Thomas Pattara
SAS Homework 10

19.2 Run the same two procedures shown in Problem 1, except create a contents file, a body file, and a frame file.

```
data prob2;
set '/home/thomaspattara0/sasuser.v94/college.sas7bdat';
ods listing close;
ods html body = 'prob19_2_body.html'
contents = 'prob19_2_contents.html'
frame = 'prob19_2_frame.html'
path = '/home/thomaspattara0/sasuser.v94' (url=none);;
title "Using ODS to Create a Table of Contents";
 proc print data=prob2(obs=8) noobs;
 run;
 proc means data=prob2 n mean maxdec=2;
 var GPA ClassRank;
 run;
 ods html close;
 ods listing;
```

Using ODS to Create a Table of Contents

StudentID	Gender	SchoolSize	Scholarship	GPA	ClassRank
07390	M		N	4.00	72
09591	F	M	N	4.00	69
08565	F	S	N	3.80	52
09055	F	S	N	3.62	72
03606	M	L	N	3.44	83
02927	F	S	Y	2.29	80
02856	M	M	N	3.96	43
02148	F	S	N	3.37	87

Using ODS to Create a Table of Contents

The MEANS Procedure

Variable	N	Mean
GPA	94	3.51
ClassRank	88	71.72

19.6 Run the same PROC UNIVARIATE as in Problem 5. Issue two ODS statements: one to select the MOMENTS output object and the other to send this output to a SAS data set. Run PROC PRINT to see a listing of this data set.

```
ods listing close;

*ods select moments;

ods output moments = uni_data;

proc univariate data=survey;

var Age Salary;

run;

ods listing;

ods output close;

title "ODS Produced Data Set";

proc print data=uni_data;

run;
```

The UNIVARIATE Procedure
Variable: Age

Moments			
N	7	Sum Weights	7
Mean	44.7142857	Sum Observations	313

Moments			
Std Deviation	18.1173424	Variance	328.238095
Skewness	-0.1565451	Kurtosis	-1.6741009
Uncorrected SS	15965	Corrected SS	1969.42857
Coeff Variation	40.5180181	Std Error Mean	6.84771177

Basic Statistical Measures			
Location		Variability	
Mean	44.71429	Std Deviation	18.11734
Median	45.00000	Variance	328.23810
Mode	.	Range	45.00000
		Interquartile Range	40.00000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	6.529814	Pr > |t|	0.0006
Sign	M	3.5	Pr >= |M|	0.0156
Signed Rank	S	14	Pr >= |S|	0.0156

Quantiles (Definition 5)	
Level	Quantile
100% Max	67
99%	67
95%	67
90%	67

Quantiles (Definition 5)	
Level	**Quantile**
75% Q3	63
50% Median	45
25% Q1	23
10%	22
5%	22
1%	22
0% Min	22

Extreme Observations			
Lowest		**Highest**	
Value	**Obs**	**Value**	**Obs**
22	5	38	3
23	1	45	7
38	3	55	2
45	7	63	6
55	2	67	4

The UNIVARIATE Procedure
Variable: Salary

Moments			
N	7	**Sum Weights**	7
Mean	65397.5714	**Sum Observations**	457783

Moments			
Std Deviation	38253.6235	Variance	1463339715
Skewness	0.46005621	Kurtosis	-0.6887756
Uncorrected SS	3.87179E10	Corrected SS	8780038288
Coeff Variation	58.4939512	Std Error Mean	14458.5107

Basic Statistical Measures			
Location		Variability	
Mean	65397.57	Std Deviation	38254
Median	76100.00	Variance	1463339715
Mode	.	Range	104940
		Interquartile Range	62000

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	4.523119	Pr > |t|	0.0040
Sign	M	3.5	Pr >= |M|	0.0156
Signed Rank	S	14	Pr >= |S|	0.0156

Quantiles (Definition 5)	
Level	Quantile
100% Max	128000
99%	128000
95%	128000
90%	128000

Quantiles (Definition 5)	
Level	Quantile
75% Q3	90000
50% Median	76100
25% Q1	28000
10%	23060
5%	23060
1%	23060
0% Min	23060

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
23060	5	36500	3
28000	1	76100	7
36500	3	76123	2
76100	7	90000	6
76123	2	128000	4

ODS Produced Data Set

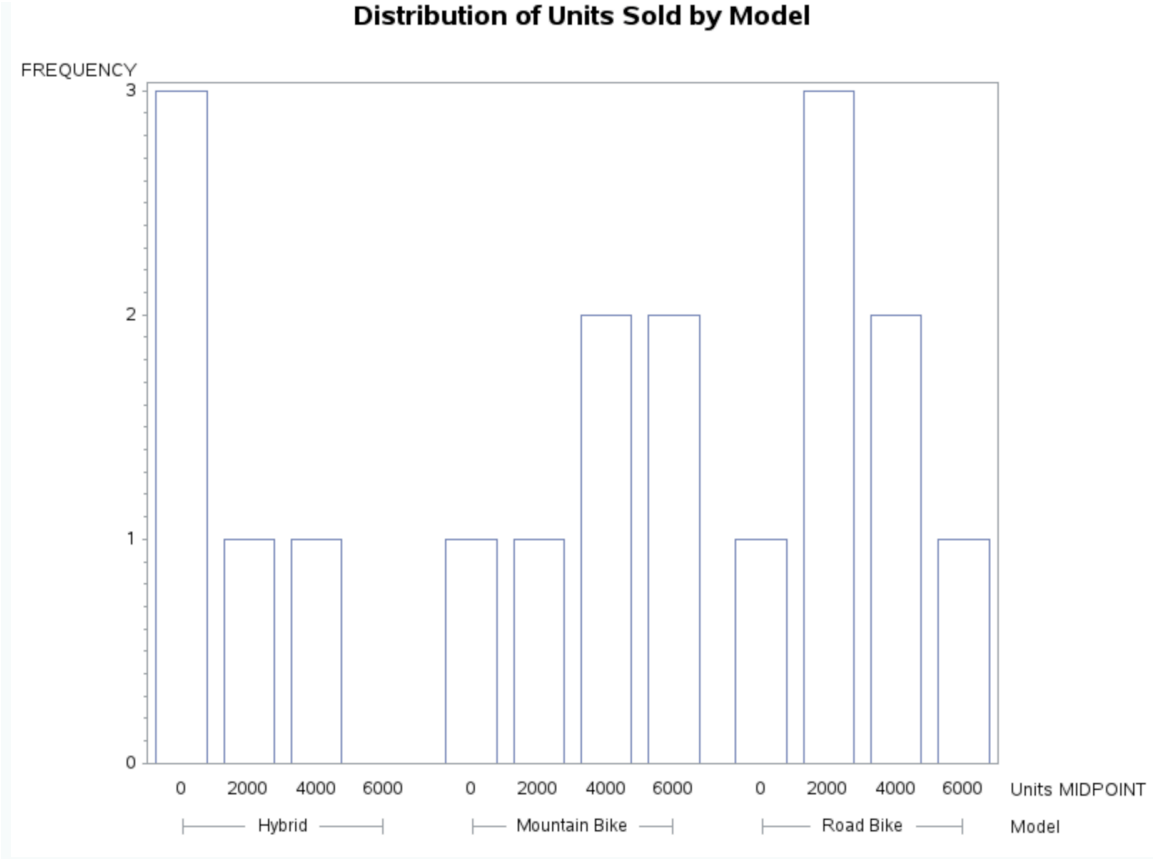
Obs	VarName	Label1	cValue1	nValue1	Label2	cValue2	nValue2
1	Age	N	7	7.000000	Sum Weights	7	7.000000
2	Age	Mean	44.714285	44.714286	Sum Observatio	313	313.000000

Obs	VarName	Label1	cValue1	nValue1	Label2	cValue2	nValue2
			7		ns		
3	Age	Std Deviation	18.1173424	18.117342	Variance	328.238095	328.238095
4	Age	Skewness	-0.1565451	-0.156545	Kurtosis	-1.6741009	-1.674101
5	Age	Uncorrected SS	15965	15965	Corrected SS	1969.42857	1969.428571
6	Age	Coeff Variation	40.5180181	40.518018	Std Error Mean	6.84771177	6.847712
7	Salary	N	7	7.000000	Sum Weights	7	7.000000
8	Salary	Mean	65397.5714	65398	Sum Observations	457783	457783
9	Salary	Std Deviation	38253.6235	38254	Variance	1463339715	1463339715
10	Salary	Skewness	0.4600562 1	0.460056	Kurtosis	-0.6887756	-0.688776
11	Salary	Uncorrected SS	3.87179E10	38717934729	Corrected SS	8780038288	8780038288
12	Salary	Coeff Variation	58.4939512	58.493951	Std Error Mean	14458.5107	14459

20.4 Again, using the Bicycles data set, show the distribution of units sold (Units) for each value of Model.

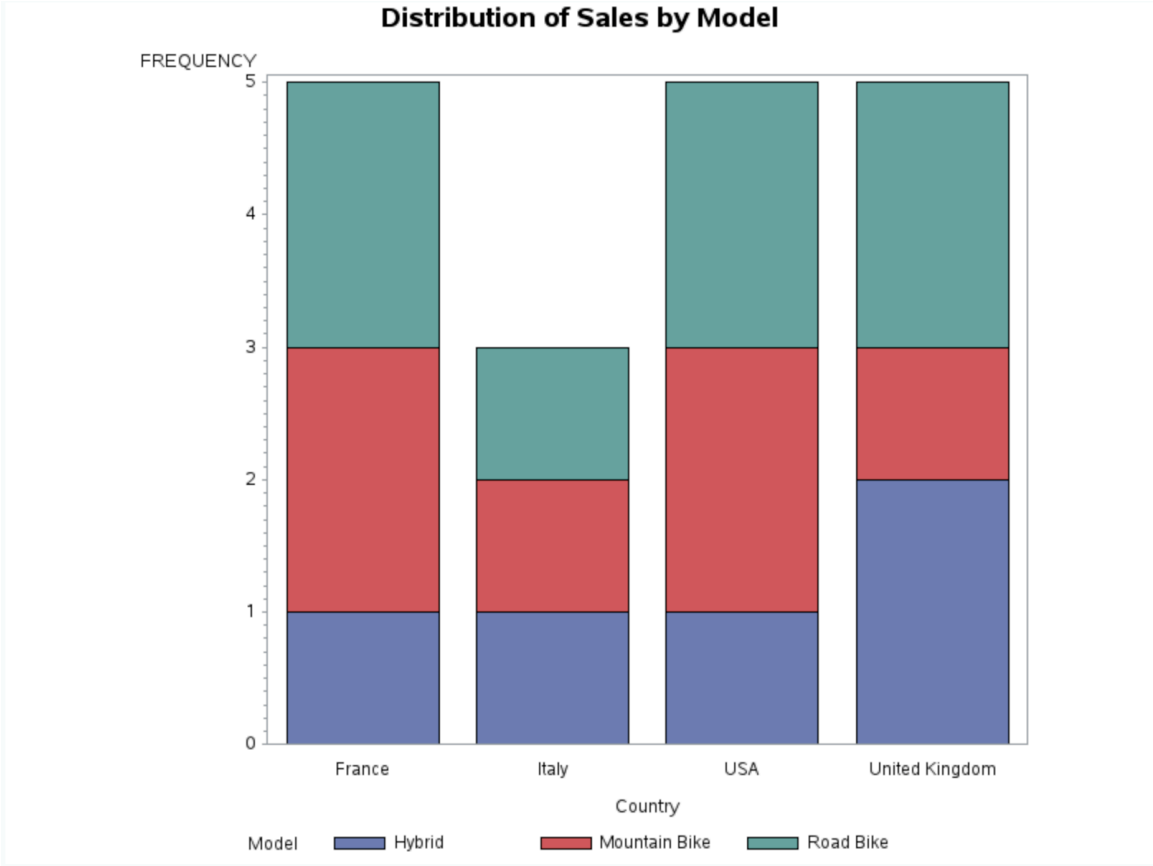
```
data prob4;
set '/home/thomaspattara0/sasuser.v94/bicycles.sas7bdat';
options ps=54;
title "Distribution of Units Sold by Model";
pattern value=empty;
```

```
proc gchart data=prob4;
vbar Units / midpoints = 0 to 6000 by 2000
group = Model;
run;
quit;
```



20.5 Using the SAS data set Bicycles, produce a vertical bar chart showing a frequency distribution of Country. Within each bar, show the distribution of Model.

```
data prob5;
set '/home/thomaspattara0/sasuser.v94/bicycles.sas7bdat';
title "Distribution of Sales by Model";
pattern value=solid;
proc gchart data=prob5;
vbar Country / subgroup = Model;
run;
quit;
```


Distribution of Sales by Model
FREQUENCY
5
4
3
2
1
0
France
Italy
USA
United Kingdom
Country
Model
Hybrid
Mountain Bike
Road Bike