

```

/* SAS program to enter data and calculate summary */
/* statistics. Data are from exercise 5.52, p. */
/* 239-240. The two variables are reading test */
/* scores (SPEED: reading speed, COMP: reading */
/* comprehension) from a fourth grade class. */

```

```
options nocenter ls=72;
```

```
data;
```

```
input speed comp;
```

```
cards;
```

```
5 60
```

```
7 76
```

```
15 76
```

```
12 90
```

```
8 81
```

```
7 75
```

```
10 95
```

```
11 98
```

```
9 88
```

```
13 73
```

```
10 90
```

```
6 66
```

```
11 91
```

```
8 83
```

```
10 100
```

```
8 85
```

```
7 76
```

```
6 69
```

```
11 91
```

```
8 78
```

```
;
```

```
proc univariate plot normal;
```

```
var speed comp;
```

```
run;
```

The UNIVARIATE Procedure

Variable: speed

Moments

N	20	Sum Weights	20
Mean	9.1	Sum Observations	182
Std Deviation	2.57314062	Variance	6.62105263
Skewness	0.51570211	Kurtosis	-0.1011974
Uncorrected SS	1782	Corrected SS	125.8
Coeff Variation	28.2762705	Std Error Mean	0.57537173

Basic Statistical Measures

Location		Variability	
Mean	9.100000	Std Deviation	2.57314
Median	8.500000	Variance	6.62105
Mode	8.000000	Range	10.00000
		Interquartile Range	4.00000

Tests for Location: Mu0=0

Test	-Statistic-	-----p Value-----	
Student's t	t 15.81586	Pr > t	<.0001
Sign	M 10	Pr >= M	<.0001
Signed Rank	S 105	Pr >= S	<.0001

Tests for Normality

Test	--Statistic--	-----p Value-----	
Shapiro-Wilk	W 0.962923	Pr < W	0.6037
Kolmogorov-Smirnov	D 0.16549	Pr > D	>0.1500
Cramer-von Mises	W-Sq 0.054813	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq 0.320398	Pr > A-Sq	>0.2500

Quantiles (Definition 5)

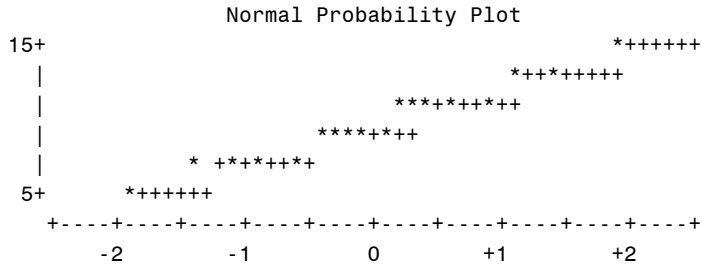
Quantile	Estimate
100% Max	15.0
99%	15.0
95%	14.0
90%	12.5
75% Q3	11.0
50% Median	8.5
25% Q1	7.0
10%	6.0
5%	5.5
1%	5.0
0% Min	5.0

Extreme Observations

----Lowest----		----Highest---	
Value	Obs	Value	Obs
5	1	11	13
6	18	11	19
6	12	12	4
7	17	13	10
7	6	15	3

Stem Leaf	#	Boxplot
14 0	1	
12 00	2	
10 000000	6	+-----+
8 00000	5	*--*--*
6 00000	5	+-----+
4 0	1	

-----+



The UNIVARIATE Procedure
 Variable: comp

Moments

N	20	Sum Weights	20
Mean	82.05	Sum Observations	1641
Std Deviation	10.8796043	Variance	118.365789
Skewness	-0.1912884	Kurtosis	-0.6309978
Uncorrected SS	136893	Corrected SS	2248.95
Coeff Variation	13.2597249	Std Error Mean	2.43275348

Basic Statistical Measures

Location		Variability	
Mean	82.05000	Std Deviation	10.87960
Median	82.00000	Variance	118.36579
Mode	76.00000	Range	40.00000
		Interquartile Range	15.00000

Tests for Location: Mu0=0

Test	-Statistic-	-----p Value-----	
Student's t	t 33.72722	Pr > t	<.0001
Sign	M 10	Pr >= M	<.0001
Signed Rank	S 105	Pr >= S	<.0001

Tests for Normality

Test	--Statistic---	-----p Value-----	
Shapiro-Wilk	W 0.973728	Pr < W	0.8308
Kolmogorov-Smirnov	D 0.117526	Pr > D	>0.1500
Cramer-von Mises	W-Sq 0.040483	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq 0.234627	Pr > A-Sq	>0.2500

Quantiles (Definition 5)

Quantile	Estimate
100% Max	100.0
99%	100.0
95%	99.0
90%	96.5
75% Q3	90.5
50% Median	82.0
25% Q1	75.5
10%	67.5
5%	63.0
1%	60.0
0% Min	60.0

Extreme Observations

----Lowest----		----Highest---	
Value	Obs	Value	Obs
60	1	91	13
66	12	91	19
69	18	95	7
73	10	98	8
75	6	100	15

Stem Leaf	#	Boxplot
10 0	1	
9 58	2	
9 0011	4	+-----+
8 58	2	
8 13	2	*-----*
7 56668	5	+-----+
7 3	1	
6 69	2	
6 0	1	

-----+-----+-----+-----+

Multiply Stem.Leaf by 10**+1

