

The CONTENTS Procedure

Data Set Name	WORK.RED_WINE	Observations	1599
Member Type	DATA	Variables	12
Engine	V9	Indexes	0
Created	01/20/2023 08:13:13	Observation Length	96
Last Modified	01/20/2023 08:13:13	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	2
First Data Page	1
Max Obs per Page	1363
Obs in First Data Page	1327
Number of Data Set Repairs	0
Filename	/saswork/SAS_work2B750001EBB1_odaws01-usw2.oda.sas.com/SAS_work2AAB0001EBB1_odaws01-usw2.oda.sas.com/red_wine.sas7bdat
Release Created	9.0401M7
Host Created	Linux
Inode Number	1074791968
Access Permission	rw-r--r--
Owner Name	u62783581
File Size	384KB
File Size (bytes)	393216

Alphabetic List of Variables and Attributes					
#	Variable	Type	Len	Format	Informat
11	alcohol	Num	8	BEST12.	BEST32.
5	chlorides	Num	8	BEST12.	BEST32.
3	citric acid	Num	8	BEST12.	BEST32.
8	density	Num	8	BEST12.	BEST32.
1	fixed acidity	Num	8	BEST12.	BEST32.
6	free sulfur dioxide	Num	8	BEST12.	BEST32.
9	pH	Num	8	BEST12.	BEST32.
12	quality	Num	8	BEST12.	BEST32.
4	residual sugar	Num	8	BEST12.	BEST32.
10	sulphates	Num	8	BEST12.	BEST32.
7	total sulfur dioxide	Num	8	BEST12.	BEST32.
2	volatile acidity	Num	8	BEST12.	BEST32.

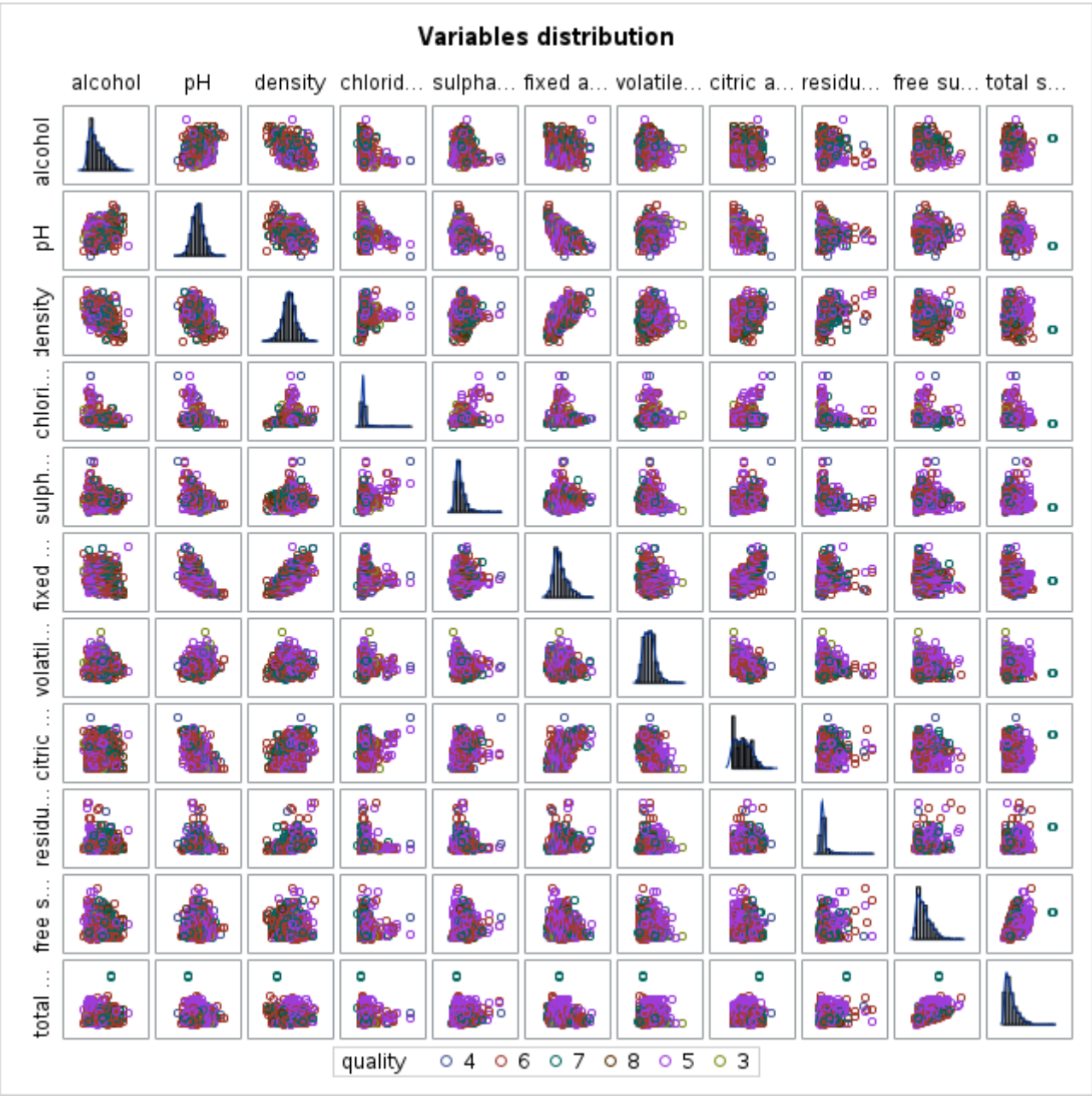
The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
fixed acidity	1599	8.3196373	1.7410963	4.6000000	15.9000000
volatile acidity	1599	0.5278205	0.1790597	0.1200000	1.5800000
citric acid	1599	0.2709756	0.1948011	0	1.0000000
residual sugar	1599	2.5388055	1.4099281	0.9000000	15.5000000
chlorides	1599	0.0874665	0.0470653	0.0120000	0.6110000
free sulfur dioxide	1599	15.8749218	10.4601570	1.0000000	72.0000000

Variable	N	Mean	Std Dev	Minimum	Maximum
total sulfur dioxide	1599	46.4677924	32.8953245	6.0000000	289.0000000
density	1599	0.9967467	0.0018873	0.9900700	1.0036900
pH	1599	3.3111132	0.1543865	2.7400000	4.0100000
sulphates	1599	0.6581488	0.1695070	0.3300000	2.0000000
alcohol	1599	10.4229831	1.0656676	8.4000000	14.9000000
quality	1599	5.6360225	0.8075694	3.0000000	8.0000000

The MEANS Procedure

Variable	N Miss
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



**Variables distribution**

The UNIVARIATE Procedure  
Variable: quality

Moments			
N	1359	Sum Weights	1359
Mean	5.62325239	Sum Observations	7642
Std Deviation	0.823578	Variance	0.67828072
Skewness	0.19240659	Kurtosis	0.34025609
Uncorrected SS	43894	Corrected SS	921.105224
Coeff Variation	14.645937	Std Error Mean	0.02234061

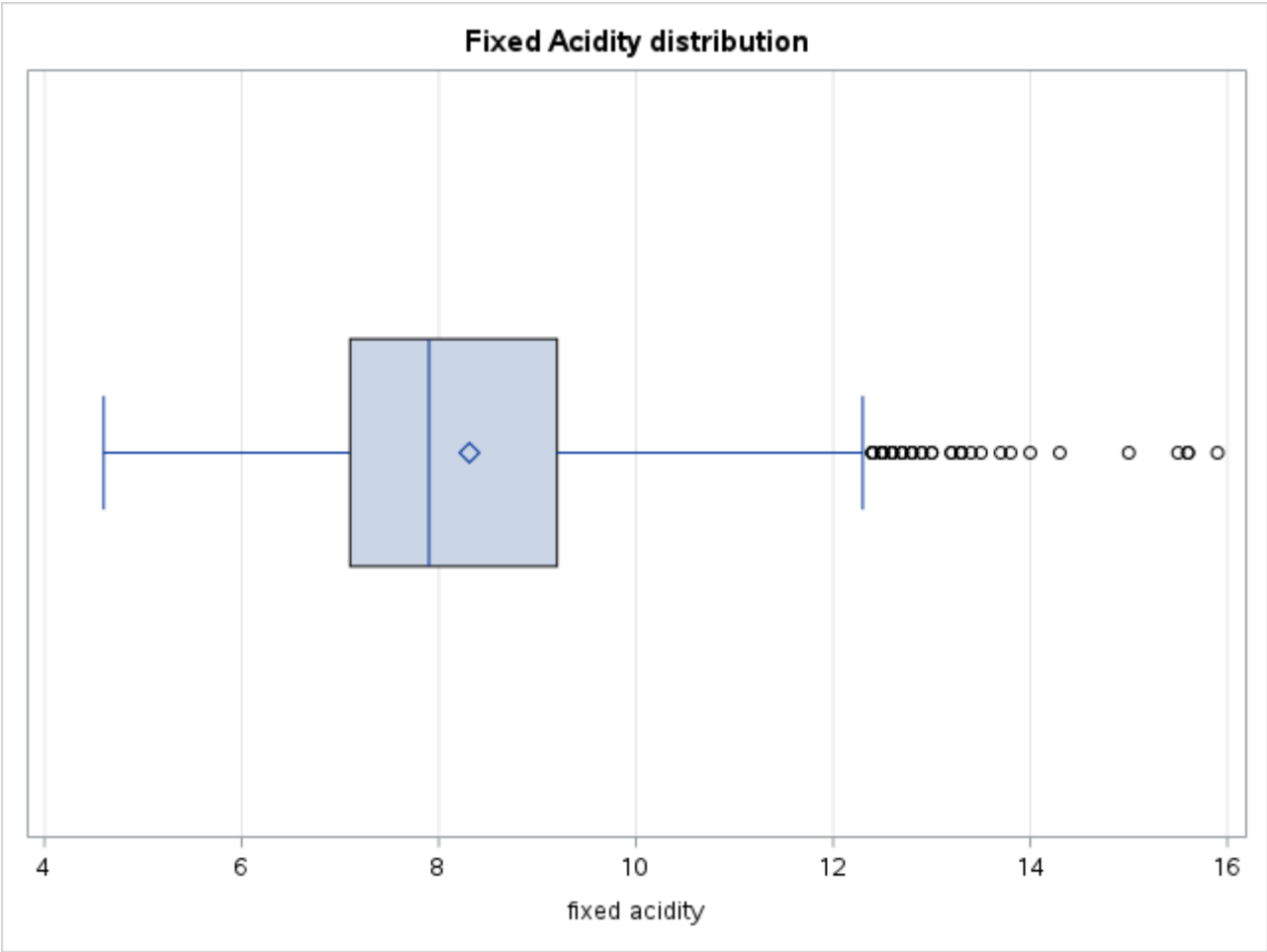
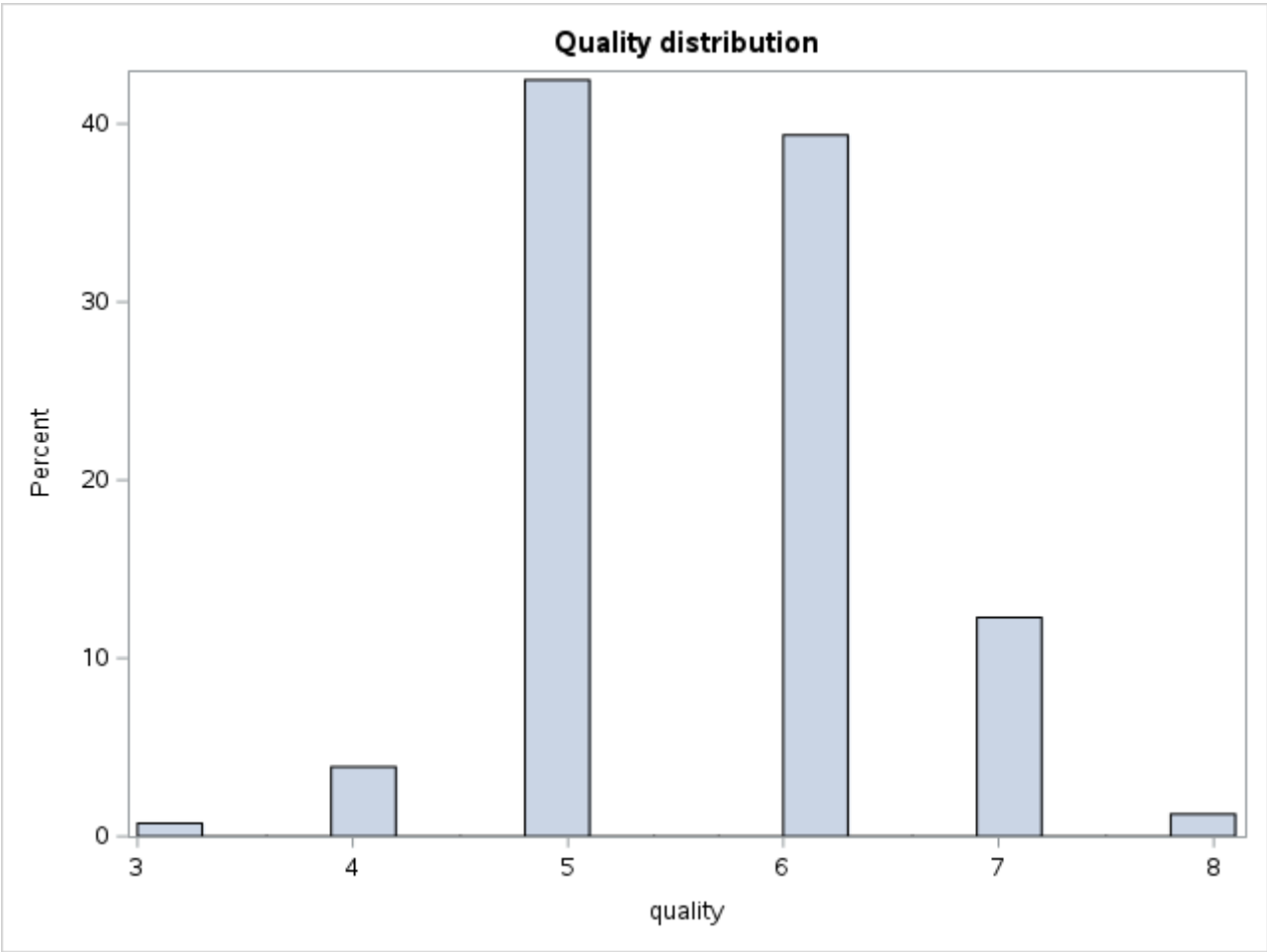
Basic Statistical Measures			
Location		Variability	
Mean	5.623252	Std Deviation	0.82358
Median	6.000000	Variance	0.67828
Mode	5.000000	Range	5.00000
		Interquartile Range	1.00000

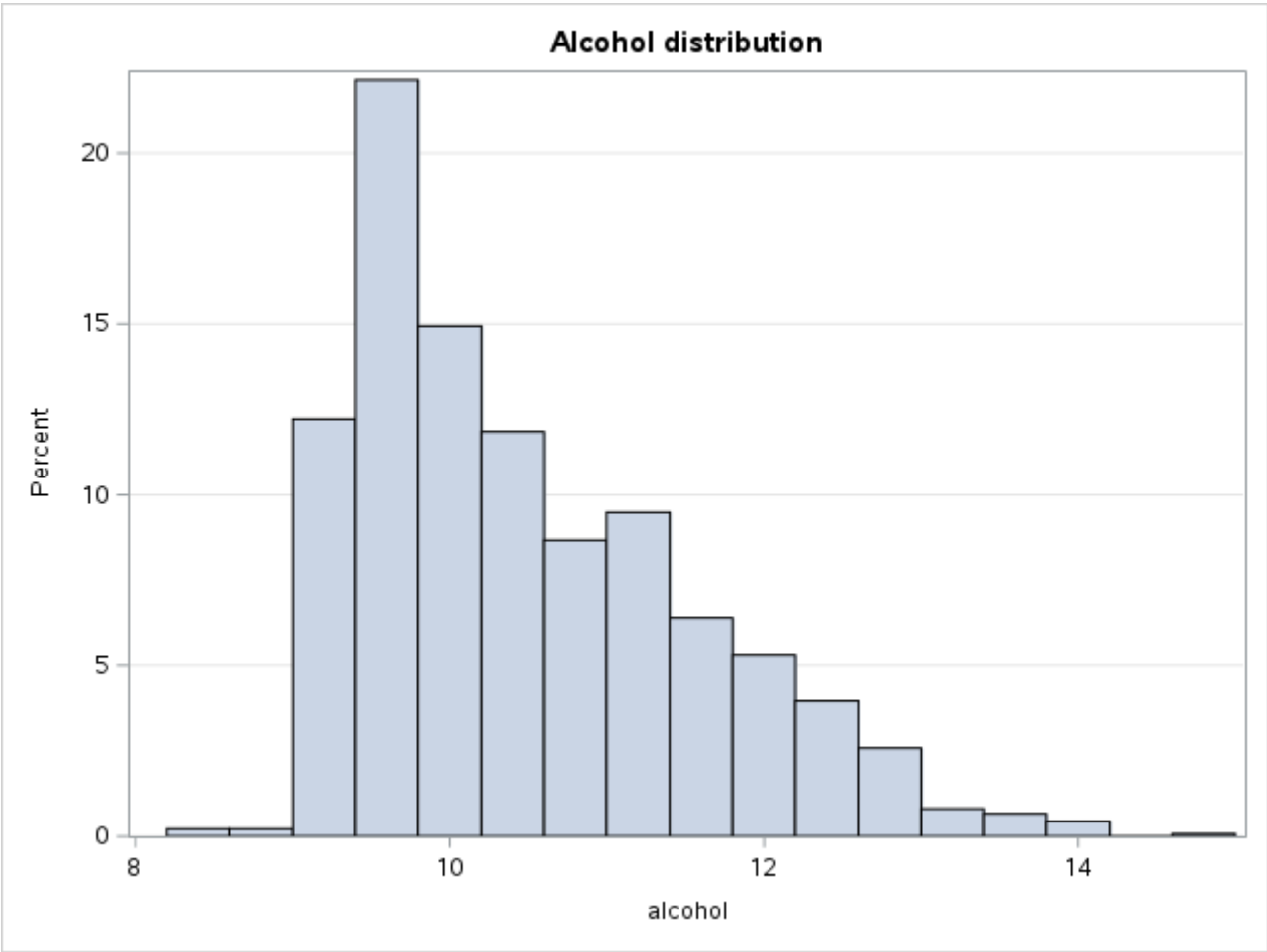
Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	251.7054	Pr >  t	<.0001
Sign	M	679.5	Pr >=  M	<.0001
Signed Rank	S	462060	Pr >=  S	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	8
99%	8
95%	7
90%	7
75% Q3	6
50% Median	6
25% Q1	5
10%	5
5%	5
1%	4
0% Min	3

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
3	1288	8	1127
3	1196	8	1174
3	1191	8	1222
3	820	8	1263
3	567	8	1330

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Alcohol distribution

The CORR Procedure

12 Variables:	quality alcohol pH density chlorides sulphates fixed acidity volatile acidity citric acid residual sugar free sulfur dioxide total sulfur dioxide
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Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
quality	1359	5.62325	0.82358	7642	3.00000	8.00000
alcohol	1359	10.43232	1.08207	14178	8.40000	14.90000
pH	1359	3.30979	0.15504	4498	2.74000	4.01000
density	1359	0.99671	0.00187	1355	0.99007	1.00369
chlorides	1359	0.08812	0.04938	119.76000	0.01200	0.61100
sulphates	1359	0.65870	0.17067	895.18000	0.33000	2.00000
fixed acidity	1359	8.31060	1.73699	11294	4.60000	15.90000
volatile acidity	1359	0.52948	0.18303	719.56000	0.12000	1.58000
citric acid	1359	0.27233	0.19554	370.10000	0	1.00000
residual sugar	1359	2.52340	1.35231	3429	0.90000	15.50000
free sulfur dioxide	1359	15.89330	10.44727	21599	1.00000	72.00000
total sulfur dioxide	1359	46.82597	33.40895	63637	6.00000	289.00000

Pearson Correlation Coefficients, N = 1359 Prob >  r  under H0: Rho=0												
	quality	alcohol	pH	density	chlorides	sulphates	fixed acidity	volatile acidity	citric acid	residual sugar	free sulfur dioxide	total sulfur dioxide
quality	1.00000	0.48034 <.0001	-0.05525 0.0417	-0.18425 <.0001	-0.13099 <.0001	0.24884 <.0001	0.11902 <.0001	-0.39521 <.0001	0.22806 <.0001	0.01364 0.6154	-0.05046 0.0629	-0.17786 <.0001
alcohol	0.48034 <.0001	1.00000	0.21342 <.0001	-0.50499 <.0001	-0.22382 <.0001	0.09162 0.0007	-0.06160 0.0232	-0.19781 <.0001	0.10511 0.0001	0.06328 0.0196	-0.08012 0.0031	-0.21783 <.0001

Pearson Correlation Coefficients, N = 1359 Prob >  r  under H0: Rho=0												
	quality	alcohol	pH	density	chlorides	sulphates	fixed acidity	volatile acidity	citric acid	residual sugar	free sulfur dioxide	total sulfur dioxide
pH	-0.05525 0.0417	0.21342 <.0001	1.00000	-0.35562 <.0001	-0.27089 <.0001	-0.21413 <.0001	-0.68669 <.0001	0.24711 <.0001	-0.55031 <.0001	-0.08314 0.0022	0.05663 0.0368	-0.07926 0.0035
density	-0.18425 <.0001	-0.50499 <.0001	-0.35562 <.0001	1.00000	0.19359 <.0001	0.14604 <.0001	0.67020 <.0001	0.02394 0.3778	0.35796 <.0001	0.32452 <.0001	-0.01807 0.5057	0.07814 0.0039
chlorides	-0.13099 <.0001	-0.22382 <.0001	-0.27089 <.0001	0.19359 <.0001	1.00000	0.39456 <.0001	0.08589 0.0015	0.05515 0.0421	0.21019 <.0001	0.02666 0.3261	0.00075 0.9780	0.04577 0.0917
sulphates	0.24884 <.0001	0.09162 0.0007	-0.21413 <.0001	0.14604 <.0001	0.39456 <.0001	1.00000	0.19027 <.0001	-0.25695 <.0001	0.32606 <.0001	-0.01184 0.6629	0.05413 0.0460	0.03529 0.1935
fixed acidity	0.11902 <.0001	-0.06160 0.0232	-0.68669 <.0001	0.67020 <.0001	0.08589 0.0015	0.19027 <.0001	1.00000	-0.25512 <.0001	0.66744 <.0001	0.11103 <.0001	-0.14058 <.0001	-0.10378 0.0001
volatile acidity	-0.39521 <.0001	-0.19781 <.0001	0.24711 <.0001	0.02394 0.3778	0.05515 0.0421	-0.25695 <.0001	-0.25512 <.0001	1.00000	-0.55125 <.0001	-0.00245 0.9281	-0.02094 0.4404	0.07170 0.0082
citric acid	0.22806 <.0001	0.10511 0.0001	-0.55031 <.0001	0.35796 <.0001	0.21019 <.0001	0.32606 <.0001	0.66744 <.0001	-0.55125 <.0001	1.00000	0.14389 <.0001	-0.04800 0.0769	0.04736 0.0810
residual sugar	0.01364 0.6154	0.06328 0.0196	-0.08314 0.0022	0.32452 <.0001	0.02666 0.3261	-0.01184 0.6629	0.11103 <.0001	-0.00245 0.9281	0.14389 <.0001	1.00000	0.16053 <.0001	0.20104 <.0001
free sulfur dioxide	-0.05046 0.0629	-0.08012 0.0031	0.05663 0.0368	-0.01807 0.5057	0.00075 0.9780	0.05413 0.0460	-0.14058 <.0001	-0.02094 0.4404	-0.04800 0.0769	0.16053 <.0001	1.00000	0.66725 <.0001
total sulfur dioxide	-0.17786 <.0001	-0.21783 <.0001	-0.07926 0.0035	0.07814 0.0039	0.04577 0.0917	0.03529 0.1935	-0.10378 0.0001	0.07170 0.0082	0.04736 0.0810	0.20104 <.0001	0.66725 <.0001	1.00000

