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2019120045

EXPERIMENT 2

The dataset used is the Heart dataset which is inbuild in the SAS software. It has the patient'sliving status, heart rate, cholesterol level, weight status and many other attributes.

Code:

```
title "Descriptive Analysis on cholestrol based on weight status";
proc means data=sashelp.heart;
        class Weight_Status;
        var Cholesterol;
run;
TITLE"Histrogram Plot for cholestrol by weight status";
PROC univariate data=sashelp.heart;
        class Weight_Status;
        var Cholesterol;
        histogram Cholesterol;
        inset SKEWNESS KURTOSIS;

run;
TITLE"Box Plot for Cholestrol by Weight Status";
proc sgplot data=sashelp.heart;
        vbox Cholesterol/ category=Weight_Status;
run;
```

1)

```
title "Descriptive Analysis on cholestrol based on weight status";
proc means data=sashelp.heart;
              class Weight_Status;
              var Cholesterol;
run;
```

Output:

Descriptive Analysis on cholestrol based on weight status

The MEANS Procedure

Analysis Variable : Cholesterol						
Weight Status	N Obs	N	Mean	Std Dev	Minimum	Maximum
Normal	1472	1430	218.5573427	42.4990413	118.0000000	568.0000000
Overweight	3550	3445	232.1056604	45.3764405	96.0000000	534.0000000
Underweight	181	176	207.2727273	38.5647440	134.0000000	343.0000000

2) Individual Analysis of different weight categories:

For Normal Weight Category:

The UNIVARIATE Procedure
Variable: Cholesterol
Weight_Status = Normal

Moments			
N	1430	Sum Weights	1430
Mean	218.557343	Sum Observations	312537
Std Deviation	42.4990413	Variance	1806.16851
Skewness	1.06758364	Kurtosis	4.11855754
Uncorrected SS	70888271	Corrected SS	2581014.8
Coeff Variation	19.445259	Std Error Mean	1.12385715

Basic Statistical Measures			
Location		Variability	
Mean	218.5573	Std Deviation	42.49904
Median	213.0000	Variance	1806
Mode	200.0000	Range	450.00000
		Interquartile Range	55.00000

Quantiles (Definition 5)	
Level	Quantile
100% Max	568.0
99%	342.0
95%	292.0
90%	274.5
75% Q3	243.0
50% Median	213.0
25% Q1	188.0
10%	170.0
5%	159.0
1%	145.0
0% Min	118.0

For Overweight Weight Category:

The UNIVARIATE Procedure
Variable: Cholesterol
Weight_Status = Overweight

Moments			
N	3445	Sum Weights	3445
Mean	232.10566	Sum Observations	799604
Std Deviation	45.3764405	Variance	2059.02135
Skewness	0.74039929	Kurtosis	1.65717081
Uncorrected SS	192683884	Corrected SS	7091269.54
Coeff Variation	19.5499069	Std Error Mean	0.77310025

Basic Statistical Measures			
Location		Variability	
Mean	232.1057	Std Deviation	45.37644
Median	228.0000	Variance	2059
Mode	200.0000	Range	438.00000
		Interquartile Range	59.00000

Quantiles (Definition 5)	
Level	Quantile
100% Max	534
99%	355
95%	313
90%	292
75% Q3	259
50% Median	228
25% Q1	200
10%	178
5%	166
1%	146
0% Min	96

For Under Weight Category:

The UNIVARIATE Procedure
Variable: Cholesterol
Weight_Status = Underweight

Moments			
N	176	Sum Weights	176
Mean	207.272727	Sum Observations	36480
Std Deviation	38.564744	Variance	1487.23948
Skewness	0.54515605	Kurtosis	0.50463599
Uncorrected SS	7821576	Corrected SS	260266.909
Coeff Variation	18.6057975	Std Error Mean	2.90692695

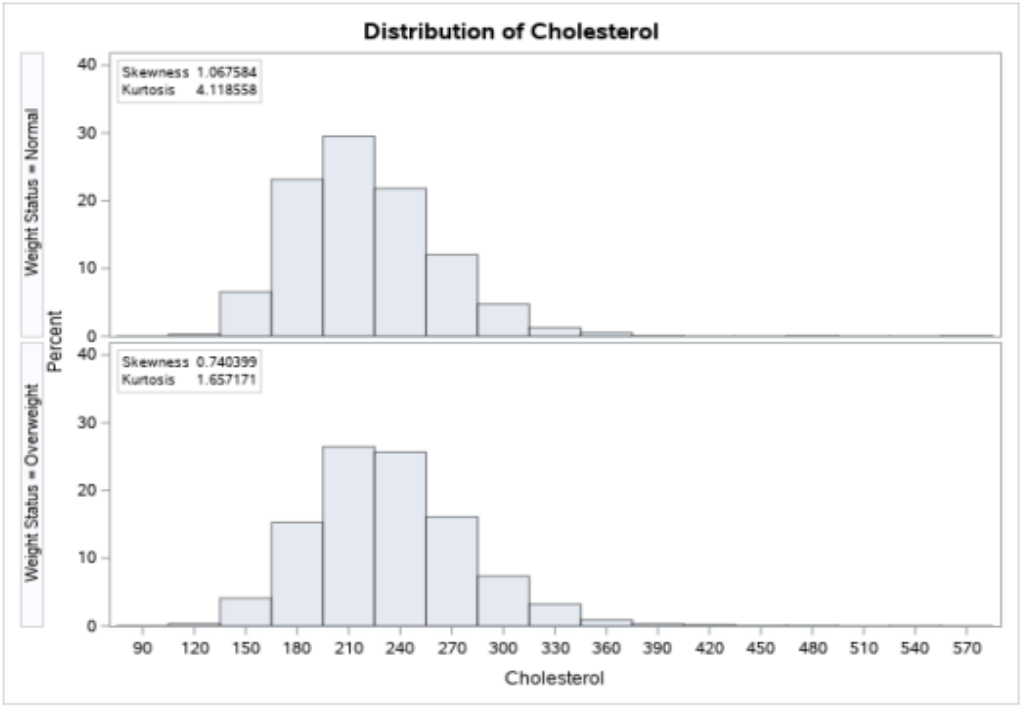
Basic Statistical Measures			
Location		Variability	
Mean	207.2727	Std Deviation	38.56474
Median	201.5000	Variance	1487
Mode	192.0000	Range	209.00000
		Interquartile Range	52.00000

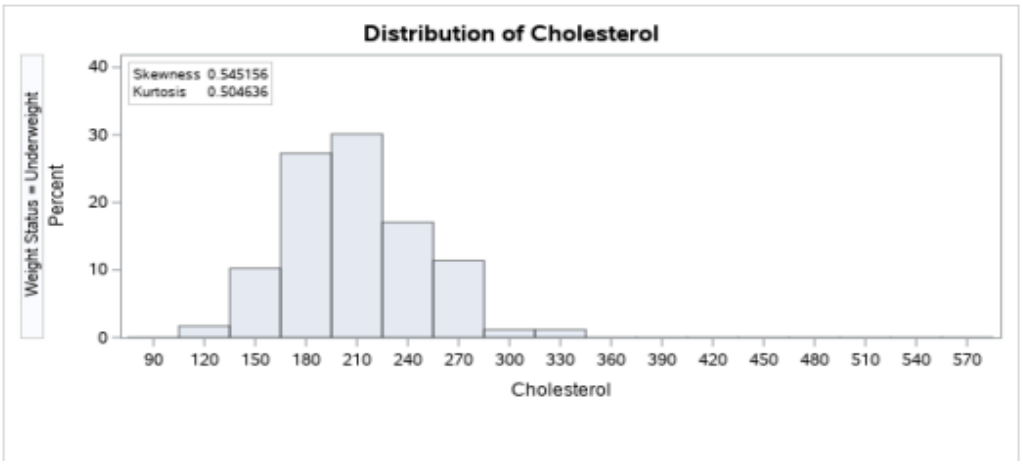
Quantiles (Definition 5)	
Level	Quantile
100% Max	343.0
99%	330.0
95%	271.0
90%	260.0
75% Q3	231.5
50% Median	201.5
25% Q1	179.5
10%	159.0
5%	150.0
1%	134.0
0% Min	134.0

PLOTS:
HISTROGRAM PLOT FOR CHOLESTEROL BY WEIGHT STATUS:

Histrogram Plot for cholestrol by weight status

The UNIVARIATE Procedure





Box Plot FOR Cholesterol by Weight_Status