196	-0.417457	1.000000	0.288137
model_year	0.579267	-0.348746	-0.370164	-0.416361	-0.306564	0.288137	1.000000

In [39]:

```
cars.shape
```

Out[39]:

(398, 9)

In [40]:

```
cars.columns
```

Out[40]:

```
Index(['mpg', 'cylinders', 'displacement', 'horsepower', 'weight',  
      'acceleration', 'model_year', 'origin', 'name'],  
      dtype='object')
```

In [41]:

```
cars.nunique()
```

Out[41]:

```
mpg          129  
cylinders      5  
displacement  82  
horsepower    93  
weight       351  
acceleration  95  
model_year    13  
origin        3  
name         305  
dtype: int64
```

In [42]:

```
cars['origin'].value_counts()
```

Out[42]:

```
usa      249  
japan    79  
europe   70  
Name: origin, dtype: int64
```

In [43]:

```
cars.isna().sum()
```

Out[43]:

```
mpg          0  
cylinders     0  
displacement  0  
horsepower    6  
weight        0  
acceleration  0  
model_year    0  
origin        0  
name         0  
dtype: int64
```

In [44]:

cars.sample(3)

Out[44]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
323	27.9	4	156.0	105.0	2800	14.4	80	usa	doc
240	30.5	4	97.0	78.0	2190	14.1	77	europa	volks
134	16.0	6	258.0	110.0	3632	18.0	74	usa	n



In [45]:

cars.displacement[13]

Out[45]:

455.0

In [46]:

cars.loc[0:9,['cylinders','displacement']]

Out[46]:

	cylinders	displacement
0	8	307.0
1	8	350.0
2	8	318.0
3	8	304.0
4	8	302.0
5	8	429.0
6	8	454.0
7	8	440.0
8	8	455.0
9	8	390.0

In [47]:

```
cars.iloc[-11:-1,[1,2]]
```

Out[47]:

	cylinders	displacement
387	6	262.0
388	4	156.0
389	6	232.0
390	4	144.0
391	4	135.0
392	4	151.0
393	4	140.0
394	4	97.0
395	4	135.0
396	4	120.0

In [48]:

```
sub_sample = cars.iloc[:,[1,2]]
```

In [49]:

```
sub_sample
```

Out[49]:

	cylinders	displacement
0	8	307.0
1	8	350.0
2	8	318.0
3	8	304.0
4	8	302.0
5	8	429.0
6	8	454.0
7	8	440.0
8	8	455.0
9	8	390.0
10	8	383.0
11	8	340.0
12	8	400.0
13	8	455.0
14	4	113.0
15	6	198.0
16	6	199.0
17	6	200.0
18	4	97.0
19	4	97.0
20	4	110.0
21	4	107.0
22	4	104.0
23	4	121.0
24	6	199.0
25	8	360.0
26	8	307.0
27	8	318.0
28	8	304.0
29	4	97.0
30	4	140.0
31	4	113.0
32	4	98.0
33	6	232.0

	cylinders	displacement
34	6	225.0
35	6	250.0
36	6	250.0
37	6	232.0
38	8	350.0
39	8	400.0
40	8	351.0
41	8	318.0
42	8	383.0
43	8	400.0
44	8	400.0
45	6	258.0
46	4	140.0
47	6	250.0
48	6	250.0
49	4	122.0
50	4	116.0
51	4	79.0
52	4	88.0
53	4	71.0
54	4	72.0
55	4	97.0
56	4	91.0
57	4	113.0
58	4	97.5
59	4	97.0
60	4	140.0
61	4	122.0
62	8	350.0
63	8	400.0
64	8	318.0
65	8	351.0
66	8	304.0
67	8	429.0
68	8	350.0
69	8	350.0
70	8	400.0
71	3	70.0
72	8	304.0

	cylinders	displacement
73	8	307.0
74	8	302.0
75	8	318.0
76	4	121.0
77	4	121.0
78	4	120.0
79	4	96.0
80	4	122.0
81	4	97.0
82	4	120.0
83	4	98.0
84	4	97.0
85	8	350.0
86	8	304.0
87	8	350.0
88	8	302.0
89	8	318.0
90	8	429.0
91	8	400.0
92	8	351.0
93	8	318.0
94	8	440.0
95	8	455.0
96	8	360.0
97	6	225.0
98	6	250.0
99	6	232.0
100	6	250.0
101	6	198.0
102	4	97.0
103	8	400.0
104	8	400.0
105	8	360.0
106	8	350.0
107	6	232.0
108	4	97.0
109	4	140.0
110	4	108.0
111	3	70.0

	cylinders	displacement
112	4	122.0
113	6	155.0
114	4	98.0
115	8	350.0
116	8	400.0
117	4	68.0
118	4	116.0
119	4	114.0
120	4	121.0
121	8	318.0
122	4	121.0
123	6	156.0
124	8	350.0
125	6	198.0
126	6	200.0
127	6	232.0
128	6	250.0
129	4	79.0
130	4	122.0
131	4	71.0
132	4	140.0
133	6	250.0
134	6	258.0
135	6	225.0
136	8	302.0
137	8	350.0
138	8	318.0
139	8	302.0
140	8	304.0
141	4	98.0
142	4	79.0
143	4	97.0
144	4	76.0
145	4	83.0
146	4	90.0
147	4	90.0
148	4	116.0
149	4	120.0
150	4	108.0

	cylinders	displacement
151	4	79.0
152	6	225.0
153	6	250.0
154	6	250.0
155	6	250.0
156	8	400.0
157	8	350.0
158	8	318.0
159	8	351.0
160	6	231.0
161	6	250.0
162	6	258.0
163	6	225.0
164	6	231.0
165	8	262.0
166	8	302.0
167	4	97.0
168	4	140.0
169	6	232.0
170	4	140.0
171	4	134.0
172	4	90.0
173	4	119.0
174	6	171.0
175	4	90.0
176	6	232.0
177	4	115.0
178	4	120.0
179	4	121.0
180	4	121.0
181	4	91.0
182	4	107.0
183	4	116.0
184	4	140.0
185	4	98.0
186	4	101.0
187	8	305.0
188	8	318.0
189	8	304.0

	cylinders	displacement
190	8	351.0
191	6	225.0
192	6	250.0
193	6	200.0
194	6	232.0
195	4	85.0
196	4	98.0
197	4	90.0
198	4	91.0
199	6	225.0
200	6	250.0
201	6	250.0
202	6	258.0
203	4	97.0
204	4	85.0
205	4	97.0
206	4	140.0
207	4	130.0
208	8	318.0
209	4	120.0
210	6	156.0
211	6	168.0
212	8	350.0
213	8	350.0
214	8	302.0
215	8	318.0
216	4	98.0
217	4	111.0
218	4	79.0
219	4	122.0
220	4	85.0
221	8	305.0
222	8	260.0
223	8	318.0
224	8	302.0
225	6	250.0
226	6	231.0
227	6	225.0
228	6	250.0

	cylinders	displacement
229	8	400.0
230	8	350.0
231	8	400.0
232	8	351.0
233	4	97.0
234	4	151.0
235	4	97.0
236	4	140.0
237	4	98.0
238	4	98.0
239	4	97.0
240	4	97.0
241	6	146.0
242	4	121.0
243	3	80.0
244	4	90.0
245	4	98.0
246	4	78.0
247	4	85.0
248	4	91.0
249	8	260.0
250	8	318.0
251	8	302.0
252	6	231.0
253	6	200.0
254	6	200.0
255	4	140.0
256	6	225.0
257	6	232.0
258	6	231.0
259	6	200.0
260	6	225.0
261	6	258.0
262	8	305.0
263	6	231.0
264	8	302.0
265	8	318.0
266	4	98.0
267	4	134.0

	cylinders	displacement
268	4	119.0
269	4	105.0
270	4	134.0
271	4	156.0
272	4	151.0
273	4	119.0
274	5	131.0
275	6	163.0
276	4	121.0
277	6	163.0
278	4	89.0
279	4	98.0
280	6	231.0
281	6	200.0
282	4	140.0
283	6	232.0
284	6	225.0
285	8	305.0
286	8	302.0
287	8	351.0
288	8	318.0
289	8	350.0
290	8	351.0
291	8	267.0
292	8	360.0
293	4	89.0
294	4	86.0
295	4	98.0
296	4	121.0
297	5	183.0
298	8	350.0
299	4	141.0
300	8	260.0
301	4	105.0
302	4	105.0
303	4	85.0
304	4	91.0
305	4	151.0
306	6	173.0

	cylinders	displacement
307	6	173.0
308	4	151.0
309	4	98.0
310	4	89.0
311	4	98.0
312	4	86.0
313	4	151.0
314	4	140.0
315	4	151.0
316	6	225.0
317	4	97.0
318	4	134.0
319	4	120.0
320	4	119.0
321	4	108.0
322	4	86.0
323	4	156.0
324	4	85.0
325	4	90.0
326	4	90.0
327	5	121.0
328	4	146.0
329	4	91.0
330	4	85.0
331	4	97.0
332	4	89.0
333	6	168.0
334	3	70.0
335	4	122.0
336	4	140.0
337	4	107.0
338	4	135.0
339	4	151.0
340	4	156.0
341	6	173.0
342	4	135.0
343	4	79.0
344	4	86.0
345	4	81.0

	cylinders	displacement
346	4	97.0
347	4	85.0
348	4	89.0
349	4	91.0
350	4	105.0
351	4	98.0
352	4	98.0
353	4	105.0
354	4	100.0
355	4	107.0
356	4	108.0
357	4	119.0
358	4	120.0
359	4	141.0
360	6	145.0
361	6	168.0
362	6	146.0
363	6	231.0
364	8	350.0
365	6	200.0
366	6	225.0
367	4	112.0
368	4	112.0
369	4	112.0
370	4	112.0
371	4	135.0
372	4	151.0
373	4	140.0
374	4	151.0
375	4	105.0
376	4	91.0
377	4	91.0
378	4	105.0
379	4	98.0
380	4	120.0
381	4	107.0
382	4	108.0
383	4	91.0
384	4	91.0

	cylinders	displacement
385	4	91.0
386	6	181.0
387	6	262.0
388	4	156.0
389	6	232.0
390	4	144.0
391	4	135.0
392	4	151.0
393	4	140.0
394	4	97.0
395	4	135.0
396	4	120.0
397	4	119.0

In [50]:

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cars
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Out[50]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
0	18.0	8	307.0	130.0	3504	12.0	70	usa	c
1	15.0	8	350.0	165.0	3693	11.5	70	usa	sky
2	18.0	8	318.0	150.0	3436	11.0	70	usa	p
3	16.0	8	304.0	150.0	3433	12.0	70	usa	ar
4	17.0	8	302.0	140.0	3449	10.5	70	usa	fo
5	15.0	8	429.0	198.0	4341	10.0	70	usa	forc
6	14.0	8	454.0	220.0	4354	9.0	70	usa	c
7	14.0	8	440.0	215.0	4312	8.5	70	usa	p
8	14.0	8	455.0	225.0	4425	10.0	70	usa	
9	15.0	8	390.0	190.0	3850	8.5	70	usa	amb
10	15.0	8	383.0	170.0	3563	10.0	70	usa	ch
11	14.0	8	340.0	160.0	3609	8.0	70	usa	p 'c
12	15.0	8	400.0	150.0	3761	9.5	70	usa	c mor
13	14.0	8	455.0	225.0	3086	10.0	70	usa	buic waç
14	24.0	4	113.0	95.0	2372	15.0	70	japan	coro
15	22.0	6	198.0	95.0	2833	15.5	70	usa	p
16	18.0	6	199.0	97.0	2774	15.5	70	usa	am
17	21.0	6	200.0	85.0	2587	16.0	70	usa	n
18	27.0	4	97.0	88.0	2130	14.5	70	japan	
19	26.0	4	97.0	46.0	1835	20.5	70	europa	volk 113
20	25.0	4	110.0	87.0	2672	17.5	70	europa	peuç
21	24.0	4	107.0	90.0	2430	14.5	70	europa	aur

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
22	25.0	4	104.0	95.0	2375	17.5	70	europe	s
23	26.0	4	121.0	113.0	2234	12.5	70	europe	bn
24	21.0	6	199.0	90.0	2648	15.0	70	usa	amc
25	10.0	8	360.0	215.0	4615	14.0	70	usa	f
26	10.0	8	307.0	200.0	4376	15.0	70	usa	ch
27	11.0	8	318.0	210.0	4382	13.5	70	usa	dod
28	9.0	8	304.0	193.0	4732	18.5	70	usa	t
29	27.0	4	97.0	88.0	2130	14.5	71	japan	
30	28.0	4	140.0	90.0	2264	15.5	71	usa	c ve
31	25.0	4	113.0	95.0	2228	14.0	71	japan	
32	25.0	4	98.0	NaN	2046	19.0	71	usa	fc
33	19.0	6	232.0	100.0	2634	13.0	71	usa	amc
34	16.0	6	225.0	105.0	3439	15.5	71	usa	p
35	17.0	6	250.0	100.0	3329	15.5	71	usa	c
36	19.0	6	250.0	88.0	3302	15.5	71	usa	fo
37	18.0	6	232.0	100.0	3288	15.5	71	usa	
38	14.0	8	350.0	165.0	4209	12.0	71	usa	c
39	14.0	8	400.0	175.0	4464	11.5	71	usa	br
40	14.0	8	351.0	153.0	4154	13.5	71	usa	forc
41	14.0	8	318.0	150.0	4096	13.0	71	usa	p
42	12.0	8	383.0	180.0	4955	11.5	71	usa	
43	13.0	8	400.0	170.0	4746	12.0	71	usa	ford sqi
44	13.0	8	400.0	175.0	5140	12.0	71	usa	sa
45	18.0	6	258.0	110.0	2962	13.5	71	usa	am sp
46	22.0	4	140.0	72.0	2408	19.0	71	usa	c ve
47	19.0	6	250.0	100.0	3282	15.0	71	usa	

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
48	18.0	6	250.0	88.0	3139	14.5	71	usa	r
49	23.0	4	122.0	86.0	2220	14.0	71	usa	ca
50	28.0	4	116.0	90.0	2123	14.0	71	europa	or
51	30.0	4	79.0	70.0	2074	19.5	71	europa	peug
52	30.0	4	88.0	76.0	2065	14.5	71	europa	f
53	31.0	4	71.0	65.0	1773	19.0	71	japan	coro
54	35.0	4	72.0	69.0	1613	18.0	71	japan	data
55	27.0	4	97.0	60.0	1834	19.0	71	europa	volk mi
56	26.0	4	91.0	70.0	1955	20.5	71	usa	p
57	24.0	4	113.0	95.0	2278	15.5	72	japan	
58	25.0	4	97.5	80.0	2126	17.0	72	usa	do
59	23.0	4	97.0	54.0	2254	23.5	72	europa	volk
60	20.0	4	140.0	90.0	2408	19.5	72	usa	c
61	21.0	4	122.0	86.0	2226	16.5	72	usa	fc r
62	13.0	8	350.0	165.0	4274	12.0	72	usa	c
63	14.0	8	400.0	175.0	4385	12.0	72	usa	
64	15.0	8	318.0	150.0	4135	13.5	72	usa	p
65	14.0	8	351.0	153.0	4129	13.0	72	usa	ford
66	17.0	8	304.0	150.0	3672	11.5	72	usa	amb
67	11.0	8	429.0	208.0	4633	11.0	72	usa	
68	13.0	8	350.0	155.0	4502	13.5	72	usa	
69	12.0	8	350.0	160.0	4456	13.5	72	usa	olc
70	13.0	8	400.0	190.0	4422	12.5	72	usa	
71	19.0	3	70.0	97.0	2330	13.5	72	japan	ma

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin
72	15.0	8	304.0	150.0	3892	12.5	72	usa
73	13.0	8	307.0	130.0	4098	14.0	72	usa
74	13.0	8	302.0	140.0	4294	16.0	72	usa
75	14.0	8	318.0	150.0	4077	14.0	72	usa
76	18.0	4	121.0	112.0	2933	14.5	72	europa
77	22.0	4	121.0	76.0	2511	18.0	72	europa
78	21.0	4	120.0	87.0	2979	19.5	72	europa
79	26.0	4	96.0	69.0	2189	18.0	72	europa
80	22.0	4	122.0	86.0	2395	16.0	72	usa
81	28.0	4	97.0	92.0	2288	17.0	72	japan
82	23.0	4	120.0	97.0	2506	14.5	72	japan
83	28.0	4	98.0	80.0	2164	15.0	72	usa
84	27.0	4	97.0	88.0	2100	16.5	72	japan
85	13.0	8	350.0	175.0	4100	13.0	73	usa
86	14.0	8	304.0	150.0	3672	11.5	73	usa
87	13.0	8	350.0	145.0	3988	13.0	73	usa
88	14.0	8	302.0	137.0	4042	14.5	73	usa
89	15.0	8	318.0	150.0	3777	12.5	73	usa
90	12.0	8	429.0	198.0	4952	11.5	73	usa
91	13.0	8	400.0	150.0	4464	12.0	73	usa
92	13.0	8	351.0	158.0	4363	13.0	73	usa
93	14.0	8	318.0	150.0	4237	14.5	73	usa

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
94	13.0	8	440.0	215.0	4735	11.0	73	usa	new br
95	12.0	8	455.0	225.0	4951	11.0	73	usa	ele
96	13.0	8	360.0	175.0	3821	11.0	73	usa	amb br
97	18.0	6	225.0	105.0	3121	16.5	73	usa	p
98	16.0	6	250.0	100.0	3278	18.0	73	usa	c
99	18.0	6	232.0	100.0	2945	16.0	73	usa	am
100	18.0	6	250.0	88.0	3021	16.5	73	usa	n
101	23.0	6	198.0	95.0	2904	16.0	73	usa	p
102	26.0	4	97.0	46.0	1950	21.0	73	europa	volk sup
103	11.0	8	400.0	150.0	4997	14.0	73	usa	c
104	12.0	8	400.0	167.0	4906	12.5	73	usa	ford
105	13.0	8	360.0	170.0	4654	13.0	73	usa	p
106	12.0	8	350.0	180.0	4499	12.5	73	usa	old vista
107	18.0	6	232.0	100.0	2789	15.0	73	usa	amc
108	20.0	4	97.0	88.0	2279	19.0	73	japan	
109	21.0	4	140.0	72.0	2401	19.5	73	usa	c
110	22.0	4	108.0	94.0	2379	16.5	73	japan	dat
111	18.0	3	70.0	90.0	2124	13.5	73	japan	ma
112	19.0	4	122.0	85.0	2310	18.5	73	usa	fc
113	21.0	6	155.0	107.0	2472	14.0	73	usa	
114	26.0	4	98.0	90.0	2265	15.5	73	europa	spo
115	15.0	8	350.0	145.0	4082	13.0	73	usa	c mor
116	16.0	8	400.0	230.0	4278	9.5	73	usa	gr
117	29.0	4	68.0	49.0	1867	19.5	73	europa	
118	24.0	4	116.0	75.0	2158	15.5	73	europa	ope
119	20.0	4	114.0	91.0	2582	14.0	73	europa	au

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
120	19.0	4	121.0	112.0	2868	15.5	73	europa	volvo
121	15.0	8	318.0	150.0	3399	11.0	73	usa	do
122	24.0	4	121.0	110.0	2660	14.0	73	europa	sa
123	20.0	6	156.0	122.0	2807	13.5	73	japan	toyota
124	11.0	8	350.0	180.0	3664	11.0	73	usa	oldsmobile
125	20.0	6	198.0	95.0	3102	16.5	74	usa	pontiac
126	21.0	6	200.0	NaN	2875	17.0	74	usa	nissan
127	19.0	6	232.0	100.0	2901	16.0	74	usa	american
128	15.0	6	250.0	100.0	3336	17.0	74	usa	chevrolet
129	31.0	4	79.0	67.0	1950	19.0	74	japan	datsun
130	26.0	4	122.0	80.0	2451	16.5	74	usa	ford
131	32.0	4	71.0	65.0	1836	21.0	74	japan	corolla
132	25.0	4	140.0	75.0	2542	17.0	74	usa	chevrolet
133	16.0	6	250.0	100.0	3781	17.0	74	usa	chevrolet
134	16.0	6	258.0	110.0	3632	18.0	74	usa	
135	18.0	6	225.0	105.0	3613	16.5	74	usa	pontiac
136	16.0	8	302.0	140.0	4141	14.0	74	usa	ford
137	13.0	8	350.0	150.0	4699	14.5	74	usa	lincoln
138	14.0	8	318.0	150.0	4457	13.5	74	usa	custome
139	14.0	8	302.0	140.0	4638	16.0	74	usa	ford
140	14.0	8	304.0	150.0	4257	15.5	74	usa	
141	29.0	4	98.0	83.0	2219	16.5	74	europa	
142	26.0	4	79.0	67.0	1963	15.5	74	europa	volkswagen
143	26.0	4	97.0	78.0	2300	14.5	74	europa	opel
144	31.0	4	76.0	52.0	1649	16.5	74	japan	
145	32.0	4	83.0	61.0	2003	19.0	74	japan	datsun

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
146	28.0	4	90.0	75.0	2125	14.5	74	usa	do
147	24.0	4	90.0	75.0	2108	15.5	74	europa	
148	26.0	4	116.0	75.0	2246	14.0	74	europa	fi
149	24.0	4	120.0	97.0	2489	15.0	74	japan	hor
150	26.0	4	108.0	93.0	2391	15.5	74	japan	
151	31.0	4	79.0	67.0	2000	16.0	74	europa	
152	19.0	6	225.0	95.0	3264	16.0	75	usa	p
153	18.0	6	250.0	105.0	3459	16.0	75	usa	c
154	15.0	6	250.0	72.0	3432	21.0	75	usa	r
155	15.0	6	250.0	72.0	3158	19.5	75	usa	n
156	16.0	8	400.0	170.0	4668	11.5	75	usa	
157	15.0	8	350.0	145.0	4440	14.0	75	usa	c
158	16.0	8	318.0	150.0	4498	14.5	75	usa	p gr
159	14.0	8	351.0	148.0	4657	13.5	75	usa	
160	17.0	6	231.0	110.0	3907	21.0	75	usa	
161	16.0	6	250.0	105.0	3897	18.5	75	usa	c
162	15.0	6	258.0	110.0	3730	19.0	75	usa	
163	18.0	6	225.0	95.0	3785	19.0	75	usa	p
164	21.0	6	231.0	110.0	3039	15.0	75	usa	ε
165	20.0	8	262.0	110.0	3221	13.5	75	usa	c mo
166	13.0	8	302.0	129.0	3169	12.0	75	usa	mi
167	29.0	4	97.0	75.0	2171	16.0	75	japan	
168	23.0	4	140.0	83.0	2639	17.0	75	usa	fc
169	20.0	6	232.0	100.0	2914	16.0	75	usa	amc
170	23.0	4	140.0	78.0	2592	18.5	75	usa	
171	24.0	4	134.0	96.0	2702	13.5	75	japan	
172	25.0	4	90.0	71.0	2223	16.5	75	europa	volk
173	24.0	4	119.0	97.0	2545	17.0	75	japan	dat

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
174	18.0	6	171.0	97.0	2984	14.5	75	usa	fc
175	29.0	4	90.0	70.0	1937	14.0	75	europa	volk
176	19.0	6	232.0	90.0	3211	17.0	75	usa	an
177	23.0	4	115.0	95.0	2694	15.0	75	europa	au
178	23.0	4	120.0	88.0	2957	17.0	75	europa	peuq
179	22.0	4	121.0	98.0	2945	14.5	75	europa	vol
180	25.0	4	121.0	115.0	2671	13.5	75	europa	sa
181	33.0	4	91.0	53.0	1795	17.5	75	japan	hor
182	28.0	4	107.0	86.0	2464	15.5	76	europa	
183	25.0	4	116.0	81.0	2220	16.9	76	europa	o
184	25.0	4	140.0	92.0	2572	14.9	76	usa	
185	26.0	4	98.0	79.0	2255	17.7	76	usa	do
186	27.0	4	101.0	83.0	2202	15.3	76	europa	ren
187	17.5	8	305.0	140.0	4215	13.0	76	usa	c
188	16.0	8	318.0	150.0	4190	13.0	76	usa	br
189	15.5	8	304.0	120.0	3962	13.9	76	usa	
190	14.5	8	351.0	152.0	4215	12.8	76	usa	fi
191	22.0	6	225.0	100.0	3233	15.4	76	usa	p
192	22.0	6	250.0	105.0	3353	14.5	76	usa	c
193	24.0	6	200.0	81.0	3012	17.6	76	usa	n
194	22.5	6	232.0	90.0	3085	17.6	76	usa	am
195	29.0	4	85.0	52.0	2035	22.2	76	usa	c
196	24.5	4	98.0	60.0	2164	22.1	76	usa	c
197	29.0	4	90.0	70.0	1937	14.2	76	europa	v
198	33.0	4	91.0	53.0	1795	17.4	76	japan	hor
199	20.0	6	225.0	100.0	3651	17.7	76	usa	a
200	18.0	6	250.0	78.0	3574	21.0	76	usa	!
201	18.5	6	250.0	110.0	3645	16.2	76	usa	ve

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
202	17.5	6	258.0	95.0	3193	17.8	76	usa	amc
203	29.5	4	97.0	71.0	1825	12.2	76	europa	volkswagen
204	32.0	4	85.0	70.0	1990	17.0	76	japan	datsun
205	28.0	4	97.0	75.0	2155	16.4	76	japan	toyota
206	26.5	4	140.0	72.0	2565	13.6	76	usa	ford
207	20.0	4	130.0	102.0	3150	15.7	76	europa	volkswagen
208	13.0	8	318.0	150.0	3940	13.2	76	usa	plymouth
209	19.0	4	120.0	88.0	3270	21.9	76	europa	peugeot
210	19.0	6	156.0	108.0	2930	15.5	76	japan	toyota
211	16.5	6	168.0	120.0	3820	16.7	76	europa	mercedes
212	16.5	8	350.0	180.0	4380	12.1	76	usa	chrysler
213	13.0	8	350.0	145.0	4055	12.0	76	usa	chrysler
214	13.0	8	302.0	130.0	3870	15.0	76	usa	ford
215	13.0	8	318.0	150.0	3755	14.0	76	usa	dodge
216	31.5	4	98.0	68.0	2045	18.5	77	japan	acura
217	30.0	4	111.0	80.0	2155	14.8	77	usa	buick
218	36.0	4	79.0	58.0	1825	18.6	77	europa	renault
219	25.5	4	122.0	96.0	2300	15.5	77	usa	plymouth
220	33.5	4	85.0	70.0	1945	16.8	77	japan	datsun
221	17.5	8	305.0	145.0	3880	12.5	77	usa	chrysler
222	17.0	8	260.0	110.0	4060	19.0	77	usa	oldsmobile
223	15.5	8	318.0	145.0	4140	13.7	77	usa	briggs
224	15.0	8	302.0	130.0	4295	14.9	77	usa	briggs
225	17.5	6	250.0	110.0	3520	16.4	77	usa	chevrolet
226	20.5	6	231.0	105.0	3425	16.9	77	usa	chevrolet

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
227	19.0	6	225.0	100.0	3630	17.7	77	usa	p
228	18.5	6	250.0	98.0	3525	19.0	77	usa	
229	16.0	8	400.0	180.0	4220	11.1	77	usa	grai
230	15.5	8	350.0	170.0	4165	11.4	77	usa	c mor
231	15.5	8	400.0	190.0	4325	12.2	77	usa	
232	16.0	8	351.0	149.0	4335	14.5	77	usa	thu
233	29.0	4	97.0	78.0	1940	14.5	77	europa	volk
234	24.5	4	151.0	88.0	2740	16.0	77	usa	
235	26.0	4	97.0	75.0	2265	18.2	77	japan	
236	25.5	4	140.0	89.0	2755	15.8	77	usa	mi
237	30.5	4	98.0	63.0	2051	17.0	77	usa	c (
238	33.5	4	98.0	83.0	2075	15.9	77	usa	do
239	30.0	4	97.0	67.0	1985	16.4	77	japan	s
240	30.5	4	97.0	78.0	2190	14.1	77	europa	volk
241	22.0	6	146.0	97.0	2815	14.5	77	japan	dat
242	21.5	4	121.0	110.0	2600	12.8	77	europa	bi
243	21.5	3	80.0	110.0	2720	13.5	77	japan	ma
244	43.1	4	90.0	48.0	1985	21.5	78	europa	volk
245	36.1	4	98.0	66.0	1800	14.4	78	usa	fo
246	32.8	4	78.0	52.0	1985	19.4	78	japan	mi
247	39.4	4	85.0	70.0	2070	18.6	78	japan	dat
248	36.1	4	91.0	60.0	1800	16.4	78	japan	hor
249	19.9	8	260.0	110.0	3365	15.5	78	usa	olc br

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
250	19.4	8	318.0	140.0	3735	13.2	78	usa	(
251	20.2	8	302.0	139.0	3570	12.8	78	usa	r
252	19.2	6	231.0	105.0	3535	19.2	78	usa	p
253	20.5	6	200.0	95.0	3155	18.2	78	usa	c
254	20.2	6	200.0	85.0	2965	15.8	78	usa	
255	25.1	4	140.0	88.0	2720	15.4	78	usa	
256	20.5	6	225.0	100.0	3430	17.2	78	usa	p
257	19.4	6	232.0	90.0	3210	17.2	78	usa	
258	20.6	6	231.0	105.0	3380	15.8	78	usa	
259	20.8	6	200.0	85.0	3070	16.7	78	usa	
260	18.6	6	225.0	110.0	3620	18.7	78	usa	
261	18.1	6	258.0	120.0	3410	15.1	78	usa	cor
262	19.2	8	305.0	145.0	3425	13.2	78	usa	c mor
263	17.7	6	231.0	165.0	3445	13.4	78	usa	bui spo
264	18.1	8	302.0	139.0	3205	11.2	78	usa	foi
265	17.5	8	318.0	140.0	4080	13.7	78	usa	maç
266	30.0	4	98.0	68.0	2155	16.5	78	usa	c (
267	27.5	4	134.0	95.0	2560	14.2	78	japan	
268	27.2	4	119.0	97.0	2300	14.7	78	japan	dat
269	30.9	4	105.0	75.0	2230	14.5	78	usa	dod
270	21.1	4	134.0	95.0	2515	14.8	78	japan	toyo g
271	23.2	4	156.0	105.0	2745	16.7	78	usa	p
272	23.8	4	151.0	85.0	2855	17.6	78	usa	olc st
273	23.9	4	119.0	97.0	2405	14.9	78	japan	date

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
274	20.3	5	131.0	103.0	2830	15.9	78	europa	au
275	17.0	6	163.0	125.0	3140	13.6	78	europa	volk
276	21.6	4	121.0	115.0	2795	15.7	78	europa	sac
277	16.2	6	163.0	133.0	3410	15.8	78	europa	
278	31.5	4	89.0	71.0	1990	14.9	78	europa	volk
279	29.5	4	98.0	68.0	2135	16.6	78	japan	e
280	21.5	6	231.0	115.0	3245	15.4	79	usa	lei
281	19.8	6	200.0	85.0	2990	18.2	79	usa	z
282	22.3	4	140.0	88.0	2890	17.3	79	usa	fa
283	20.2	6	232.0	90.0	3265	18.2	79	usa	conc
284	20.6	6	225.0	110.0	3360	16.6	79	usa	
285	17.0	8	305.0	130.0	3840	15.4	79	usa	c
286	17.6	8	302.0	129.0	3725	13.4	79	usa	
287	16.5	8	351.0	138.0	3955	13.2	79	usa	
288	18.2	8	318.0	135.0	3830	15.2	79	usa	d
289	16.9	8	350.0	155.0	4360	14.9	79	usa	buic waq
290	15.5	8	351.0	142.0	4054	14.3	79	usa	ford sqi
291	19.2	8	267.0	125.0	3605	15.0	79	usa	c clas
292	18.5	8	360.0	150.0	3940	13.0	79	usa	cour
293	31.9	4	89.0	71.0	1925	14.0	79	europa	v
294	34.1	4	86.0	65.0	1975	15.2	79	japan	mi
295	35.7	4	98.0	80.0	1915	14.4	79	usa	do ha
296	27.4	4	121.0	80.0	2670	15.0	79	usa	amc
297	25.4	5	183.0	77.0	3530	20.1	79	europa	m be

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin
298	23.0	8	350.0	125.0	3900	17.4	79	usa
299	27.2	4	141.0	71.0	3190	24.8	79	europa
300	23.9	8	260.0	90.0	3420	22.2	79	usa
301	34.2	4	105.0	70.0	2200	13.2	79	usa
302	34.5	4	105.0	70.0	2150	14.9	79	usa
303	31.8	4	85.0	65.0	2020	19.2	79	japan
304	37.3	4	91.0	69.0	2130	14.7	79	europa
305	28.4	4	151.0	90.0	2670	16.0	79	usa
306	28.8	6	173.0	115.0	2595	11.3	79	usa
307	26.8	6	173.0	115.0	2700	12.9	79	usa
308	33.5	4	151.0	90.0	2556	13.2	79	usa
309	41.5	4	98.0	76.0	2144	14.7	80	europa
310	38.1	4	89.0	60.0	1968	18.8	80	japan
311	32.1	4	98.0	70.0	2120	15.5	80	usa
312	37.2	4	86.0	65.0	2019	16.4	80	japan
313	28.0	4	151.0	90.0	2678	16.5	80	usa
314	26.4	4	140.0	88.0	2870	18.1	80	usa
315	24.3	4	151.0	90.0	3003	20.1	80	usa
316	19.1	6	225.0	90.0	3381	18.7	80	usa
317	34.3	4	97.0	78.0	2188	15.8	80	europa
318	29.8	4	134.0	90.0	2711	15.5	80	japan
319	31.3	4	120.0	75.0	2542	17.5	80	japan
320	37.0	4	119.0	92.0	2434	15.0	80	japan
321	32.2	4	108.0	75.0	2265	15.2	80	japan
322	46.6	4	86.0	65.0	2110	17.9	80	japan
323	27.9	4	156.0	105.0	2800	14.4	80	usa

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
324	40.8	4	85.0	65.0	2110	19.2	80	japan	dat
325	44.3	4	90.0	48.0	2085	21.7	80	europa	vw
326	43.4	4	90.0	48.0	2335	23.7	80	europa	vw
327	36.4	5	121.0	67.0	2950	19.9	80	europa	audi
328	30.0	4	146.0	67.0	3250	21.8	80	europa	mercedes
329	44.6	4	91.0	67.0	1850	13.8	80	japan	honda
330	40.9	4	85.0	NaN	1835	17.3	80	europa	renault
331	33.8	4	97.0	67.0	2145	18.0	80	japan	subaru
332	29.8	4	89.0	62.0	1845	15.3	80	europa	volkswagen
333	32.7	6	168.0	132.0	2910	11.4	80	japan	datsun
334	23.7	3	70.0	100.0	2420	12.5	80	japan	mazda
335	35.0	4	122.0	88.0	2500	15.1	80	europa	triumph
336	23.6	4	140.0	NaN	2905	14.3	80	usa	ford
337	32.4	4	107.0	72.0	2290	17.0	80	japan	
338	27.2	4	135.0	84.0	2490	15.7	81	usa	pontiac
339	26.6	4	151.0	84.0	2635	16.4	81	usa	
340	25.8	4	156.0	92.0	2620	14.4	81	usa	dodge
341	23.5	6	173.0	110.0	2725	12.6	81	usa	chrysler
342	30.0	4	135.0	84.0	2385	12.9	81	usa	pontiac
343	39.1	4	79.0	58.0	1755	16.9	81	japan	
344	39.0	4	86.0	64.0	1875	16.4	81	usa	pontiac
345	35.1	4	81.0	60.0	1760	16.1	81	japan	honda
346	32.3	4	97.0	67.0	2065	17.8	81	japan	
347	37.0	4	85.0	65.0	1975	19.4	81	japan	datsun
348	37.7	4	89.0	62.0	2050	17.3	81	japan	toyota
349	34.1	4	91.0	68.0	1985	16.0	81	japan	mazda

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
350	34.7	4	105.0	63.0	2215	14.9	81	usa	p
351	34.4	4	98.0	65.0	2045	16.2	81	usa	for
352	29.9	4	98.0	65.0	2380	20.7	81	usa	for
353	33.0	4	105.0	74.0	2190	14.2	81	europe	volk
354	34.5	4	100.0	NaN	2320	15.8	81	europe	rei
355	33.7	4	107.0	75.0	2210	14.4	81	japan	
356	32.4	4	108.0	75.0	2350	16.8	81	japan	
357	32.9	4	119.0	100.0	2615	14.8	81	japan	
358	31.6	4	120.0	74.0	2635	18.3	81	japan	ma
359	28.1	4	141.0	80.0	3230	20.4	81	europe	50
360	30.7	6	145.0	76.0	3160	19.6	81	europe	volv
361	25.4	6	168.0	116.0	2900	12.6	81	japan	,
362	24.2	6	146.0	120.0	2930	13.8	81	japan	dat
363	22.4	6	231.0	110.0	3415	15.8	81	usa	
364	26.6	8	350.0	105.0	3725	19.0	81	usa	olc
365	20.2	6	200.0	88.0	3060	17.1	81	usa	græ
366	17.6	6	225.0	85.0	3465	16.6	81	usa	
367	28.0	4	112.0	88.0	2605	19.6	82	usa	c
368	27.0	4	112.0	88.0	2640	18.6	82	usa	c
369	34.0	4	112.0	88.0	2395	18.0	82	usa	c
370	31.0	4	112.0	85.0	2575	16.2	82	usa	j
371	29.0	4	135.0	84.0	2525	16.0	82	usa	ha
372	27.0	4	151.0	90.0	2735	18.0	82	usa	dod
373	24.0	4	140.0	92.0	2865	16.4	82	usa	

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	
374	23.0	4	151.0	NaN	3035	20.5	82	usa	co
375	36.0	4	105.0	74.0	1980	15.3	82	europa	volk
376	37.0	4	91.0	68.0	2025	18.2	82	japan	mi
377	31.0	4	91.0	68.0	1970	17.6	82	japan	mi
378	38.0	4	105.0	63.0	2125	14.7	82	usa	p
379	36.0	4	98.0	70.0	2125	17.3	82	usa	
380	36.0	4	120.0	88.0	2160	14.5	82	japan	st
381	36.0	4	107.0	75.0	2205	14.5	82	japan	
382	34.0	4	108.0	70.0	2245	16.9	82	japan	
383	38.0	4	91.0	67.0	1965	15.0	82	japan	hor
384	32.0	4	91.0	67.0	1965	15.7	82	japan	hor
385	38.0	4	91.0	67.0	1995	16.2	82	japan	dat
386	25.0	6	181.0	110.0	2945	16.4	82	usa	
387	38.0	6	262.0	85.0	3015	17.0	82	usa	old cutle
388	26.0	4	156.0	92.0	2585	14.5	82	usa	m
389	22.0	6	232.0	112.0	2835	14.7	82	usa	g
390	32.0	4	144.0	96.0	2665	13.9	82	japan	toyo
391	36.0	4	135.0	84.0	2370	13.0	82	usa	cha
392	27.0	4	151.0	90.0	2950	17.3	82	usa	c
393	27.0	4	140.0	86.0	2790	15.6	82	usa	mu
394	44.0	4	97.0	52.0	2130	24.6	82	europa	vw
395	32.0	4	135.0	84.0	2295	11.6	82	usa	r
396	28.0	4	120.0	79.0	2625	18.6	82	usa	for
397	31.0	4	119.0	82.0	2720	19.4	82	usa	che

In [51]:

```
pd.options.display.max_rows =10
```

In [52]:

```
cars
```

Out[52]:

	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origin	n
0	18.0	8	307.0	130.0	3504	12.0	70	usa	chev che m
1	15.0	8	350.0	165.0	3693	11.5	70	usa	t sk
2	18.0	8	318.0	150.0	3436	11.0	70	usa	plym sat
3	16.0	8	304.0	150.0	3433	12.0	70	usa	rebe
4	17.0	8	302.0	140.0	3449	10.5	70	usa	ti
...	
393	27.0	4	140.0	86.0	2790	15.6	82	usa	mus
394	44.0	4	97.0	52.0	2130	24.6	82	europa	pi
395	32.0	4	135.0	84.0	2295	11.6	82	usa	di ramj
396	28.0	4	120.0	79.0	2625	18.6	82	usa	ra
397	31.0	4	119.0	82.0	2720	19.4	82	usa	che

398 rows × 9 columns



In []: