

## The ANOVA Procedure

## Class Level Information

Class	Levels	Values
Occupation	11	Accountant Doctor Engineer Lawyer Manager Nurse Sales Representative Salesperson Scientist Software Engineer Teacher

Number of Observations Read	374
Number of Observations Used	374

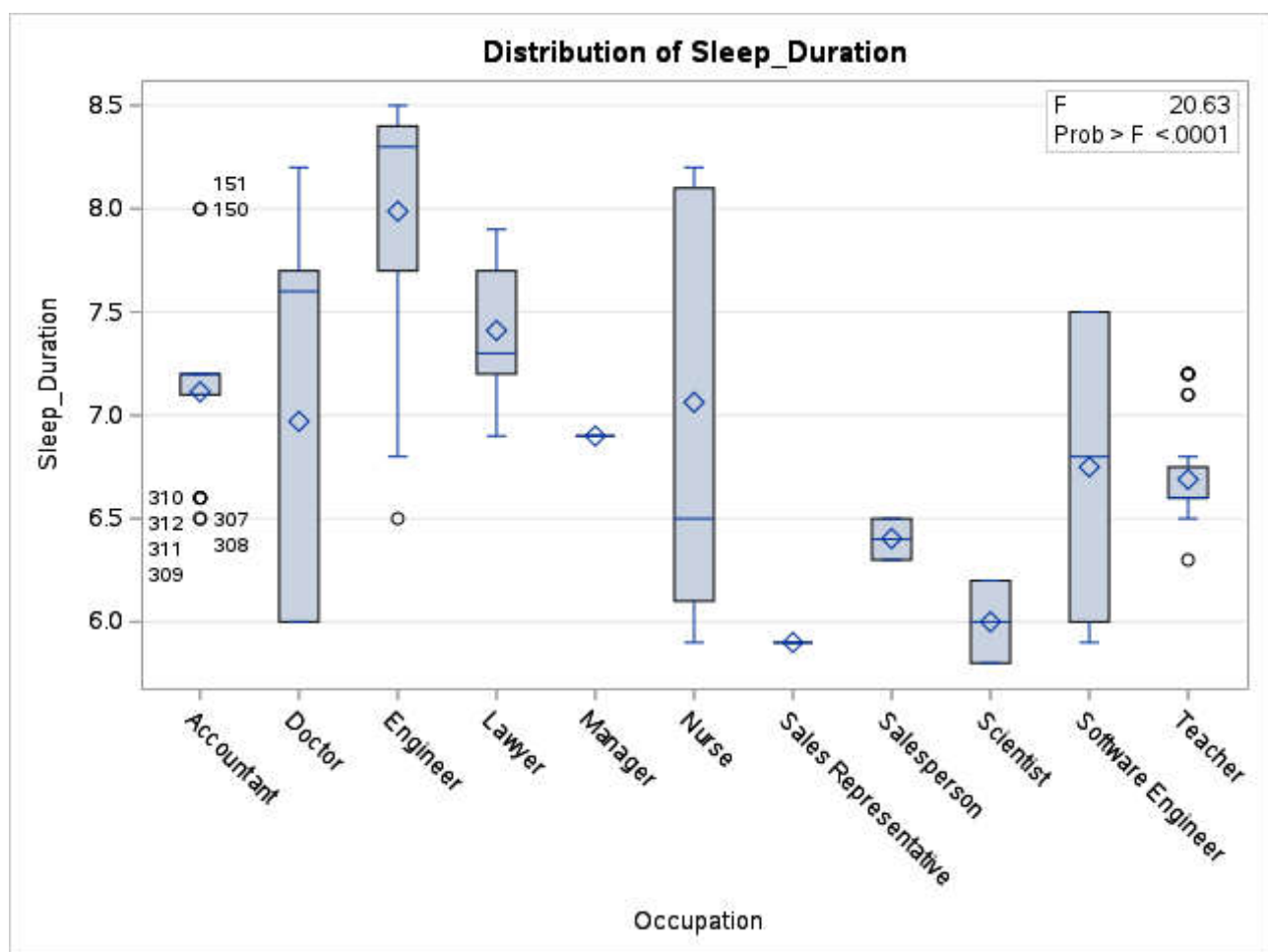
## The ANOVA Procedure

## Dependent Variable: Sleep\_Duration

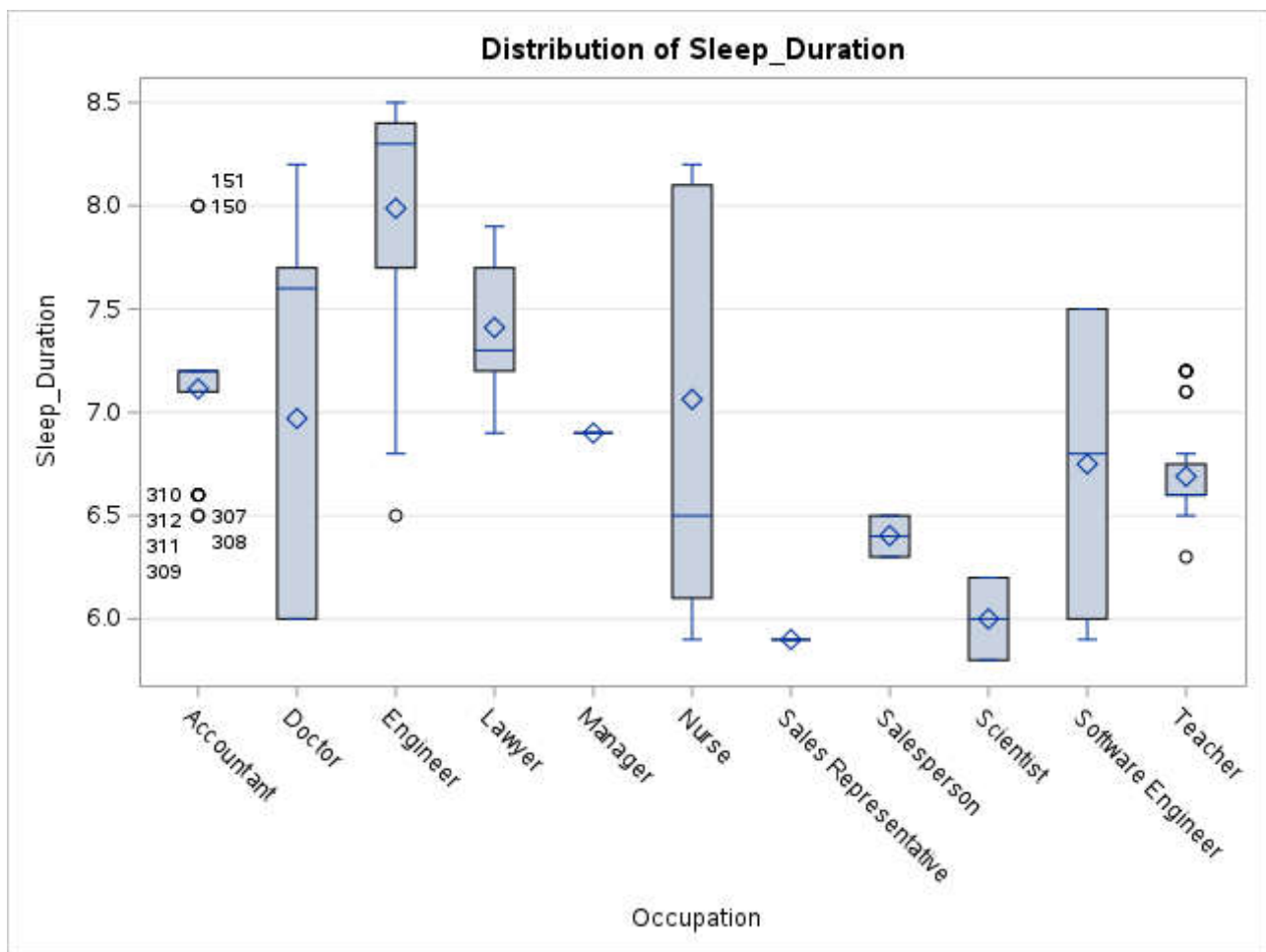
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	10	85.5634961	8.5563496	20.63	<.0001
Error	363	150.5714772	0.4147975		
Corrected Total	373	236.1349733			

R-Square	Coeff Var	Root MSE	Sleep_Duration Mean
0.362350	9.030286	0.644048	7.132086

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Occupation	10	85.56349609	8.55634961	20.63	<.0001



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### The ANOVA Procedure

#### Tukey's Studentized Range (HSD) Test for Sleep\_Duration

**Note:** This test controls the Type I experimentwise error rate.

Alpha	0.05
Error Degrees of Freedom	363
Error Mean Square	0.414797
Critical Value of Studentized Range	4.58121

Comparisons significant at the 0.05 level are indicated by \*\*\*.

Occupation Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
Engineer - Lawyer	0.5767	0.1745	0.9788	***
Engineer - Accountant	0.8738	0.4417	1.3059	***
Engineer - Nurse	0.9243	0.5655	1.2831	***
Engineer - Doctor	1.0169	0.6558	1.3780	***
Engineer - Manager	1.0873	-1.0155	3.1901	
Engineer - Software Engineer	1.2373	0.1615	2.3131	***
Engineer - Teacher	1.2973	0.8755	1.7191	***
Engineer - Salesperson	1.5842	1.1313	2.0371	***
Engineer - Scientist	1.9873	0.9115	3.0631	***
Engineer - Sales Representative	2.0873	0.5888	3.5858	***
Lawyer - Engineer	-0.5767	-0.9788	-0.1745	***
Lawyer - Accountant	0.2971	-0.1614	0.7557	
Lawyer - Nurse	0.3476	-0.0426	0.7378	
Lawyer - Doctor	0.4402	0.0479	0.8325	***
Lawyer - Manager	0.5106	-1.5978	2.6190	

Comparisons significant at the 0.05 level are indicated by ***.				
Occupation Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
Lawyer - Software Engineer	0.6606	-0.4260	1.7473	
Lawyer - Teacher	0.7206	0.2718	1.1694	***
Lawyer - Salesperson	1.0075	0.5294	1.4857	***
Lawyer - Scientist	1.4106	0.3240	2.4973	***
Lawyer - Sales Representative	1.5106	0.0043	3.0170	***
Accountant - Engineer	-0.8738	-1.3059	-0.4417	***
Accountant - Lawyer	-0.2971	-0.7557	0.1614	
Accountant - Nurse	0.0505	-0.3705	0.4715	
Accountant - Doctor	0.1431	-0.2799	0.5661	
Accountant - Manager	0.2135	-1.9008	2.3278	
Accountant - Software Engineer	0.3635	-0.7346	1.4616	
Accountant - Teacher	0.4235	-0.0524	0.8994	
Accountant - Salesperson	0.7104	0.2067	1.2140	***
Accountant - Scientist	1.1135	0.0154	2.2116	***
Accountant - Sales Representative	1.2135	-0.3011	2.7281	
Nurse - Engineer	-0.9243	-1.2831	-0.5655	***
Nurse - Lawyer	-0.3476	-0.7378	0.0426	
Nurse - Accountant	-0.0505	-0.4715	0.3705	
Nurse - Doctor	0.0926	-0.2552	0.4403	
Nurse - Manager	0.1630	-1.9376	2.2636	
Nurse - Software Engineer	0.3130	-0.7584	1.3844	
Nurse - Teacher	0.3730	-0.0374	0.7834	
Nurse - Salesperson	0.6599	0.2176	1.1022	***
Nurse - Scientist	1.0630	-0.0084	2.1344	
Nurse - Sales Representative	1.1630	-0.3323	2.6583	
Doctor - Engineer	-1.0169	-1.3780	-0.6558	***
Doctor - Lawyer	-0.4402	-0.8325	-0.0479	***
Doctor - Accountant	-0.1431	-0.5661	0.2799	
Doctor - Nurse	-0.0926	-0.4403	0.2552	
Doctor - Manager	0.0704	-2.0305	2.1714	
Doctor - Software Engineer	0.2204	-0.8517	1.2926	
Doctor - Teacher	0.2804	-0.1320	0.6929	
Doctor - Salesperson	0.5673	0.1231	1.0115	***
Doctor - Scientist	0.9704	-0.1017	2.0426	
Doctor - Sales Representative	1.0704	-0.4255	2.5663	
Manager - Engineer	-1.0873	-3.1901	1.0155	
Manager - Lawyer	-0.5106	-2.6190	1.5978	
Manager - Accountant	-0.2135	-2.3278	1.9008	
Manager - Nurse	-0.1630	-2.2636	1.9376	
Manager - Doctor	-0.0704	-2.1714	2.0305	
Manager - Software Engineer	0.1500	-2.1826	2.4826	
Manager - Teacher	0.2100	-1.9022	2.3222	
Manager - Salesperson	0.4969	-1.6218	2.6156	
Manager - Scientist	0.9000	-1.4326	3.2326	
Manager - Sales Representative	1.0000	-1.5552	3.5552	
Software Engineer - Engineer	-1.2373	-2.3131	-0.1615	***
Software Engineer - Lawyer	-0.6606	-1.7473	0.4260	
Software Engineer - Accountant	-0.3635	-1.4616	0.7346	
Software Engineer - Nurse	-0.3130	-1.3844	0.7584	
Software Engineer - Doctor	-0.2204	-1.2926	0.8517	
Software Engineer - Manager	-0.1500	-2.4826	2.1826	

Comparisons significant at the 0.05 level are indicated by ***.				
Occupation Comparison	Difference Between Means	Simultaneous 95% Confidence Limits		
Software Engineer - Teacher	0.0600	-1.0341	1.1541	
Software Engineer - Salesperson	0.3469	-0.7596	1.4533	
Software Engineer - Scientist	0.7500	-0.7253	2.2253	
Software Engineer - Sales Representative	0.8500	-0.9568	2.6568	
Teacher - Engineer	-1.2973	-1.7191	-0.8755	***
Teacher - Lawyer	-0.7206	-1.1694	-0.2718	***
Teacher - Accountant	-0.4235	-0.8994	0.0524	
Teacher - Nurse	-0.3730	-0.7834	0.0374	
Teacher - Doctor	-0.2804	-0.6929	0.1320	
Teacher - Manager	-0.2100	-2.3222	1.9022	
Teacher - Software Engineer	-0.0600	-1.1541	1.0341	
Teacher - Salesperson	0.2869	-0.2079	0.7817	
Teacher - Scientist	0.6900	-0.4041	1.7841	
Teacher - Sales Representative	0.7900	-0.7217	2.3017	
Salesperson - Engineer	-1.5842	-2.0371	-1.1313	***
Salesperson - Lawyer	-1.0075	-1.4857	-0.5294	***
Salesperson - Accountant	-0.7104	-1.2140	-0.2067	***
Salesperson - Nurse	-0.6599	-1.1022	-0.2176	***
Salesperson - Doctor	-0.5673	-1.0115	-0.1231	***
Salesperson - Manager	-0.4969	-2.6156	1.6218	
Salesperson - Software Engineer	-0.3469	-1.4533	0.7596	
Salesperson - Teacher	-0.2869	-0.7817	0.2079	
Salesperson - Scientist	0.4031	-0.7033	1.5096	
Salesperson - Sales Representative	0.5031	-1.0175	2.0238	
Scientist - Engineer	-1.9873	-3.0631	-0.9115	***
Scientist - Lawyer	-1.4106	-2.4973	-0.3240	***
Scientist - Accountant	-1.1135	-2.2116	-0.0154	***
Scientist - Nurse	-1.0630	-2.1344	0.0084	
Scientist - Doctor	-0.9704	-2.0426	0.1017	
Scientist - Manager	-0.9000	-3.2326	1.4326	
Scientist - Software Engineer	-0.7500	-2.2253	0.7253	
Scientist - Teacher	-0.6900	-1.7841	0.4041	
Scientist - Salesperson	-0.4031	-1.5096	0.7033	
Scientist - Sales Representative	0.1000	-1.7068	1.9068	
Sales Representative - Engineer	-2.0873	-3.5858	-0.5888	***
Sales Representative - Lawyer	-1.5106	-3.0170	-0.0043	***
Sales Representative - Accountant	-1.2135	-2.7281	0.3011	
Sales Representative - Nurse	-1.1630	-2.6583	0.3323	
Sales Representative - Doctor	-1.0704	-2.5663	0.4255	
Sales Representative - Manager	-1.0000	-3.5552	1.5552	
Sales Representative - Software Engineer	-0.8500	-2.6568	0.9568	
Sales Representative - Teacher	-0.7900	-2.3017	0.7217	
Sales Representative - Salesperson	-0.5031	-2.0238	1.0175	
Sales Representative - Scientist	-0.1000	-1.9068	1.7068	