The CONTENTS Procedure

Data Set Name	WORK.CARS2	**Observations**	205
Member Type	DATA	**Variables**	10
Engine	V9	**Indexes**	0
Created	02/26/2021 21:08:59	**Observation Length**	80
Last Modified	02/26/2021 21:08:59	**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	65536
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	817
Obs in First Data Page	205
Number of Data Set Repairs	0
Filename	/tmp/SAS_work110000000A0B_localhost.localdomain/SAS_work3FE700000A0B_localhost.localdomain/cars2.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	280960
Access Permission	rw-rw-r--
Owner Name	sasdemo
File Size	128KB
File Size (bytes)	131072

Alphabetic List of Variables and Attributes

#	Variable	Type	Len	Format	Informat
4	body_style	Char	11	$11.	$11.
10	engine_size	Num	8	BEST12.	BEST32.
3	fuel_type	Char	3	$3.	$3.
7	height	Num	8	BEST12.	BEST32.
9	highway_mpg	Num	8	BEST12.	BEST32.
5	horsepower	Num	8	BEST12.	BEST32.
1	make	Char	11	$11.	$11.
2	normalized_losses	Char	3	$3.	$3.
6	price	Num	8	BEST12.	BEST32.
8	width	Num	8	BEST12.	BEST32.

null values

The MEANS Procedure

Variable	N	N Miss
horsepower	203	2
price	205	0
height	205	0
width	205	0
highway_mpg	205	0
engine_size	205	0

null values

The MEANS Procedure

Analysis Variable : horsepower
Mean
104.26

---

null values

The CONTENTS Procedure

Data Set Name	SASPRO.CARSINFO	**Observations**	205
Member Type	DATA	**Variables**	10
Engine	V9	**Indexes**	0
Created	02/26/2021 21:09:00	**Observation Length**	80
Last Modified	02/26/2021 21:09:00	**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	65536
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	817
Obs in First Data Page	205
Number of Data Set Repairs	0
Filename	/folders/myfolders/sasuser.v94/sas project/carsinfo.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	447
Access Permission	rwxrwx---
Owner Name	root
File Size	128KB
File Size (bytes)	131072

Alphabetic List of Variables and Attributes					
#	**Variable**	**Type**	**Len**	**Format**	**Informat**
4	body_style	Char	11	$11.	$11.
10	engine_size	Num	8	BEST12.	BEST32.
3	fuel_type	Char	3	$3.	$3.
7	height	Num	8	BEST12.	BEST32.
9	highway_mpg	Num	8	BEST12.	BEST32.
5	horsepower	Num	8	BEST12.	BEST32.
1	make	Char	11	$11.	$11.
2	normalized_losses	Char	3	$3.	$3.
6	price	Num	8	BEST12.	BEST32.
8	width	Num	8	BEST12.	BEST32.

---

null values

The UNIVARIATE Procedure

Variable: horsepower

Moments			
N	203	Sum Weights	203
Mean	104.256158	Sum Observations	21164
Std Deviation	39.7143688	Variance	1577.23109
Skewness	1.39102949	Kurtosis	2.62327979
Uncorrected SS	2525078	Corrected SS	318600.68
Coeff Variation	38.0930678	Std Error Mean	2.78740224

Basic Statistical Measures			
Location		Variability	
Mean	104.2562	Std Deviation	39.71437
Median	95.0000	Variance	1577
Mode	68.0000	Range	240.00000
		Interquartile Range	46.00000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	37.40262	Pr > |t|	<.0001
Sign	M	101.5	Pr >= |M|	<.0001
Signed Rank	S	10353	Pr >= |S|	<.0001

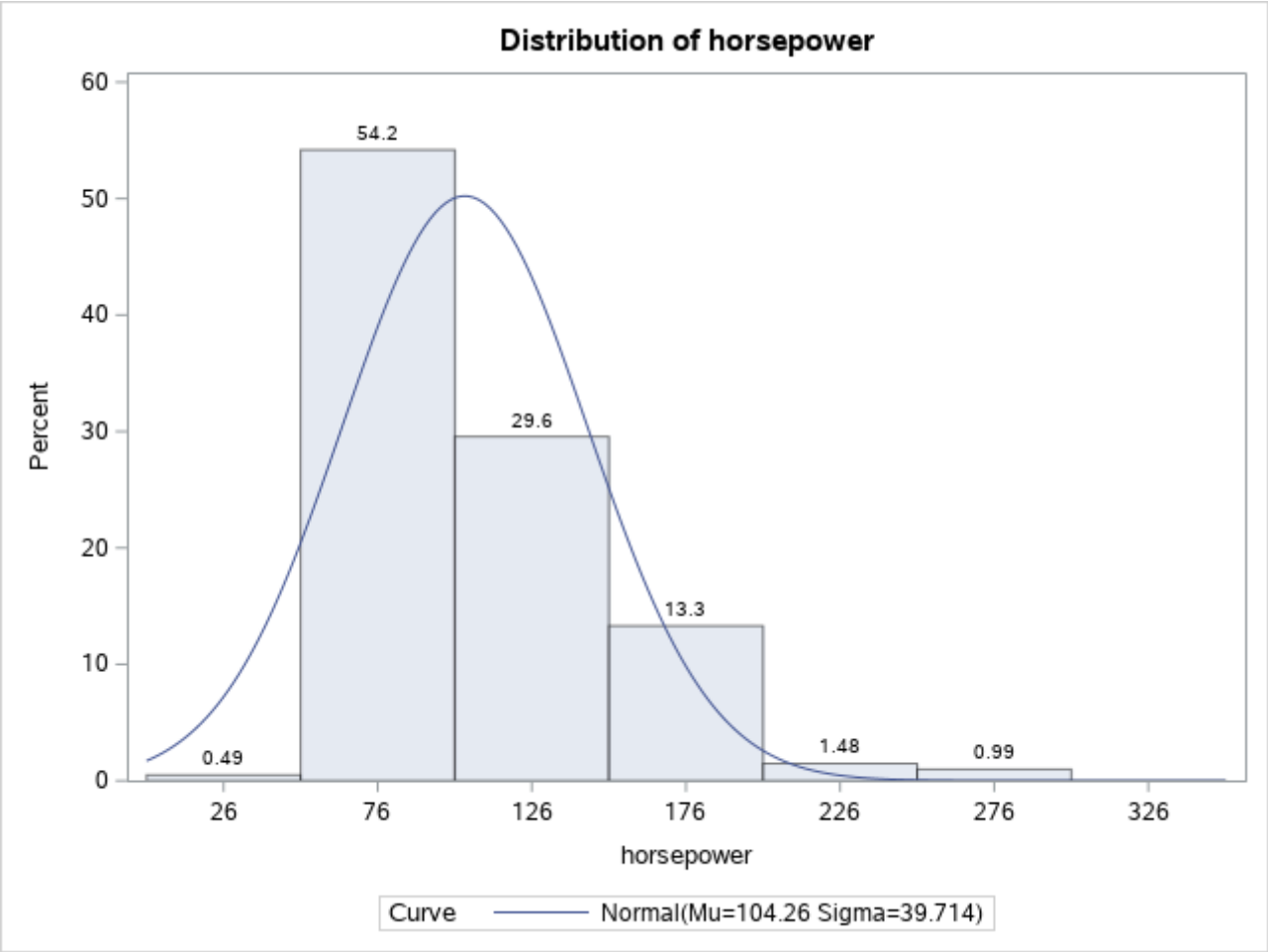
Quantiles (Definition 5)	
Level	Quantile
100% Max	288
99%	207
95%	182
90%	160
75% Q3	116
50% Median	95
25% Q1	70
10%	68
5%	62
1%	52
0% Min	48

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
48	19	207	127
52	185	207	128
52	183	207	129
55	91	262	50
56	160	288	130

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	2	0.98	100.00

null values

The UNIVARIATE Procedure



null values

The UNIVARIATE Procedure
Fitted Normal Distribution for horsepower

Parameters for Normal Distribution		
Parameter	**Symbol**	**Estimate**
Mean	Mu	104.2562
Std Dev	Sigma	39.71437

Goodness-of-Fit Tests for Normal Distribution				
Test	**Statistic**		**p Value**	
Kolmogorov-Smirnov	**D**	0.13742126	**Pr > D**	<0.010
Cramer-von Mises	**W-Sq**	1.03571058	**Pr > W-Sq**	<0.005
Anderson-Darling	**A-Sq**	6.22271355	**Pr > A-Sq**	<0.005

Quantiles for Normal Distribution		
	Quantile	
Percent	**Observed**	**Estimated**
1.0	52.0000	11.8667
5.0	62.0000	38.9318
10.0	68.0000	53.3601
25.0	70.0000	77.4692
50.0	95.0000	104.2562
75.0	116.0000	131.0431
90.0	160.0000	155.1522
95.0	182.0000	169.5805
99.0	207.0000	196.6456

null values

The UNIVARIATE Procedure
Variable: price

Moments			
N	205	Sum Weights	205
Mean	13227.478	Sum Observations	2711633
Std Deviation	7902.65162	Variance	62451902.6
Skewness	1.805173	Kurtosis	3.23822154
Uncorrected SS	4.86083E10	Corrected SS	1.27402E10
Coeff Variation	59.7442051	Std Error Mean	551.945131

Basic Statistical Measures			
Location		Variability	
Mean	13227.48	Std Deviation	7903
Median	10345.00	Variance	62451903
Mode	5572.00	Range	40282
		Interquartile Range	8712

Note: The mode displayed is the smallest of 16 modes with a count of 2.

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	23.9652	Pr > |t|	<.0001
Sign	M	102.5	Pr >= |M|	<.0001
Signed Rank	S	10557.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	45400
99%	40960
95%	32528
90%	22625
75% Q3	16500
50% Median	10345
25% Q1	7788
10%	6649
5%	6189
1%	5195
0% Min	5118

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
5118	139	36880	18
5151	19	37028	129
5195	51	40960	74
5348	151	41315	17
5389	77	45400	75

null values

The UNIVARIATE Procedure
Variable: height

Moments			
N	205	Sum Weights	205
Mean	53.724878	Sum Observations	11013.6
Std Deviation	2.44352197	Variance	5.97079962
Skewness	0.06312273	Kurtosis	-0.4438124
Uncorrected SS	592922.36	Corrected SS	1218.04312
Coeff Variation	4.54821315	Std Error Mean	0.17066298

Basic Statistical Measures			
Location		Variability	
Mean	53.72488	Std Deviation	2.44352
Median	54.10000	Variance	5.97080
Mode	50.80000	Range	12.00000
		Interquartile Range	3.50000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	314.801	Pr > |t|	<.0001
Sign	M	102.5	Pr >= |M|	<.0001
Signed Rank	S	10557.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	59.8
99%	59.1
95%	57.5
90%	56.7
75% Q3	55.5
50% Median	54.1
25% Q1	52.0
10%	50.6
5%	49.7
1%	48.8
0% Min	47.8

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
47.8	50	59.1	154
48.8	2	59.1	155
48.8	1	59.1	156
49.4	82	59.8	29
49.4	81	59.8	124

null values

The UNIVARIATE Procedure
Variable: width

Moments			
N	205	Sum Weights	205
Mean	65.9078049	Sum Observations	13511.1
Std Deviation	2.14520385	Variance	4.60189957
Skewness	0.9040035	Kurtosis	0.70276424
Uncorrected SS	891425.73	Corrected SS	938.787512

Moments			
Coeff Variation	3.25485556	Std Error Mean	0.14982754

Basic Statistical Measures			
Location		Variability	
Mean	65.90780	Std Deviation	2.14520
Median	65.50000	Variance	4.60190
Mode	63.80000	Range	12.00000
		Interquartile Range	2.80000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	439.8911	Pr > |t|	<.0001
Sign	M	102.5	Pr >= |M|	<.0001
Signed Rank	S	10557.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	72.3
99%	71.7
95%	70.5
90%	68.8
75% Q3	66.9
50% Median	65.5
25% Q1	64.1
10%	63.8
5%	63.6
1%	62.5
0% Min	60.3

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
60.3	19	71.7	71
61.8	44	71.7	72
62.5	41	71.7	74
63.4	139	72.0	75
63.6	156	72.3	130

null values

The UNIVARIATE Procedure
Variable: highway_mpg

Moments			
N	205	Sum Weights	205
Mean	30.7512195	Sum Observations	6304
Std Deviation	6.88644313	Variance	47.423099
Skewness	0.53999719	Kurtosis	0.44007038
Uncorrected SS	203530	Corrected SS	9674.3122
Coeff Variation	22.3940489	Std Error Mean	0.48097005

Basic Statistical Measures			
Location		Variability	
Mean	30.75122	Std Deviation	6.88644

Basic Statistical Measures			
Location		Variability	
Median	30.00000	Variance	47.42310
Mode	25.00000	Range	38.00000
		Interquartile Range	9.00000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	63.93583	Pr > |t|	<.0001
Sign	M	102.5	Pr >= |M|	<.0001
Signed Rank	S	10557.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	54
99%	50
95%	43
90%	38
75% Q3	34
50% Median	30
25% Q1	25
10%	23
5%	22
1%	17
0% Min	16

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
16	75	47	160
16	74	47	161
17	50	50	91
18	73	53	19
18	72	54	31

null values

The UNIVARIATE Procedure
Variable: engine_size

Moments			
N	205	Sum Weights	205
Mean	126.907317	Sum Observations	26016
Std Deviation	41.6426934	Variance	1734.11392
Skewness	1.94765505	Kurtosis	5.30568209
Uncorrected SS	3655380	Corrected SS	353759.239
Coeff Variation	32.8134692	Std Error Mean	2.90845187

Basic Statistical Measures			
Location		Variability	
Mean	126.9073	Std Deviation	41.64269
Median	120.0000	Variance	1734
Mode	92.0000	Range	265.00000
		Interquartile Range	44.00000

Note: The mode displayed is the smallest of 2 modes with a count of 15.

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	43.63398	Pr > |t|	<.0001
Sign	M	102.5	Pr >= |M|	<.0001
Signed Rank	S	10557.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	326
99%	304
95%	203
90%	181
75% Q3	141
50% Median	120
25% Q1	97
10%	91
5%	90
1%	70
0% Min	61

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
61	19	258	48
70	58	258	49
70	57	304	75
70	56	308	74
79	33	326	50

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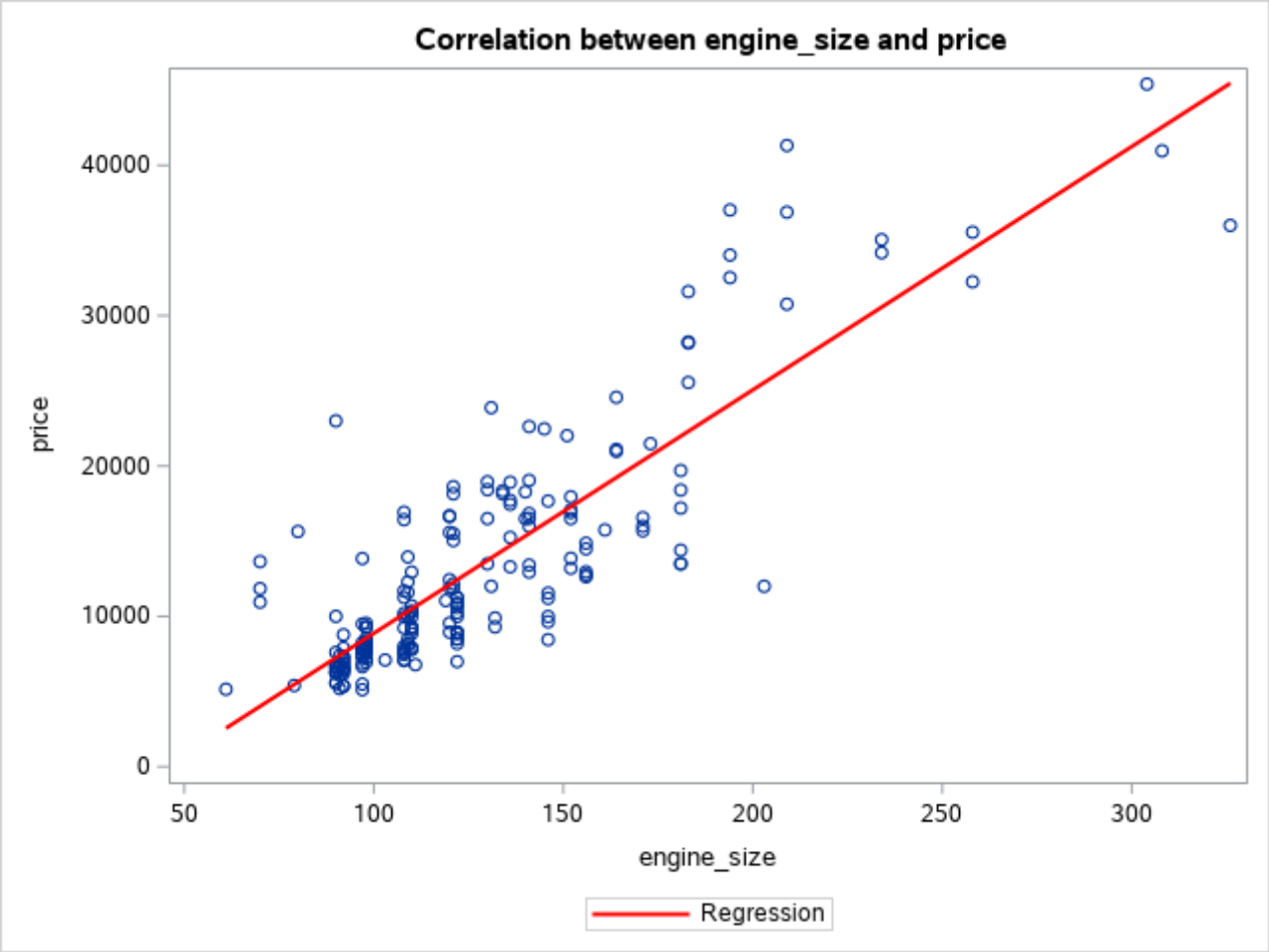
correlation between variables

The CORR Procedure

3 Variables:	horsepower price highway_mpg

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
horsepower	203	104.25616	39.71437	21164	48.00000	288.00000
price	205	13227	7903	2711633	5118	45400
highway_mpg	205	30.75122	6.88644	6304	16.00000	54.00000

Pearson Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations			
	horsepower	price	highway_mpg
horsepower	1.00000 203	0.74738 <.0001 203	-0.77091 <.0001 203
price	0.74738 <.0001 203	1.00000 205	-0.67905 <.0001 205
highway_mpg	-0.77091 <.0001 203	-0.67905 <.0001 205	1.00000 205



model of linear regression

The REG Procedure
Model: MODEL1
Dependent Variable: price

Number of Observations Read	205
Number of Observations Used	205

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	9269767561	9269767561	542.23	<.0001
Error	203	3470420560	17095668		
Corrected Total	204	12740188121			

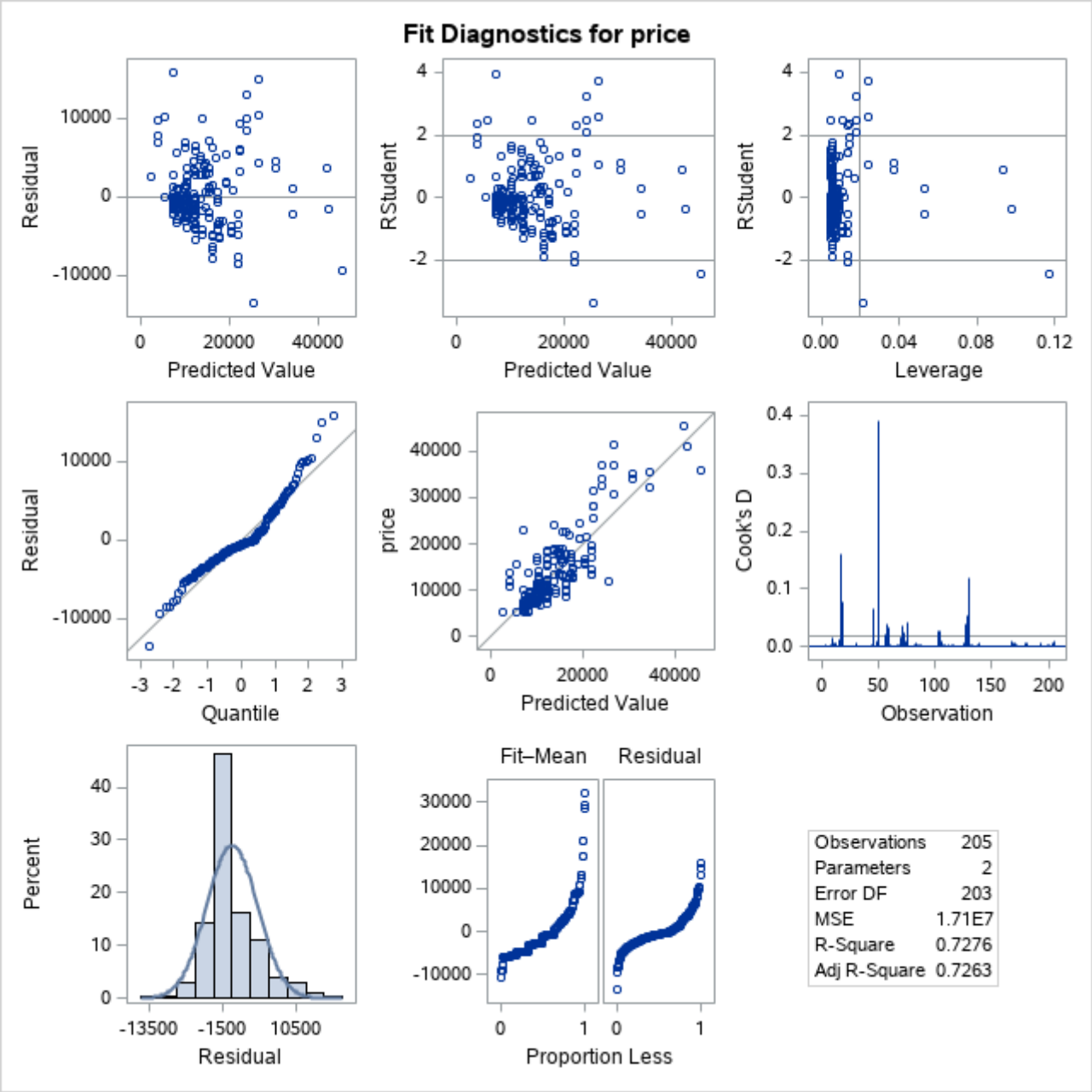
Root MSE	4134.69077	R-Square	0.7276
Dependent Mean	13227	Adj R-Sq	0.7263
Coeff Var	31.25835		

Parameter Estimates

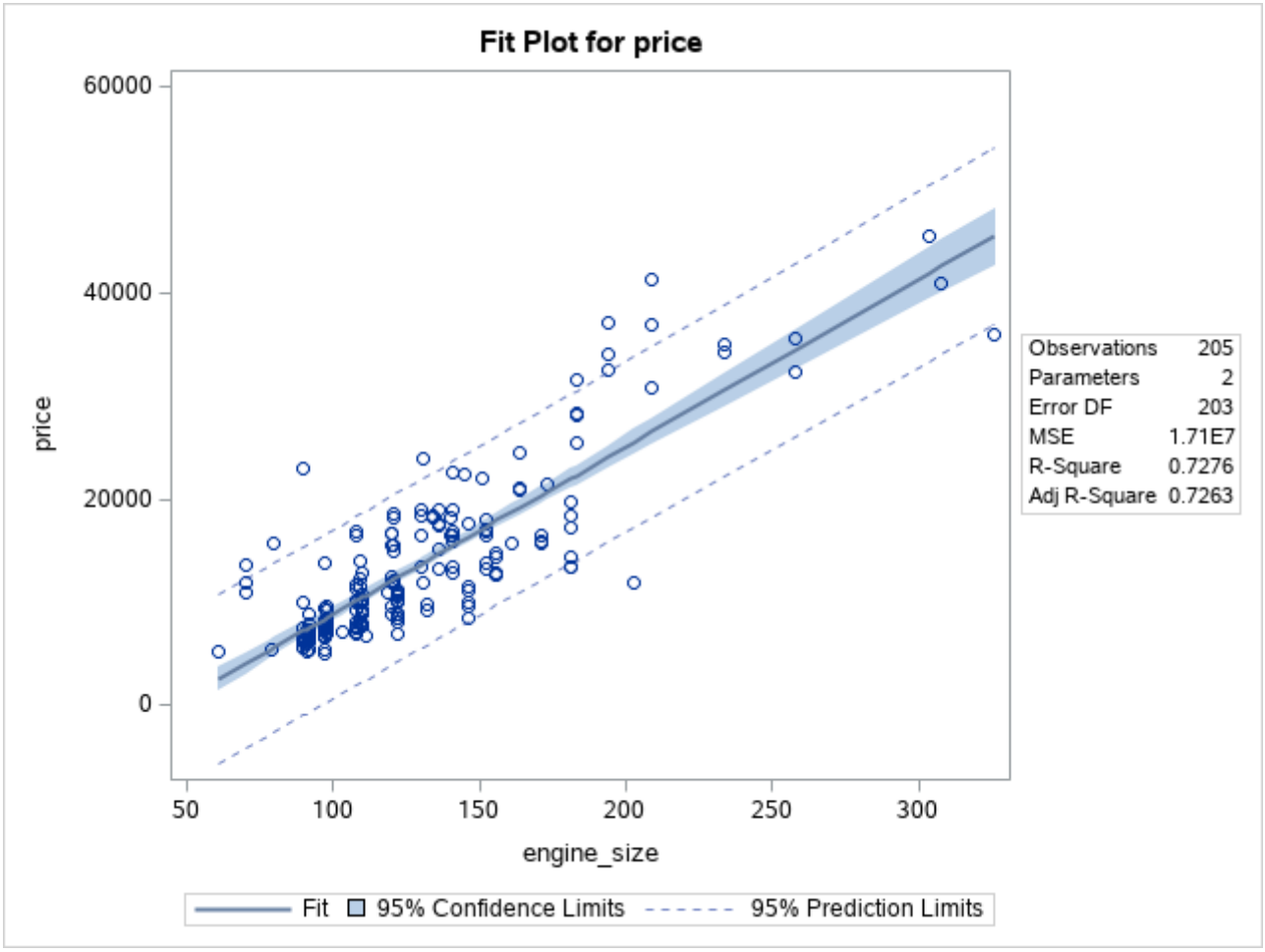
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-7315.67915	928.27889	-7.88	<.0001
engine_size	1	161.87528	6.95167	23.29	<.0001

model of linear regression

The REG Procedure
Model: MODEL1
Dependent Variable: price




Residuals for price
Residual
10000
0
-10000
50
100
150
200
250
300
engine_size


Fit Plot for price
price
60000
40000
20000
0
50
100
150
200
250
300
engine_size
Observations 205
Parameters 2
Error DF 203
MSE 1.71E7
R-Square 0.7276
Adj R-Square 0.7263
Fit
95% Confidence Limits
95% Prediction Limits

checking the mulicolinarty and tolerance of data

The REG Procedure
Model: MODEL1
Dependent Variable: price

Number of Observations Read	205
Number of Observations Used	203
Number of Observations with Missing Values	2

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	9530160470	3176720157	198.60	<.0001
Error	199	3183197860	15995969		
Corrected Total	202	12713358330			

Root MSE	3999.49611	R-Square	0.7496
Dependent Mean	13263	Adj R-Sq	0.7458
Coeff Var	30.15469		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Tolerance	Variance Inflation
Intercept	1	1110.55069	3082.52272	0.36	0.7190	.	0
highway_mpg	1	-188.35209	64.48368	-2.92	0.0039	0.39765	2.51480
horsepower	1	10.58503	14.11785	0.75	0.4543	0.25190	3.96984
engine_size	1	132.75370	11.60418	11.44	<.0001	0.33584	2.97757

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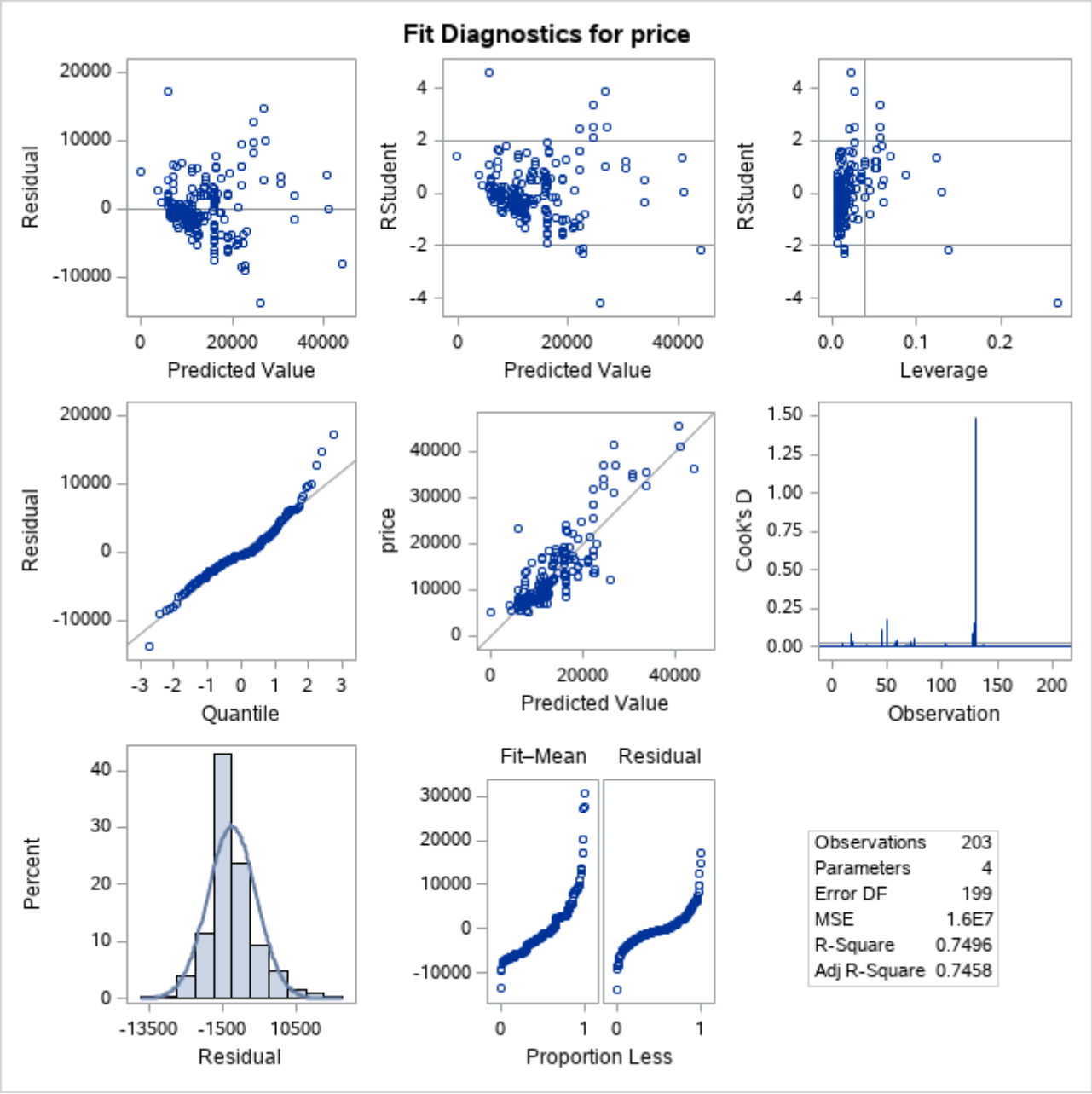
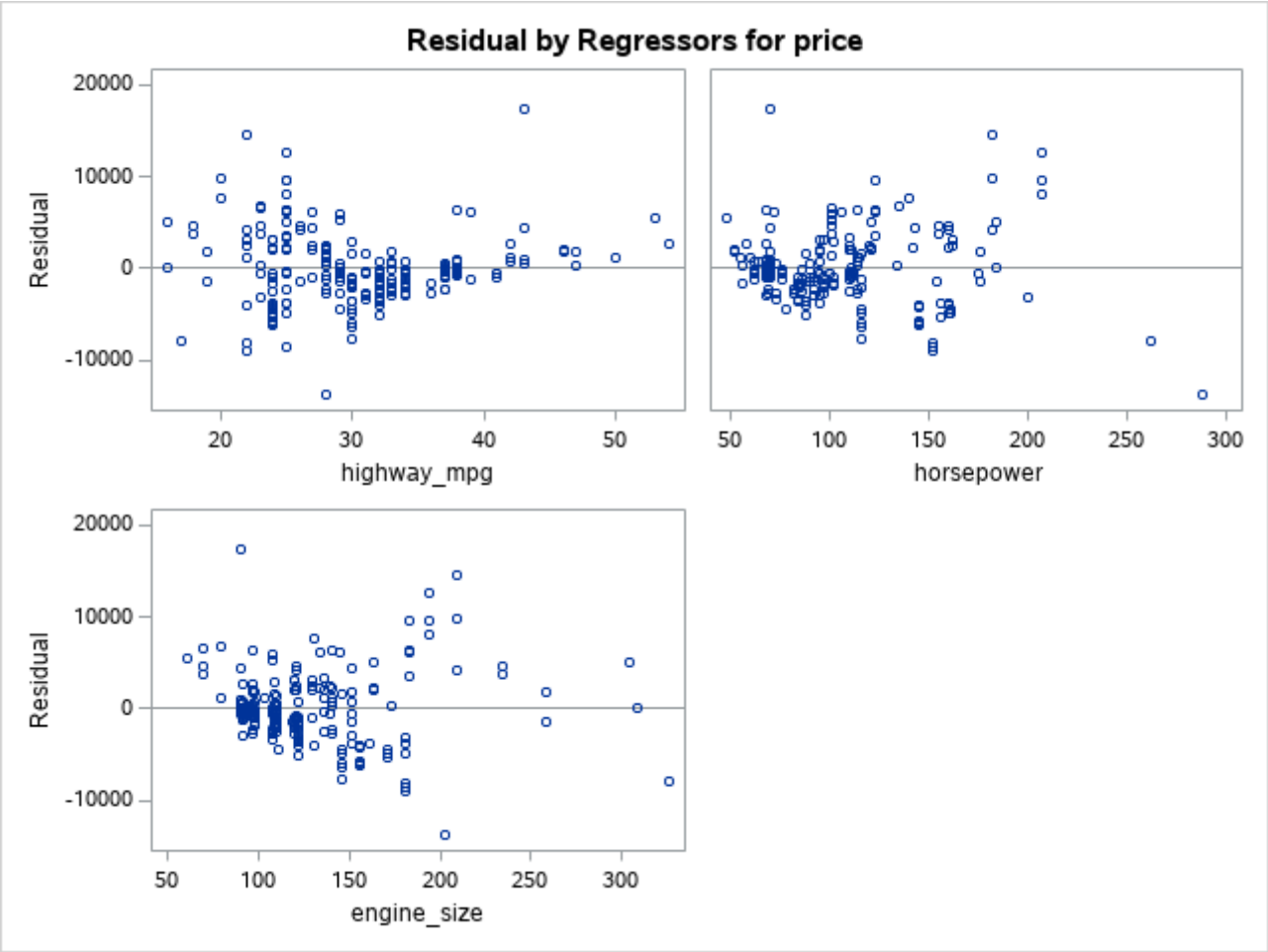
checking the mulicolinarty and tolerance of data

The REG Procedure
Model: MODEL1
Dependent Variable: price


Fit Diagnostics for price
Residual
Predicted Value
RStudent
Predicted Value
RStudent
Leverage
Residual
Quantile
price
Predicted Value
Cook's D
Observation
Percent
Residual
Fit–Mean
Residual
Proportion Less
Observations 203
Parameters 4
Error DF 199
MSE 1.6E7
R-Square 0.7496
Adj R-Square 0.7458


Residual by Regressors for price
Residual
20000
10000
0
-10000
20
30
40
50
highway_mpg
50
100
150
200
250
300
horsepower
engine_size