

(1119, 14)

	Unnamed: 0	type	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
0	0	white	7.4	0.70	0.00	1.9	0.076	11.0	34.0	0.9978	3.51	0.56	9.4	5
1	1	white	7.8	0.88	0.00	2.6	0.098	25.0	67.0	0.9968	3.20	0.68	9.8	5
2	2	white	7.8	0.76	0.04	2.3	0.092	15.0	54.0	0.9970	3.26	0.65	9.8	5
3	3	white	11.2	0.28	0.56	1.9	0.075	17.0	60.0	0.9980	3.16	0.58	9.8	6
4	4	white	7.4	0.70	0.00	1.9	0.076	11.0	34.0	0.9978	3.51	0.56	9.4	5

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C:\Users\samya\AppData\Local\Temp\ipykernel\_23072\634187881.py:1: FutureWarning: The default value of numeric\_only in DataFrame.mean is deprecated. In a future version, it will default to df.fillna(df.mean())

	Unnamed: 0	type	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
0	0	white	7.4	0.700	0.00	1.9	0.076	11.0	34.0	0.99780	3.51	0.56	9.4	5
1	1	white	7.8	0.880	0.00	2.6	0.098	25.0	67.0	0.99680	3.20	0.68	9.8	5
2	2	white	7.8	0.760	0.04	2.3	0.092	15.0	54.0	0.99700	3.26	0.65	9.8	5
3	3	white	11.2	0.280	0.56	1.9	0.075	17.0	60.0	0.99800	3.16	0.58	9.8	6
4	4	white	7.4	0.700	0.00	1.9	0.076	11.0	34.0	0.99780	3.51	0.56	9.4	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1594	1594	white	6.2	0.600	0.08	2.0	0.090	32.0	44.0	0.99490	3.45	0.58	10.5	5
1595	1595	white	5.9	0.550	0.10	2.2	0.062	39.0	51.0	0.99512	3.52	0.76	11.2	6
1596	1596	white	6.3	0.510	0.13	2.3	0.076	29.0	40.0	0.99574	3.42	0.75	11.0	6
1597	1597	white	5.9	0.645	0.12	2.0	0.075	32.0	44.0	0.99547	3.57	0.71	10.2	5
1598	1598	white	6.0	0.310	0.47	3.6	0.067	18.0	42.0	0.99549	3.39	0.66	11.0	6

1599 rows × 14 columns

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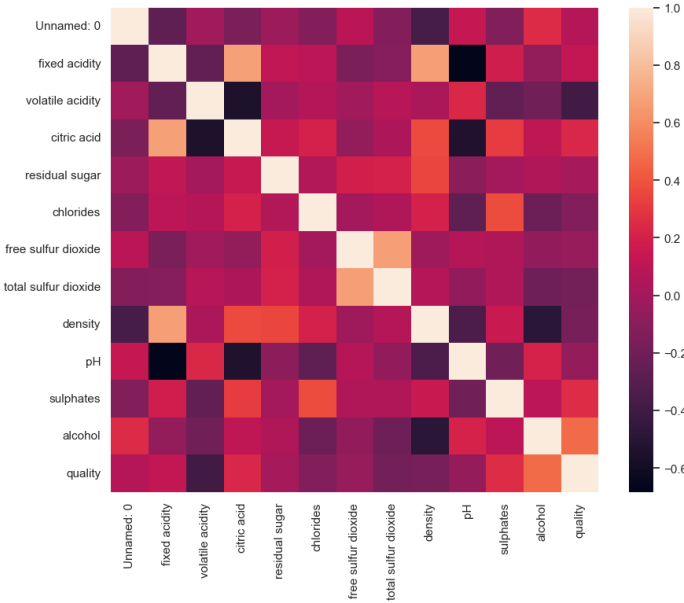
(1119, 14)

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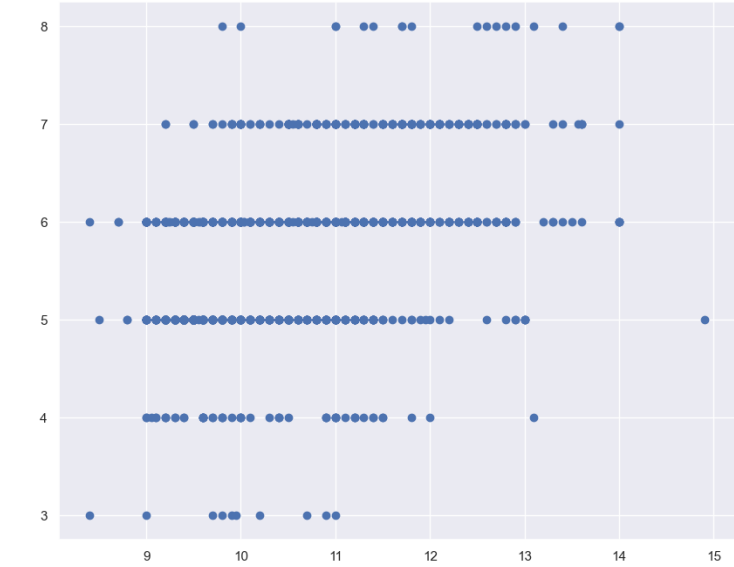
(1, 6111)

	Unnamed: 0	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
count	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000	1599.000000
mean	799.000000	8.319637	0.527821	0.270976	2.538806	0.087467	15.874922	46.467792	0.996747	3.311113	0.658149	10.422983	5.636023
std	461.735855	1.741096	0.179060	0.194801	1.409928	0.047065	10.460157	32.895324	0.001887	0.154386	0.169507	1.065668	0.807569
min	0.000000	4.600000	0.120000	0.000000	0.900000	0.012000	1.000000	6.000000	0.990070	2.740000	0.330000	8.400000	3.000000
25%	399.500000	7.100000	0.390000	0.090000	1.900000	0.070000	7.000000	22.000000	0.995600	3.210000	0.550000	9.500000	5.000000
50%	799.000000	7.900000	0.520000	0.260000	2.200000	0.079000	14.000000	38.000000	0.996750	3.310000	0.620000	10.200000	6.000000
75%	1198.500000	9.200000	0.640000	0.420000	2.600000	0.090000	21.000000	62.000000	0.997835	3.400000	0.730000	11.100000	6.000000
max	1598.000000	15.900000	1.580000	1.000000	15.500000	0.611000	72.000000	289.000000	1.003690	4.010000	2.000000	14.900000	8.000000

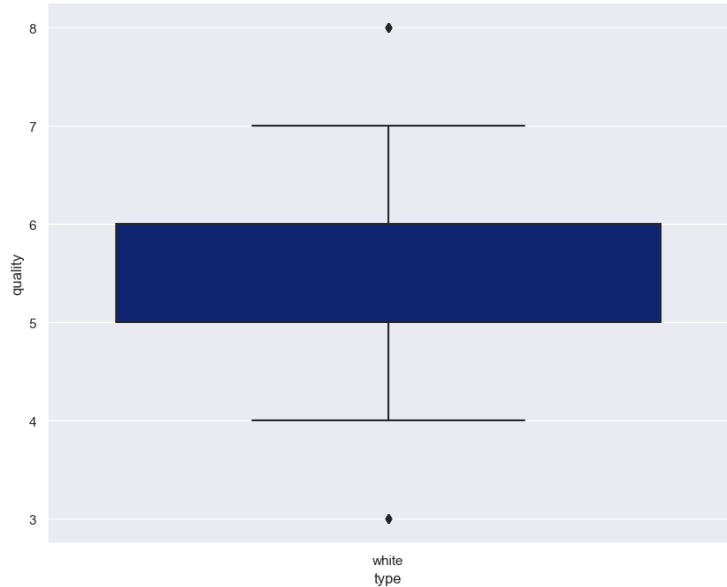
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LinearRegression()



(480, 1)



0.38362170042539534  
1.6480875717859167  
The linear model is: Y = 1.6481 + 0.38362X

Unnamed: 0	1599
type	1
fixed acidity	96
volatile acidity	143
citric acid	80
residual sugar	91
chlorides	153
free sulfur dioxide	60
total sulfur dioxide	144
density	436
pH	89
sulphates	96
alcohol	65
quality	6
dtype:	int64

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0.553227662264448

	Unnamed: 0	type	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
0	0	white	7.4	0.700	0.00	1.9	0.076	11.0	34.0	0.9978	3.51	0.56	9.4	5
1	1	white	7.8	0.880	0.00	2.6	0.098	25.0	67.0	0.9968	3.20	0.68	9.8	5
2	2	white	7.8	0.760	0.04	2.3	0.092	15.0	54.0	0.9970	3.26	0.65	9.8	5
3	3	white	11.2	0.280	0.56	1.9	0.075	17.0	60.0	0.9980	3.16	0.58	9.8	6
4	4	white	7.4	0.700	0.00	1.9	0.076	11.0	34.0	0.9978	3.51	0.56	9.4	5
5	5	white	7.4	0.660	0.00	1.8	0.075	13.0	40.0	0.9978	3.51	0.56	9.4	5
6	6	white	7.9	0.600	0.06	1.6	0.069	15.0	59.0	0.9964	3.30	0.46	9.4	5
7	7	white	7.3	0.650	0.00	1.2	0.065	15.0	21.0	0.9946	3.39	0.47	10.0	7
8	8	white	7.8	0.580	0.02	2.0	0.073	9.0	18.0	0.9968	3.36	0.57	9.5	7
9	9	white	7.5	0.500	0.36	6.1	0.071	17.0	102.0	0.9978	3.35	0.80	10.5	5
10	10	white	6.7	0.580	0.08	1.8	0.097	15.0	65.0	0.9959	3.28	0.54	9.2	5
11	11	white	7.5	0.500	0.36	6.1	0.071	17.0	102.0	0.9978	3.35	0.80	10.5	5
12	12	white	5.6	0.615	0.00	1.6	0.089	16.0	59.0	0.9943	3.58	0.52	9.9	5
13	13	white	7.8	0.610	0.29	1.6	0.114	9.0	29.0	0.9974	3.26	1.56	9.1	5
14	14	white	8.9	0.620	0.18	3.8	0.176	52.0	145.0	0.9986	3.16	0.88	9.2	5
15	15	white	8.9	0.620	0.19	3.9	0.170	51.0	148.0	0.9986	3.17	0.93	9.2	5
16	16	white	8.5	0.280	0.56	1.8	0.092	35.0	103.0	0.9969	3.30	0.75	10.5	7
17	17	white	8.1	0.560	0.28	1.7	0.368	16.0	56.0	0.9968	3.11	1.28	9.3	5
18	18	white	7.4	0.590	0.08	4.4	0.086	6.0	29.0	0.9974	3.38	0.50	9.0	4
19	19	white	7.9	0.320	0.51	1.8	0.341	17.0	56.0	0.9969	3.04	1.08	9.2	6

```
Output exceeds the size limit
array([[5],
       [6],
       [6],
       [5],
       [7],
       [5],
       [6],
       [5],
       [6],
       [6],
       [5],
       [5],
       [4],
       [7],
       [6],
       [7],
       [7],
       [7],
       [5],
       [6],
       [5],
       [5],
       [6],
       [6],
       [5],
       ...
       [6],
       [6],
       [5],
       [5],
       [6]], dtype=int64)
```

```
Index(['Unnamed: 0', 'type', 'fixed acidity', 'volatile acidity',
      'citric acid', 'residual sugar', 'chlorides', 'free sulfur dioxide',
      'total sulfur dioxide', 'density', 'pH', 'sulphates', 'alcohol',
      'quality'],
      dtype='object')
```

```

Unnamed: 0      0
type            0
fixed acidity    0
volatile acidity 0
citric acid      0
residual sugar   0
chlorides        0
free sulfur dioxide 0
total sulfur dioxide 0
density          0
pH              0
sulphates        0
alcohol          0
quality          0
dtype: int64

```

```

Unnamed: 0      0
type            0
fixed acidity    0
volatile acidity 0
citric acid      0
residual sugar   0
chlorides        0
free sulfur dioxide 0
total sulfur dioxide 0
density          0
pH              0
sulphates        0
alcohol          0
quality          0
dtype: int64

```

```
Output exceeds the size limit
array([[5.25413156],
       [6.44335883],
       [6.17482364],
       [5.48430458],
       [5.86792628],
       [5.67611543],
       [5.44594241],
       [5.3308559 ],
       [5.17740722],
       [6.05973713],
       [5.48430458],
       [5.44594241],
       [5.86792628],
       [5.36921807],
       [5.90628845],
       [5.67611543],
       [6.25154798],
       [6.52008317],
       [5.29249373],
       [5.29249373],
       [5.17740722],
       [5.17740722],
       [6.05973713],
       [5.82956411],
       [5.21576939],
       ...,
       [5.90628845],
       [6.02137496],
       [5.44594241],
       [5.25413156],
       [6.02137496]])
```