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Web Scraping and Social Media Scraping Project

Short description of the topic and the web page:

In this project, we will show the second-hand sales price of the Mercedes C180, C200 and C250 models produced between 2010 and 2022, and show that the price has changed depending on their year of manufacture, engine capacity, horsepower and other factors. To do this, we will use the website of used cars and spare parts in Azerbaijan. Here is the link to the website: [Turbo.az](https://turbo.az).

Short description of your scraper mechanics:

Using BeautifulSoup and Scrapy library on Python, it gives the output in tabular form after filtering the vehicles on the dynamic website by car brand, model and year of manufacture.

Short technical description of the output:

By using the BeautifulSoup and Scrapy library on Python, we add the information of the tools in the web page that comes after a certain filtering of the tools on the dynamic website, with the CSS and IDs we have determined in the background, and add them to the necessary directories. Afterwards, we obtain our data by sorting by years by providing a tabular view of the added data with the Pandas library.

Data Analysis:

		name	price	year	machine	km
5	Mercedes	C 180	65 500 \$	2021	1.5 L	5 519 km
14	Mercedes	C 200	52 000 \$	2020	1.5 L	25 000 km
23	Mercedes	C 200	43 500 \$	2019	1.5 L	15 000 km
21	Mercedes	C 200	36 500 \$	2018	2.0 L	56 100 km
9	Mercedes	C 180	34 800 \$	2018	1.6 L	42 000 km
22	Mercedes	C 200	43 000 \$	2017	2.0 L	59 000 km
20	Mercedes	C 200	33 500 \$	2017	2.0 L	162 000 km
10	Mercedes	C 180	31 000 \$	2017	1.6 L	53 000 km
8	Mercedes	C 180	27 900 \$	2016	1.6 L	126 500 km
19	Mercedes	C 200	33 500 \$	2016	2.0 L	36 800 km
16	Mercedes	C 200	27 800 \$	2016	2.0 L	146 000 km
6	Mercedes	C 180	24 500 \$	2015	1.6 L	132 000 km
11	Mercedes	C 180	29 000 \$	2015	1.6 L	137 000 km
18	Mercedes	C 200	45 900 AZN	2015	2.0 L	77 000 km
15	Mercedes	C 200	29 900 \$	2014	2.0 L	103 511 km
28	Mercedes	C 250	27 600 \$	2014	2.0 L	159 300 km
13	Mercedes	C 180	20 900 \$	2014	1.6 L	183 000 km
7	Mercedes	C 180	25 700 \$	2014	1.6 L	85 000 km
4	Mercedes	C 180	24 500 \$	2014	1.6 L	175 000 km
42	Mercedes	C 250	26 500 AZN	2014	1.8 L	155 104 km
30	Mercedes	C 250	28 000 AZN	2013	1.8 L	172 000 km
39	Mercedes	C 250	25 800 AZN	2013	1.8 L	175 000 km
40	Mercedes	C 250	19 000 \$	2013	1.8 L	111 000 km
45	Mercedes	C 250	26 800 AZN	2013	1.8 L	130 000 km
36	Mercedes	C 250	25 300 AZN	2013	1.8 L	108 622 km
35	Mercedes	C 250	34 000 AZN	2013	1.8 L	113 000 km
33	Mercedes	C 250	27 900 AZN	2013	1.8 L	98 000 km
31	Mercedes	C 250	15 600 \$	2013	1.8 L	148 000 km
24	Mercedes	C 250	27 200 AZN	2013	1.8 L	145 000 km
47	Mercedes	C 250	24 500 AZN	2013	1.8 L	183 100 km
29	Mercedes	C 250	27 500 AZN	2013	1.8 L	80 800 km
3	Mercedes	C 180	25 000 AZN	2013	1.8 L	190 000 km
37	Mercedes	C 250	18 500 \$	2012	1.8 L	138 000 km
46	Mercedes	C 250	32 800 AZN	2012	1.8 L	138 000 km
44	Mercedes	C 250	22 400 AZN	2012	1.8 L	276 000 km
43	Mercedes	C 250	23 800 AZN	2012	1.8 L	160 000 km
27	Mercedes	C 250	24 300 AZN	2012	1.8 L	168 000 km
17	Mercedes	C 200	27 800 AZN	2012	1.8 L	165 000 km
1	Mercedes	C 180	26 500 AZN	2012	1.8 L	127 000 km
25	Mercedes	C 250	25 500 AZN	2012	1.8 L	170 857 km
26	Mercedes	C 250	25 900 AZN	2012	1.8 L	118 000 km
32	Mercedes	C 250	26 999 AZN	2012	1.8 L	167 000 km
38	Mercedes	C 250	26 500 AZN	2011	1.8 L	176 000 km
41	Mercedes	C 250	24 000 AZN	2011	1.8 L	228 144 km
34	Mercedes	C 250	24 500 AZN	2011	1.8 L	195 000 km
12	Mercedes	C 180	24 600 AZN	2010	1.8 L	178 000 km
2	Mercedes	C 180	24 300 AZN	2010	1.8 L	220 000 km
0	Mercedes	C 180	22 000 AZN	2010	1.8 L	140 000 km

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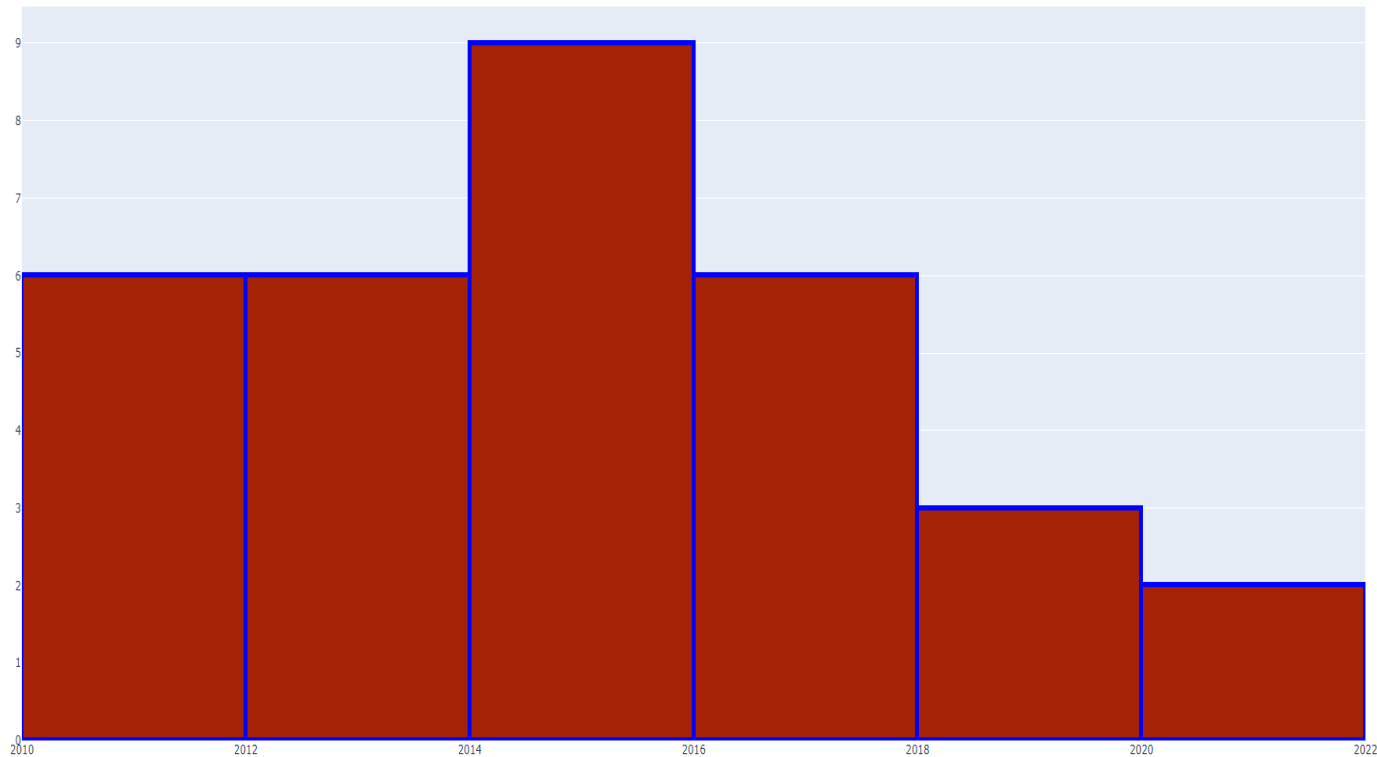
Output 1 - Scrapy

	name	price	year	machine	km
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4	Mercedes C 250	27 600 \$	2014	2.0 L	159 300 km
0	Mercedes C 250	27 200 AZN	2013	1.8 L	145 000 km
37	Mercedes C 180	25 000 AZN	2013	1.8 L	190 000 km
21	Mercedes C 250	26 800 AZN	2013	1.8 L	130 000 km
23	Mercedes C 250	24 500 AZN	2013	1.8 L	183 100 km
16	Mercedes C 250	19 000 \$	2013	1.8 L	111 000 km
5	Mercedes C 250	27 500 AZN	2013	1.8 L	80 800 km
15	Mercedes C 250	25 800 AZN	2013	1.8 L	175 000 km
6	Mercedes C 250	28 000 AZN	2013	1.8 L	172 000 km
7	Mercedes C 250	15 600 \$	2013	1.8 L	148 000 km
12	Mercedes C 250	25 300 AZN	2013	1.8 L	108 622 km
11	Mercedes C 250	34 000 AZN	2013	1.8 L	113 000 km
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2	Mercedes C 250	25 900 AZN	2012	1.8 L	118 000 km
3	Mercedes C 250	24 300 AZN	2012	1.8 L	168 000 km
8	Mercedes C 250	26 999 AZN	2012	1.8 L	167 000 km
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10	Mercedes C 250	24 500 AZN	2011	1.8 L	195 000 km
36	Mercedes C 180	24 300 AZN	2010	1.8 L	220 000 km
34	Mercedes C 180	22 000 AZN	2010	1.8 L	140 000 km
46	Mercedes C 180	24 600 AZN	2010	1.8 L	178 000 km

Output 2 – BeautifulSoup

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Histogram



After analyzing the data and obtaining the histogram you see, we can say with full confidence that the most sold cars produced between 2010 and 2022 were those produced between 2014 and 2016.

Additionally, according to run times, Scrapy is 30 milliseconds faster than BeautifulSoup.

Detailed description which group participant wrote which part of the project:

Coding and project information with BeautifulSoup Elvin SHIRINOV, Scrapy coding and data analysis by Mehmet TIRYAKI.