PRACTICAL 1 SPSS

Q1)
AGE VS WEIGHT Scatterplot

Simple Scatter of Weight in kgs by Age
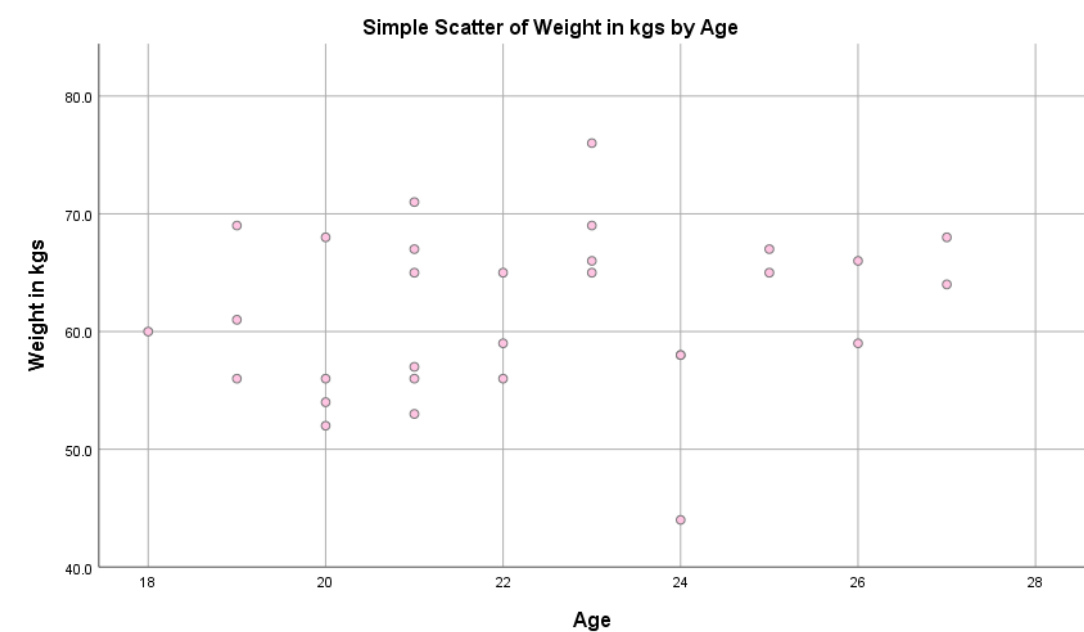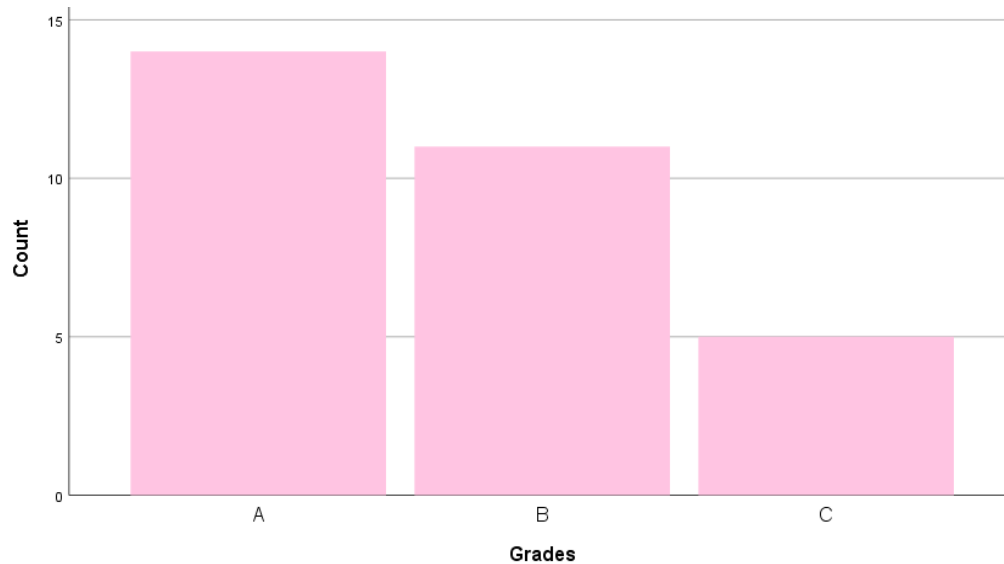
NAME VS SCORES Bar Chart
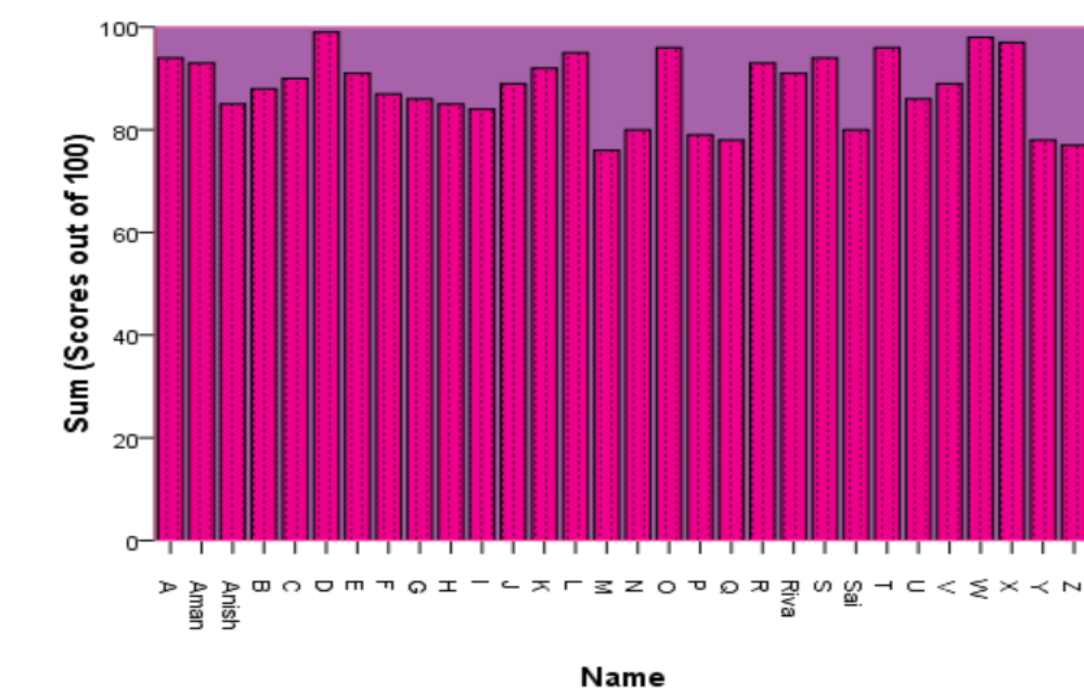
GRADES Bar Chart

HEIGHTS Histrogram

WEIGHTS Histogram with distribution curve

Simple Histogram of Weight in kgs

Mean = 61.667
Std. Dev. = 6.8447
N = 30

AGE Boxplot

1-D Boxplot of Age
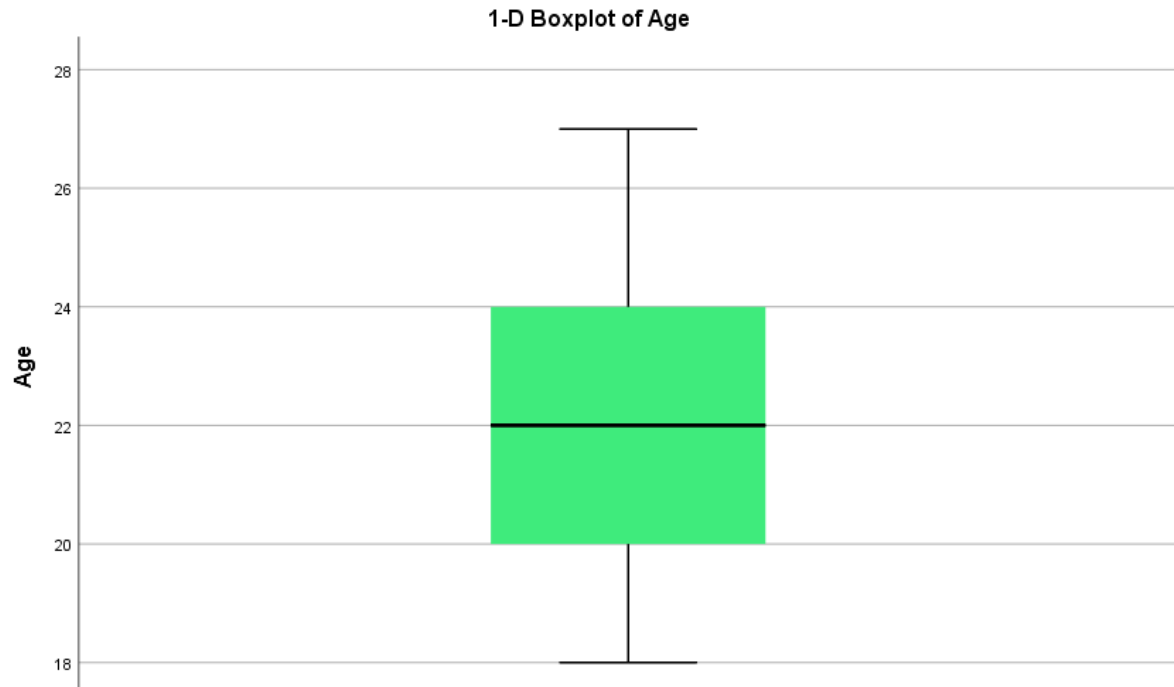
GRADES VS GENDER AND REGION Crosstab

		Gender							
		Female				Male			
		Region				Region			
		East	North	South	West	East	North	South	West
		Count	Count	Count	Count	Count	Count	Count	Count
Grades	A	1	1	4	3	1	1	1	2
	B	1	0	1	1	2	4	0	2
	C	0	0	1	1	2	0	1	0

GRADES VS REGION Crosstab

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Grades * Region	31	100.0%	0	0.0%	31	100.0%

Grades * Region Crosstabulation

Count

			Region				Total
			East	North	South	West	
Grades		1	0	0	0	0	1
	A	0	2	2	5	5	14
	B	0	3	4	1	3	11
	C	0	2	0	2	1	5
Total		1	7	6	8	9	31

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.453[a]	12	.000
Likelihood Ratio	16.153	12	.184
N of Valid Cases	31		

a. 20 cells (100.0%) have expected count less than 5. The minimum
expected count is .03.

Bar Chart
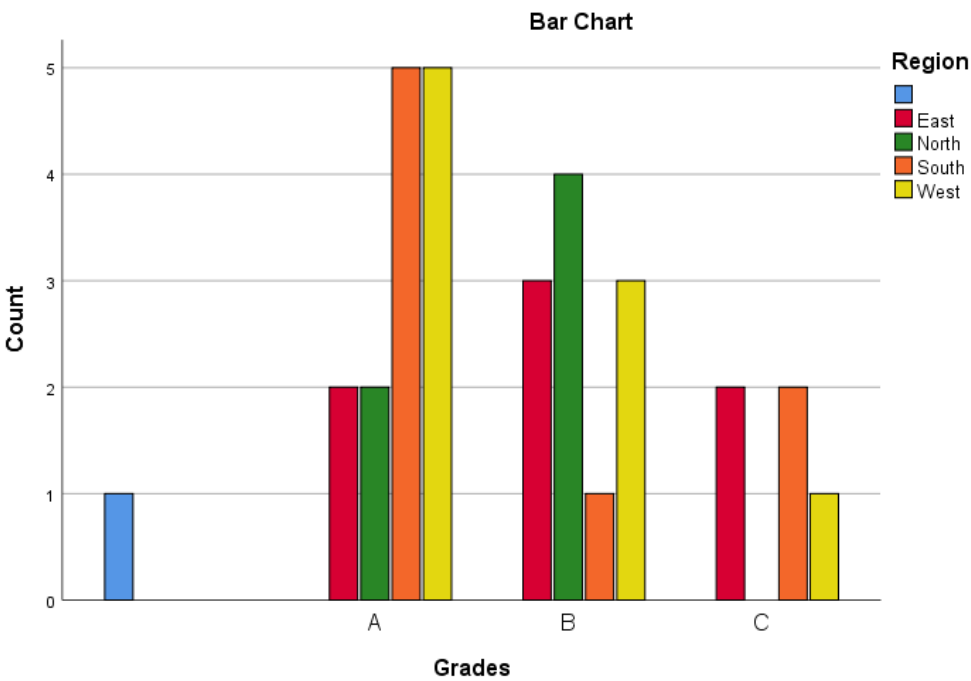
Frequencies for Catergorical variables

Statistics

		Name	Gender	Region	Grades
N	Valid	31	31	31	31
	Missing	0	0	0	0

Frequency Table

Name

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	3.2	3.2	3.2
	A	1	3.2	3.2	6.5
	Aman	1	3.2	3.2	9.7
	Anish	1	3.2	3.2	12.9
	B	1	3.2	3.2	16.1
	C	1	3.2	3.2	19.4
	D	1	3.2	3.2	22.6
	E	1	3.2	3.2	25.8
	F	1	3.2	3.2	29.0
	G	1	3.2	3.2	32.3
	H	1	3.2	3.2	35.5
	I	1	3.2	3.2	38.7
	J	1	3.2	3.2	41.9
	K	1	3.2	3.2	45.2
	L	1	3.2	3.2	48.4
	M	1	3.2	3.2	51.6
	N	1	3.2	3.2	54.8
	O	1	3.2	3.2	58.1
	P	1	3.2	3.2	61.3
	Q	1	3.2	3.2	64.5
	R	1	3.2	3.2	67.7
	Riva	1	3.2	3.2	71.0
	S	1	3.2	3.2	74.2
	Sai	1	3.2	3.2	77.4
	T	1	3.2	3.2	80.6
	U	1	3.2	3.2	83.9
	V	1	3.2	3.2	87.1
	W	1	3.2	3.2	90.3
	X	1	3.2	3.2	93.5
	Y	1	3.2	3.2	96.8
	Z	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	3.2	3.2	3.2
	Female	14	45.2	45.2	48.4
	Male	16	51.6	51.6	100.0
	Total	31	100.0	100.0	

Region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	3.2	3.2	3.2
	East	7	22.6	22.6	25.8
	North	6	19.4	19.4	45.2
	South	8	25.8	25.8	71.0
	West	9	29.0	29.0	100.0
	Total	31	100.0	100.0	

Grades

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	3.2	3.2	3.2
	A	14	45.2	45.2	48.4
	B	11	35.5	35.5	83.9
	C	5	16.1	16.1	100.0
	Total	31	100.0	100.0	

Descriptives for quantitative variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Variance
Age	30	18	27	22.23	6.185
Earn_per_month	30	100.0	300.0	215.500	2604.052
Height in cms	30	153.0	170.0	161.133	18.120
Scores out of 100	30	76	99	88.20	46.786
Spend_per_month	30	50.0	200.0	129.333	1227.126
Weight in kgs	30	44.0	76.0	61.667	46.851
Valid N (listwise)	30				

The average age of a student is 22. A student earns on an average approximately 215 per month. The average score of a student is 88.

Q2)
a) SMOKERS Bar Chart
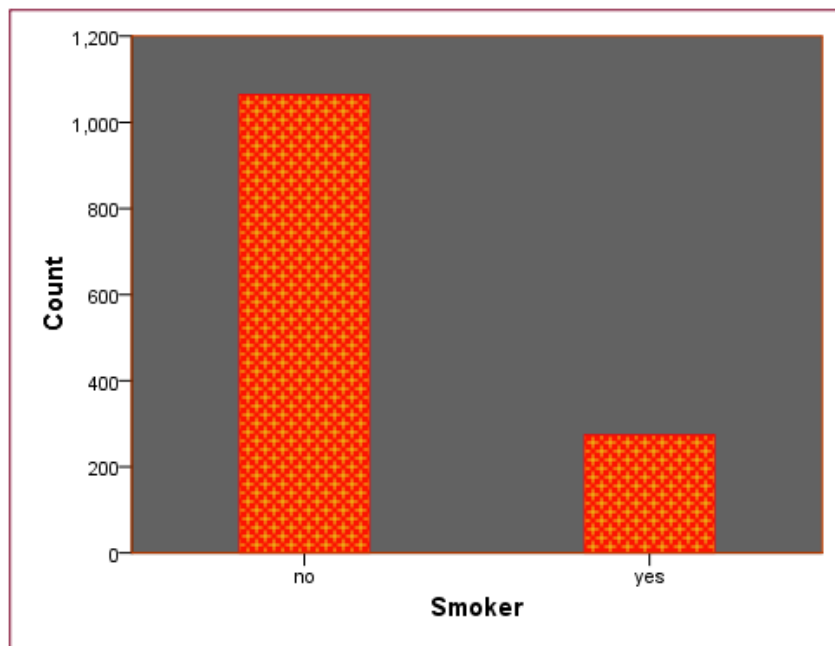
The above bar chart depicts the number of smokers. There are less number of smokers in the sample.

b) REGION Pie Chart
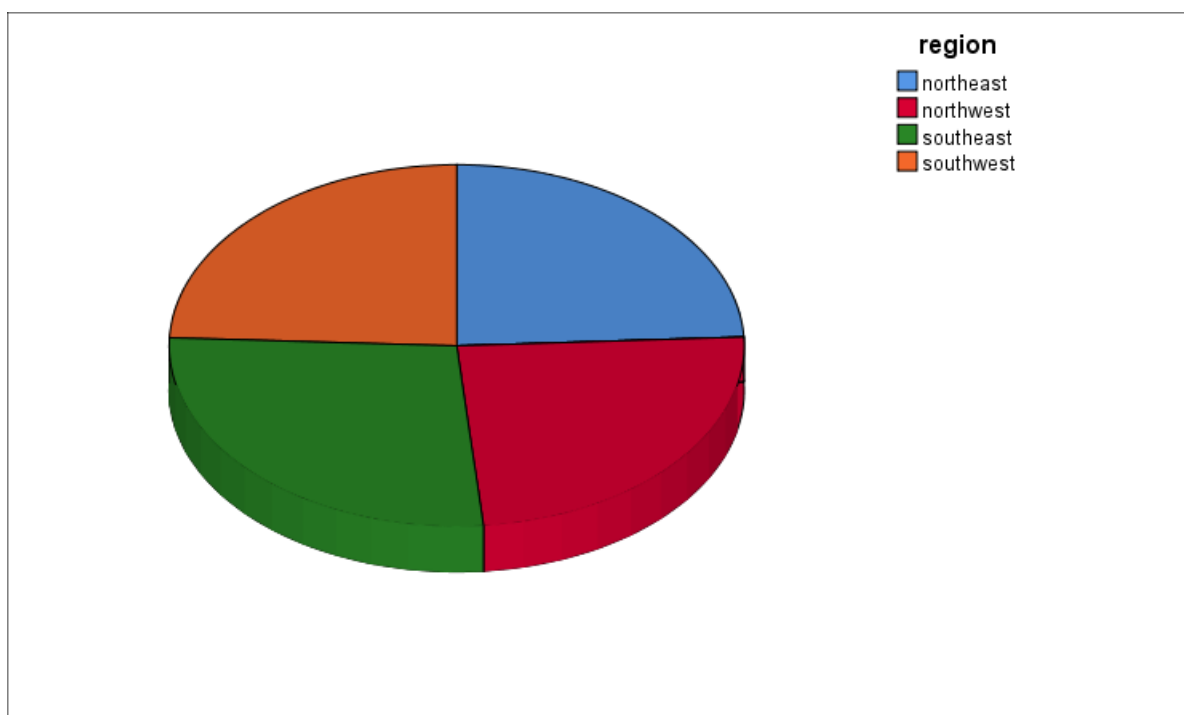
c) SCATTERPLOT MATRIX OF Age, BMI, Charges

Scatterplot Matrix age,bmi,charges
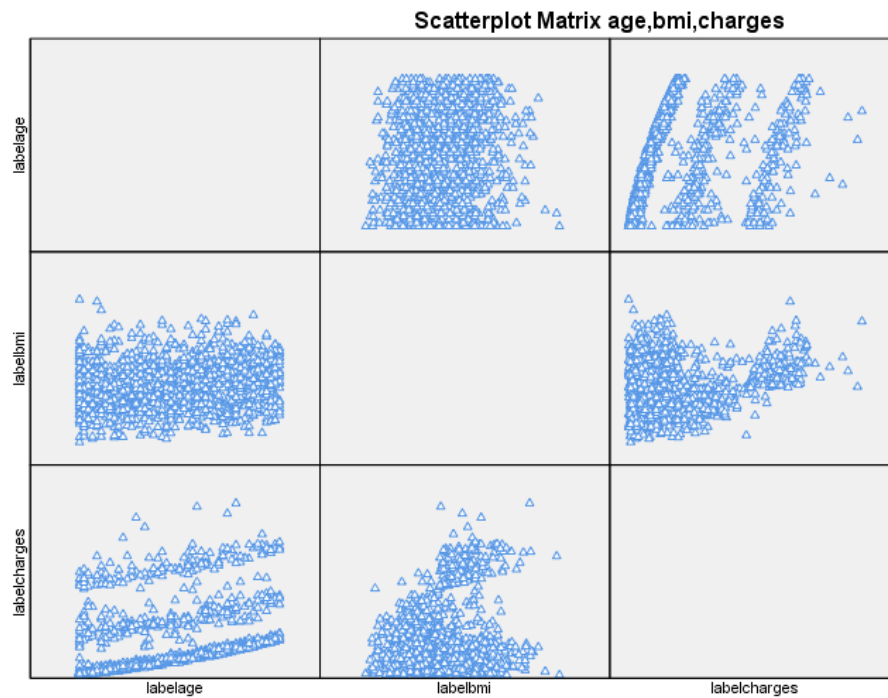
d) HISTOGRAM of Charges
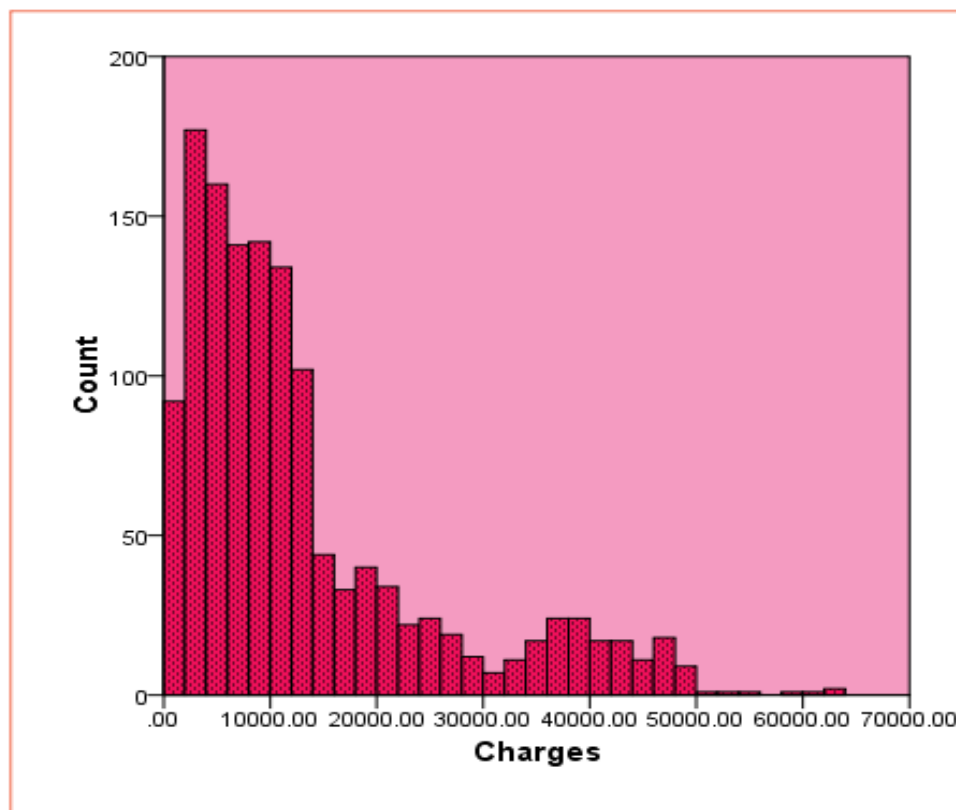
HISTOGRAM of BMI

BMI follows a normal distribution
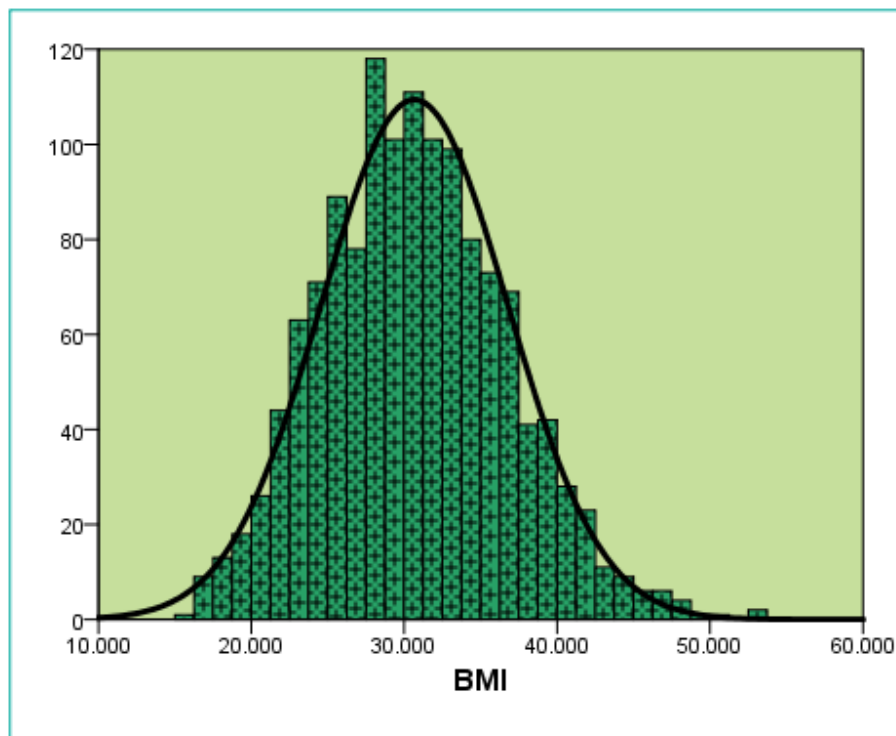
e) BMI AND CHARGES Boxplot

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
charges	1338	100.0%	0	0.0%	1338	100.0%
bmi	1338	100.0%	0	0.0%	1338	100.0%
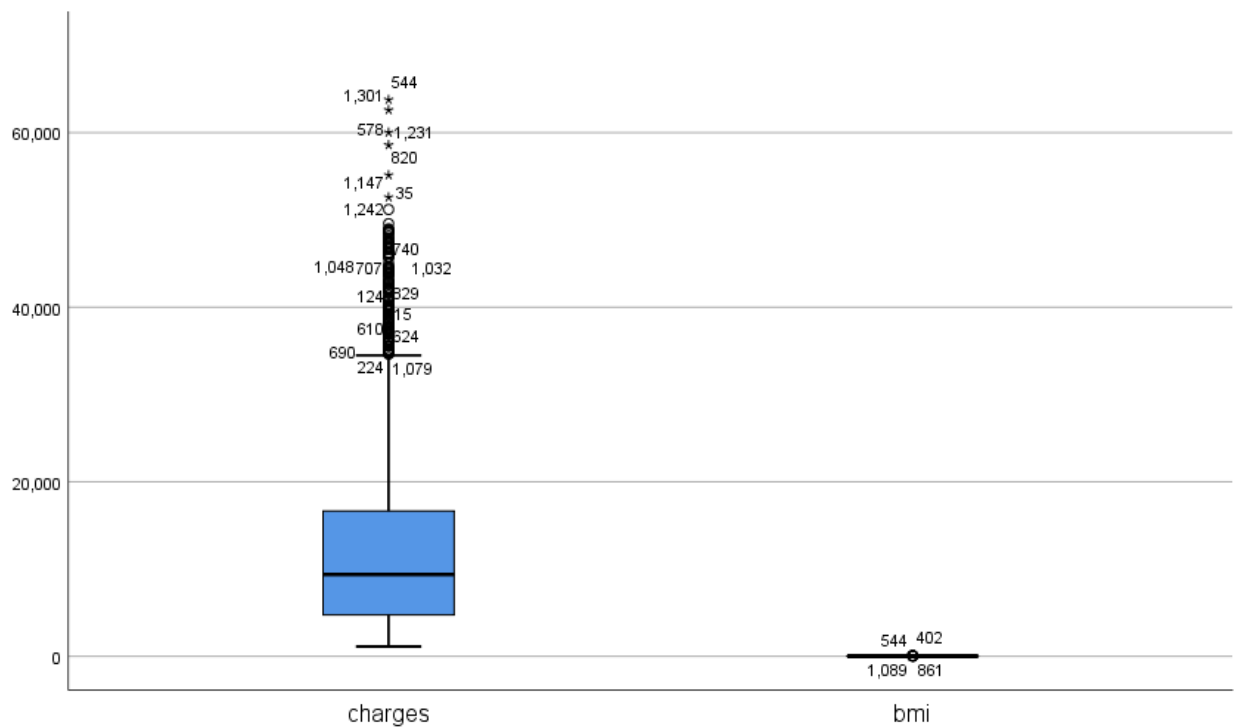
f) **BMI Histogram**

g)LINE CHART Age

Age Line Chart

Mean = 39.21
Std. Dev. = 14.05
N = 1,338
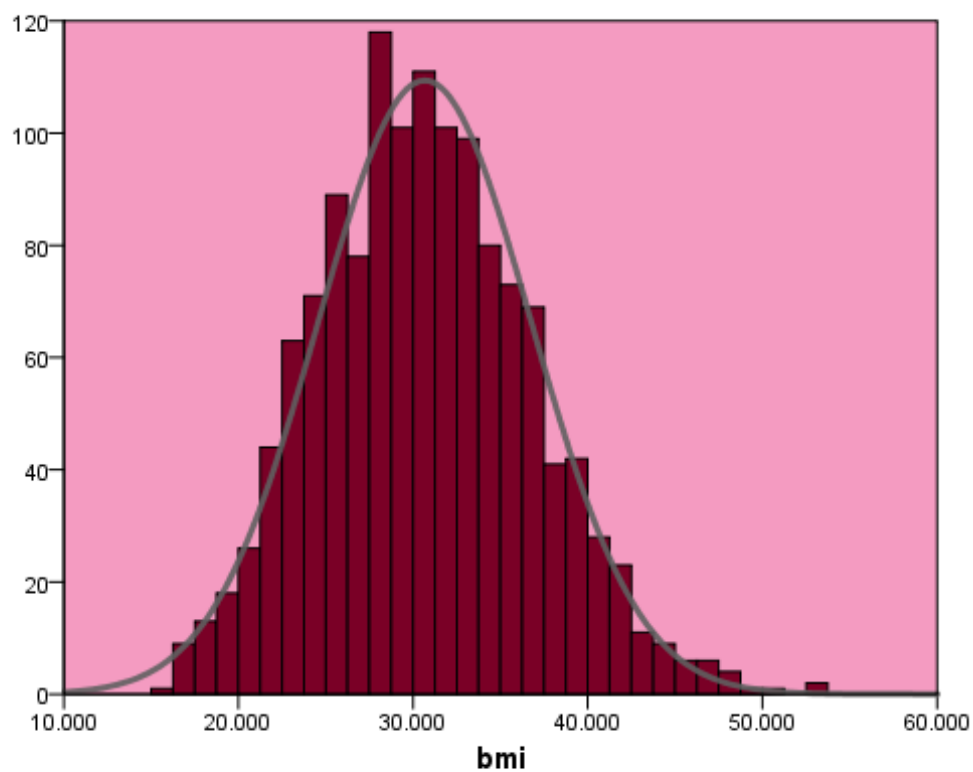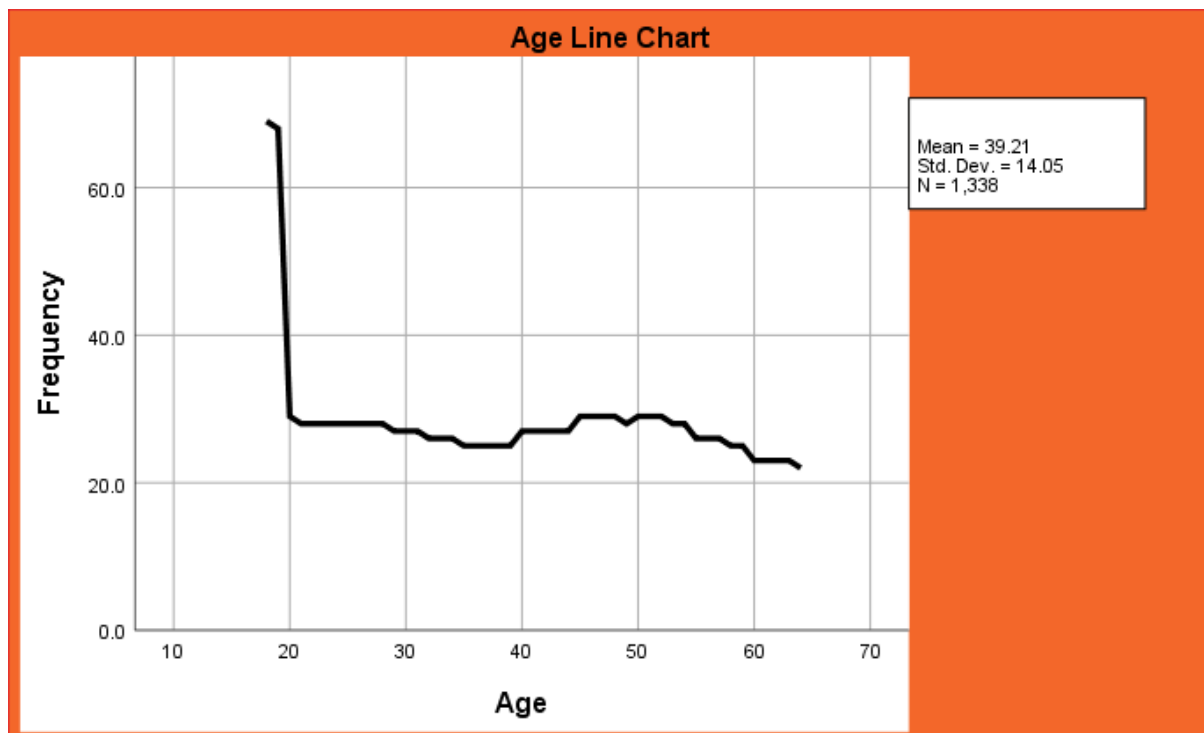
h)Frequency table of Region and Children

Statistics

		children	region
N	Valid	1338	1338
	Missing	0	0

Frequency Table

children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	574	42.9	42.9	42.9
	1	324	24.2	24.2	67.1
	2	240	17.9	17.9	85.1
	3	157	11.7	11.7	96.8
	4	25	1.9	1.9	98.7
	5	18	1.3	1.3	100.0
	Total	1338	100.0	100.0	

region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	northeast	324	24.2	24.2	24.2
	northwest	325	24.3	24.3	48.5
	southeast	364	27.2	27.2	75.7
	southwest	325	24.3	24.3	100.0
	Total	1338	100.0	100.0	

i) <u>Descriptives statistics for Age, BMI and Charges</u>

Descriptive Statistics

	N	Minimum	Maximum	Mean	Variance
age	1338	18	64	39.21	197.401
bmi	1338	15.960	53.130	30.66340	37.188
charges	1338	1121.87	63770.43	13270.4223	146652372.153
Valid N (listwise)	1338				

j) <u>Explore Charges with factor Smoker</u>

smoker

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	smoker	N	Percent	N	Percent	N	Percent
charges	no	1064	100.0%	0	0.0%	1064	100.0%
	yes	274	100.0%	0	0.0%	274	100.0%

Descriptives

	smoker			Statistic	Std. Error
Charges	no	Mean		8434.2683	183.75117
		95% Confidence Interval for Mean	Lower Bound	8073.7121	
			Upper Bound	8794.8245	
		5% Trimmed Mean		7811.0211	
		Median		7345.4053	
		Variance		35925420.496	
		Std. Deviation		5993.78182	
		Minimum		1121.87	
		Maximum		36910.61	
		Range		35788.73	
		Interquartile Range		7379.69	
		Skewness		1.538	.075
		Kurtosis		3.149	.150
	yes	Mean		32050.2318	697.25036
		95% Confidence Interval for Mean	Lower Bound	30677.5609	
			Upper Bound	33422.9028	
		5% Trimmed Mean		31820.4234	
		Median		34456.3485	
		Variance		133207311.206	
		Std. Deviation		11541.54718	
		Minimum		12829.46	
		Maximum		63770.43	
		Range		50940.97	
		Interquartile Range		20283.24	
		Skewness		.128	.147
		Kurtosis		-1.037	.293

charges

Stem-and-Leaf Plots

```
charges Stem-and-Leaf Plot for
smoker= no

 Frequency     Stem &  Leaf

     92.00         1 .  11111222255666666666666777777777788888999999&
     99.00         2 .  0001111111122222223333444444555666777777888899
     78.00         3 .  0001112222233334445555567778889999
     90.00         4 .  000111222333344444455555666677777788888999
     70.00         5 .  00011122222333334444456667789999
     73.00         6 .  001111122233334444555666677778899
     68.00         7 .  00111111222233334444556666777799&
     78.00         8 .  00001122222333444555555566667788889999
     64.00         9 .  0111222233344455566677788888899
     60.00        10 .  001112233444555667777889999
     74.00        11 .  00001122233333444555566777888888999
     56.00        12 .  001122223344455666678999 9
     43.00        13 .  001122344446788899&
     28.00        14 .  001223334449&
      7.00        15 .  1&&
      5.00        16 .  0&
      4.00        17 .  &&
      8.00        18 .  89&
      6.00        19 .  4&&
      8.00        20 .  47&&
      5.00        21 .  &&
      2.00        22 .  &
     46.00 Extremes    (>=22494)

 Stem width:   1000.00
 Each leaf:        2 case(s)



 & denotes fractional leaves.



charges Stem-and-Leaf Plot for
smoker= yes

 Frequency     Stem &  Leaf

      7.00         1 .  2334444
     55.00         1 .
55555666666666667777777777788888888888999999999999999
     44.00         2 .  00000000111111111111222223333333444444444
     16.00         2 .  5556667777888999
     22.00         3 .  0022233333344444444444
     51.00         3 .  5555566666666666777777777788888888888999999999999
     41.00         4 .  00000000001111112222222222233333334444444
     31.00         4 .  55556666666677777777888888889
```

```
      2.00        5 .  12
      2.00        5 .  58
      3.00        6 .  023

 Stem width:   10000.00
 Each leaf:        1 case(s)
```
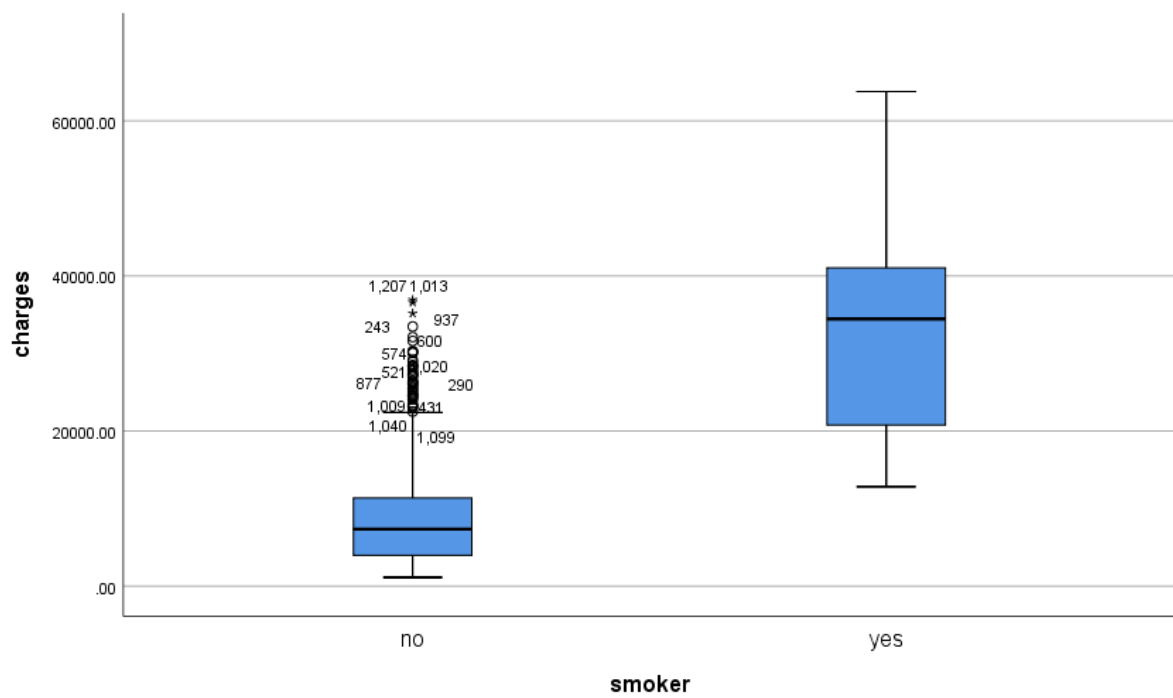

k) Explore Charges with factor Sex

sex

Case Processing Summary

	sex	Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
charges	female	662	100.0%	0	0.0%	662	100.0%
	male	676	100.0%	0	0.0%	676	100.0%

Descriptives

	sex			Statistic	Std. Error
charges	female	Mean		12569.5788	432.52936
		95% Confidence Interval for Mean	Lower Bound	11720.2818	
			Upper Bound	13418.8759	
		5% Trimmed Mean		11324.5294	
		Median		9412.9625	
		Variance		123848048.289	
		Std. Deviation		11128.70380	
		Minimum		1607.51	
		Maximum		63770.43	
		Range		62162.92	
		Interquartile Range		9589.84	
		Skewness		1.729	.095
		Kurtosis		2.754	.190
	male	Mean		13956.7512	498.88561
		95% Confidence Interval for Mean	Lower Bound	12977.1969	
			Upper Bound	14936.3054	
		5% Trimmed Mean		12811.7448	
		Median		9369.6158	
		Variance		168247513.288	
		Std. Deviation		12971.02592	
		Minimum		1121.87	
		Maximum		62592.87	
		Range		61471.00	
		Interquartile Range		14459.90	
		Skewness		1.336	.094
		Kurtosis		.818	.188

Charges

Stem-and-Leaf Plots

```
charges Stem-and-Leaf Plot for
sex= female

 Frequency     Stem &  Leaf

    22.00        0 .  11111111111
   107.00        0 .  22222222222222222222222222223333333333333333333333
    84.00        0 .  44444444444444444444455555555555555555555
    71.00        0 .  666666666666667777777777777777777
    71.00        0 .  888888888888888889999999999999999
    66.00        1 .  00000000000011111111111111111111
    59.00        1 .  222222222222223333333333333
    29.00        1 .  44444444444555
    18.00        1 .  666667777
    20.00        1 .  8888899999
    13.00        2 .  000111
    10.00        2 .  22333
    14.00        2 .  444445
    10.00        2 .  6677
     3.00        2 .  8
    65.00 Extremes    (>=28923)

 Stem width:  10000.00
 Each leaf:       2 case(s)




charges Stem-and-Leaf Plot for
sex= male

 Frequency     Stem &  Leaf

   186.00        0 .
1111111111111111111111111111111111112222222222222222222222233333333333333444444
44444444444444444
   171.00        0 .
5555555555555555666666666666666666666677777777777778888888888888888888999999
9999999999
   120.00        1 .
000000000000000001111111111111111122222222222222333333334444
    41.00        1 .  5556677777888899999
    38.00        2 .  00000111112233344
    17.00        2 .  5567778
    19.00        3 .  00234444
    37.00        3 .  556666777888899999
     3.00        4 .  0
    44.00 Extremes    (>=40721)

 Stem width:  10000.00
 Each leaf:       2 case(s)
```

I) **Explore Charges with factor Region**

region

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	region	N	Percent	N	Percent	N	Percent
charges	northeas	324	100.0%	0	0.0%	324	100.0%
	northwes	325	100.0%	0	0.0%	325	100.0%
	southeas	364	100.0%	0	0.0%	364	100.0%
	southwes	325	100.0%	0	0.0%	325	100.0%

Descriptives

	region			Statistic	Std. Error
charges	northeas	Mean		13406.3845	625.32239
		95% Confidence Interval for Mean	Lower Bound	12176.1655	
			Upper Bound	14636.6035	
		5% Trimmed Mean		12305.9569	
		Median		10057.6520	
		Variance		126693102.651	
		Std. Deviation		11255.80307	
		Minimum		1694.80	
		Maximum		58571.07	
		Range		56876.28	
		Interquartile Range		11582.85	
		Skewness		1.493	.135
		Kurtosis		1.756	.270
	northwes	Mean		12417.5754	614.17942
		95% Confidence Interval for Mean	Lower Bound	11209.2924	
			Upper Bound	13625.8584	
		5% Trimmed Mean		11186.5903	
		Median		8965.7958	
		Variance		122595316.361	
		Std. Deviation		11072.27693	
		Minimum		1621.34	
		Maximum		60021.40	
		Range		58400.06	
		Interquartile Range		10196.84	
		Skewness		1.682	.135
		Kurtosis		2.625	.270
	southeas	Mean		14735.4114	732.28454
		95% Confidence Interval for Mean	Lower Bound	13295.3588	
			Upper Bound	16175.4641	
		5% Trimmed Mean		13589.9569	
		Median		9294.1319	
		Variance		195191595.783	
		Std. Deviation		13971.09859	
		Minimum		1121.87	
		Maximum		63770.43	
		Range		62648.55	
		Interquartile Range		15111.19	
		Skewness		1.251	.128
		Kurtosis		.520	.255

	southwes	Mean		12346.9374	641.07695
		95% Confidence Interval for Mean	Lower Bound	11085.7385	
			Upper Bound	13608.1363	
		5% Trimmed Mean		11123.3345	
		Median		8798.5930	
		Variance		133568388.767	
		Std. Deviation		11557.17910	
		Minimum		1241.57	
		Maximum		52590.83	
		Range		51349.26	
		Interquartile Range		8717.98	
		Skewness		1.682	.135
		Kurtosis		2.109	.270

charges

Stem-and-Leaf Plots

```
charges Stem-and-Leaf Plot for
region= northeas

 Frequency     Stem &  Leaf

    10.00          0 .  1111111111
    46.00          0 .  2222222222222222222222222233333333333333333333
    33.00          0 .  444444444444444444444445555555555
    35.00          0 .  66666666666666666677777777777777777
    37.00          0 .  8888888888888899999999999999999999999
    33.00          1 .  000000000000001111111111111111111
    30.00          1 .  222222222222333333333333333333
    15.00          1 .  444444444445555
    10.00          1 .  6666667777
     7.00          1 .  8899999
    11.00          2 .  00000001111
     8.00          2 .  22223333
     8.00          2 .  44444555
     3.00          2 .  677
     3.00          2 .  899
     3.00          3 .  001
     3.00          3 .  233
    29.00 Extremes     (>=34254)

 Stem width:  10000.00
 Each leaf:       1 case(s)




charges Stem-and-Leaf Plot for
region= northwes
```

```
    Frequency     Stem &  Leaf

      14.00         0 .  11111111111111
      49.00         0 .  2222222222222222222222222222222222333333333333333
      43.00         0 .  4444444444444444444444445555555555555555555
      40.00         0 .  6666666666666666666666667777777777777777
      30.00         0 .  888888888888888889999999999999
      34.00         1 .  0000000000000001111111111111111111
      25.00         1 .  2222222222222222233333333
      13.00         1 .  4444444445555
       8.00         1 .  66677777
       8.00         1 .  88888899
      11.00         2 .  00011111111
       4.00         2 .  2333
       6.00         2 .  444445
       3.00         2 .  666
       8.00         2 .  88888899
      29.00 Extremes    (>=30064)

 Stem width:  10000.00
 Each leaf:        1 case(s)




 charges Stem-and-Leaf Plot for
 region= southeas

    Frequency     Stem &  Leaf

     105.00         0 .  111111111111111111122222222222333333333344444444444
      88.00         0 .  55555555555666666677777778888888888889999999
      55.00         1 .  000000111111222222233344
      28.00         1 .  6777888899999&
      14.00         2 .  012344
      13.00         2 .  567777&
       6.00         3 .  44&
      19.00         3 .  66677889&
      10.00         4 .  0012
      26.00 Extremes    (>=42211)

 Stem width:  10000.00
 Each leaf:        2 case(s)




 & denotes fractional leaves.

 charges Stem-and-Leaf Plot for
 region= southwes

    Frequency     Stem &  Leaf

      30.00         0 .  111111111111111111111111111111
      39.00         0 .  222222222222222223333333333333333333
      39.00         0 .  444444444444444445555555555555555555
      38.00         0 .  6666666666666666677777777777777777777
      36.00         0 .  888888888888888888999999999999
      40.00         1 .  000000000000000001111111111111111111111
      26.00         1 .  2222222222222333333333333
       8.00         1 .  44444555
```
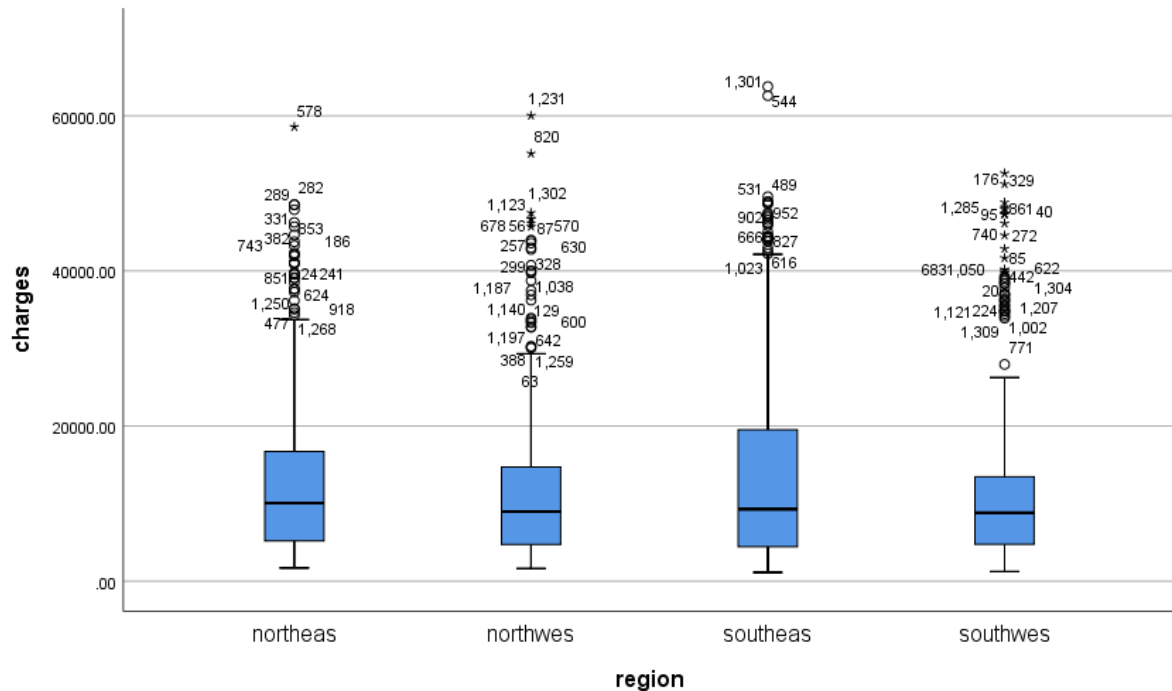
```
     6.00        1 .  666777
     7.00        1 .  8889999
     7.00        2 .  0000111
     5.00        2 .  22333
     4.00        2 .  4455
     2.00        2 .  66
    38.00 Extremes    (>=27941)

 Stem width:  10000.00
 Each leaf:       1 case(s)
```


m)   <u>Explore Age with factor Sex</u>

sex

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	sex	N	Percent	N	Percent	N	Percent
age	female	662	100.0%	0	0.0%	662	100.0%
	male	676	100.0%	0	0.0%	676	100.0%

Descriptives

sex			Statistic	Std. Error
age	female	Mean	39.50	.546
		95% Confidence Interval for Mean Lower Bound	38.43	
		95% Confidence Interval for Mean Upper Bound	40.58	
		5% Trimmed Mean	39.39	
		Median	40.00	
		Variance	197.521	
		Std. Deviation	14.054	
		Minimum	18	
		Maximum	64	
		Range	46	
		Interquartile Range	25	
		Skewness	.029	.095
		Kurtosis	-1.245	.190
	male	Mean	38.92	.540
		95% Confidence Interval for Mean Lower Bound	37.86	
		95% Confidence Interval for Mean Upper Bound	39.98	
		5% Trimmed Mean	38.74	
		Median	39.00	
		Variance	197.406	
		Std. Deviation	14.050	
		Minimum	18	
		Maximum	64	
		Range	46	
		Interquartile Range	25	
		Skewness	.082	.094
		Kurtosis	-1.244	.188

Age

Stem-and-Leaf Plots

```
age Stem-and-Leaf Plot for
sex= female

 Frequency    Stem &  Leaf

    66.00        1 .
8888888888888888888888888888888888899999999999999999999999999999999
    68.00        2 .
0000000000000011111111111111222222222222222333333333333344444444444444
    67.00        2 .
```

```
5555555555555566666666666677777777777788888888888899999999999999
    65.00        3 .
00000000000001111111111111222222222222233333333333334444444444444
    62.00        3 .
5555555555556666666666667777777777778888888888889999999999999
    67.00        4 .
000000000000011111111111112222222222222233333333333333344444444444444
    72.00        4 .
5555555555555566666666666666677777777777777788888888888888899999999999999
    72.00        5 .
000000000000011111111111111222222222222222233333333333333344444444444444
    65.00        5 .
5555555555555566666666666667777777777777888888888888899999999999999
    58.00        6 .
0000000000011111111111112222222222223333333333334444444444
```

 Stem width: 10
 Each leaf: 1 case(s)

age Stem-and-Leaf Plot for
sex= male

 Frequency   Stem & Leaf

    71.00   1 .
888888888888888888888888888888889999999999999999999999999999999
    73.00   2 .
0000000000000001111111111111112222222222222223333333333333344444444444444
    72.00   2 .
55555555555555556666666666666667777777777777788888888888888899999999999999
    67.00   3 .
00000000000000111111111111112222222222222233333333333333444444444444
    63.00   3 .
5555555555555666666666666667777777777777888888888888889999999999999
    68.00   4 .
0000000000000011111111111111222222222222222333333333333334444444444444
    72.00   4 .
55555555555555556666666666666667777777777777788888888888888899999999999999
    71.00   5 .
00000000000000111111111111111222222222222223333333333333344444444444444
    63.00   5 .
5555555555555666666666666667777777777777888888888888899999999999999
    56.00   6 .
00000000000011111111111122222222222233333333333344444444444
```

 Stem width:  10
 Each leaf:        1 case(s)

# n)Crosstab for Region, Smoker and Sex

| | | smoker | | | |
|---|---|---|---|---|---|
| | | no | | yes | |
| | | sex | | sex | |
| | | female | male | female | male |
| | | Count | Count | Count | Count |
| region | northeast | 132 | 125 | 29 | 38 |
| | northwest | 135 | 132 | 29 | 29 |
| | southeast | 139 | 134 | 36 | 55 |
| | southwest | 141 | 126 | 21 | 37 |

# o)Crosstab of Sex vs Smoker

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| sex * smoker | 1338 | 100.0% | 0 | 0.0% | 1338 | 100.0% |

**sex * smoker Crosstabulation**

Count

| | | smoker | | |
|---|---|---|---|---|
| | | no | yes | Total |
| sex | female | 547 | 115 | 662 |
| | male | 517 | 159 | 676 |
| Total | | 1064 | 274 | 1338 |

# p)Crosstab for Smoker vs Region along with a clustered bar chart

## Case Processing Summary

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| smoker * region | 1338 | 100.0% | 0 | 0.0% | 1338 | 100.0% |

## smoker * region Crosstabulation

Count

| | | region | | | | Total |
|---|---|---|---|---|---|---|
| | | northeast | northwest | southeast | southwest | |
| smoker | no | 257 | 267 | 273 | 267 | 1064 |
| | yes | 67 | 58 | 91 | 58 | 274 |
| Total | | 324 | 325 | 364 | 325 | 1338 |

**Q3)**

## a) <u>Mean Charges Genderwise and Regionwise</u>



## c) <u>Mean BMI for different Age</u>

# Q4)
## a) BAR CHART of Income Category



Simple Bar Count of Income category in thousands

## b) HISTOGRAM of Age



Simple Histogram of Age in years

Mean = 42.06
Std. Dev. = 12.29
N = 6,400

## c) <u>SCATTERPLOT of Household Income VS Years with Current Employer</u>

**Simple Scatter of Household income in thousands by Years with current employer**



## d) <u>PIE CHART for Income Category and Age</u>



The bar chart depicts the mean age for different Income categories. The income category of $75+ has comparatively higher mean.

# e) Explore Age with Gender, Martial Status and Retirement Status

**Marital status**

### Case Processing Summary

| | Marital status | Valid | | Missing | | Total | |
|---|---|---|---|---|---|---|---|
| | | N | Percent | N | Percent | N | Percent |
| Age in years | Unmarried | 3224 | 100.0% | 0 | 0.0% | 3224 | 100.0% |
| | Married | 3176 | 100.0% | 0 | 0.0% | 3176 | 100.0% |

### Descriptives

| | Marital status | | | Statistic | Std. Error |
|---|---|---|---|---|---|
| Age in years | Unmarried | Mean | | 42.02 | .217 |
| | | 95% Confidence Interval for Mean | Lower Bound | 41.60 | |
| | | | Upper Bound | 42.45 | |
| | | 5% Trimmed Mean | | 41.74 | |
| | | Median | | 41.00 | |
| | | Variance | | 151.934 | |
| | | Std. Deviation | | 12.326 | |
| | | Minimum | | 18 | |
| | | Maximum | | 75 | |
| | | Range | | 57 | |
| | | Interquartile Range | | 19 | |
| | | Skewness | | .305 | .043 |
| | | Kurtosis | | -.607 | .086 |
| | Married | Mean | | 42.10 | .217 |
| | | 95% Confidence Interval for Mean | Lower Bound | 41.67 | |
| | | | Upper Bound | 42.52 | |
| | | 5% Trimmed Mean | | 41.83 | |
| | | Median | | 41.00 | |
| | | Variance | | 150.162 | |
| | | Std. Deviation | | 12.254 | |
| | | Minimum | | 18 | |
| | | Maximum | | 77 | |
| | | Range | | 59 | |

| | | |
|---|---:|---:|
| Interquartile Range | 18 | |
| Skewness | .293 | .043 |
| Kurtosis | -.596 | .087 |

## Age in years

## Stem-and-Leaf Plots

```
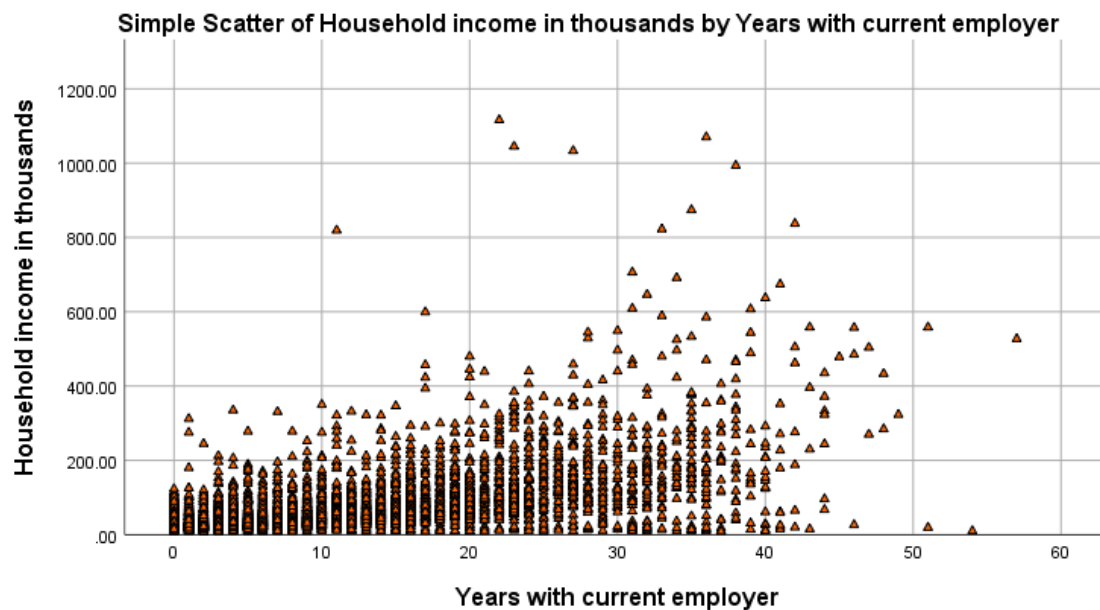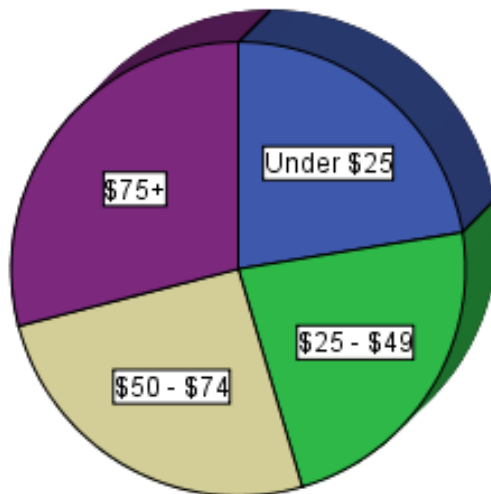Age in years Stem-and-Leaf Plot for
marital= Unmarried
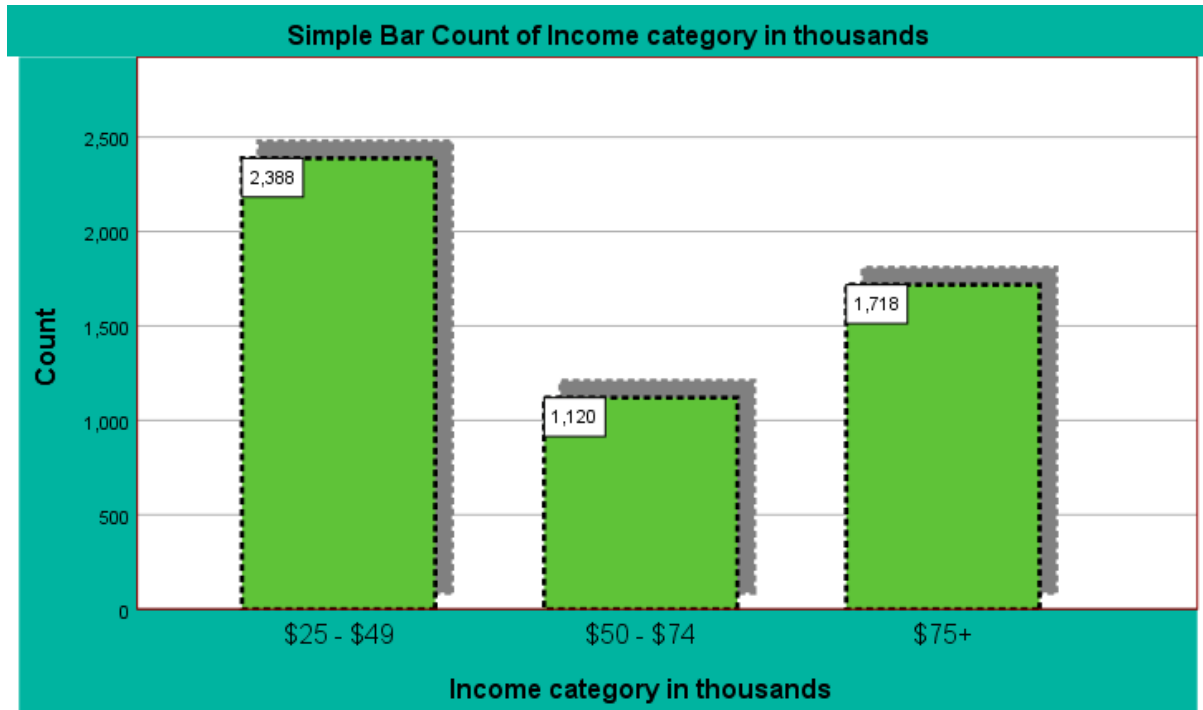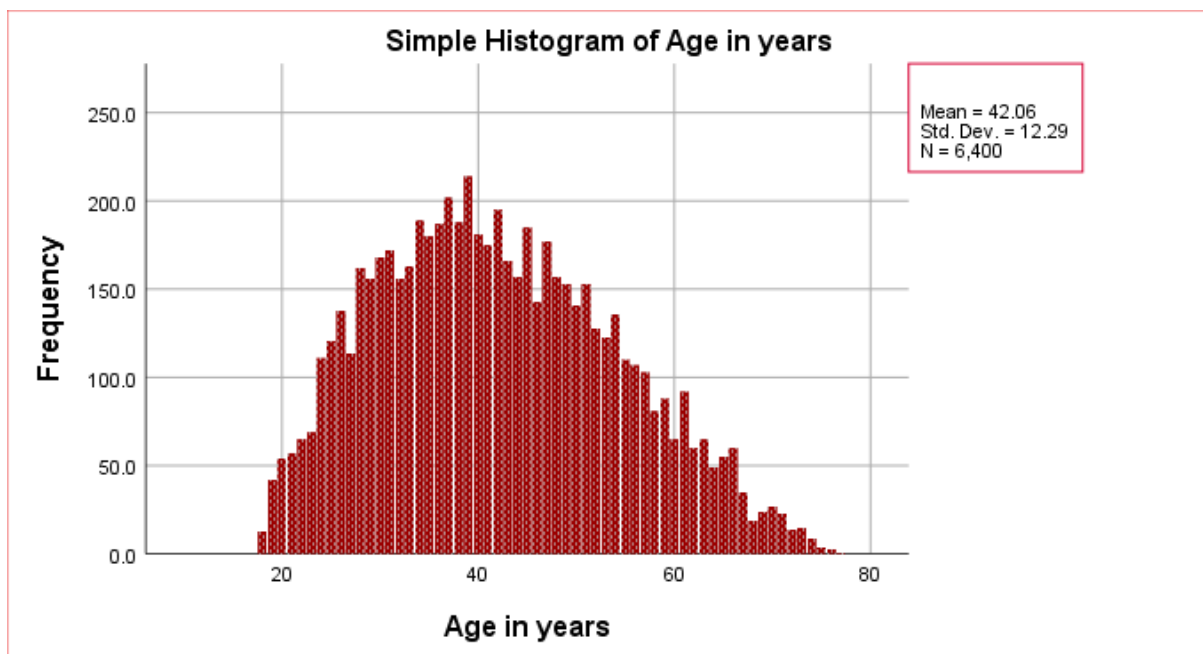
 Frequency    Stem &  Leaf

    28.00        1 .  889999
   184.00        2 .  000001111112222222333333444444444444
   356.00        2 .
5555555555556666666666666677777777777788888888888888888899999999999999999999
   417.00        3 .
000000000000000011111111111111111112222222222222223333333333333333344444444
44444444
   480.00        3 .
55555555555555555556666666666666666667777777777777777777778888888888888888888
899999999999999999999
   465.00        4 .
000000000000000000000001111111111111111222222222222222222222333333333333333
3344444444444444444444
   393.00        4 .
55555555555555555556666666666666677777777777777777788888888888888888999999999999
9999
   344.00        5 .
0000000000000011111111111111112222222222223333333333334444444444444444
   240.00        5 .  55555555555556666666666677777777788888889999999999
   166.00        6 .  00000001111111111222223333344444
   103.00        6 .  55555556666667777888999
    45.00        7 .  0001112334
     3.00        7 .  5

 Stem width:     10
 Each leaf:        5 case(s)




Age in years Stem-and-Leaf Plot for
marital= Married

 Frequency    Stem &  Leaf

    27.00        1 .  89999
   172.00        2 .  000001111222223333334444444444
   335.00        2 .
5555555555556666666666667777777777888888888888999999999999
   431.00        3 .
```

```
       0000000000000001111111111111222222222222223333333333333344444444444444444
    491.00        3 .
5555555555555555666666666666666677777777777777778888888888888888999999999999
9999999
    409.00        4 .
0000000000001111111111111111122222222222222223333333333333334444444444444
    422.00        4 .
5555555555555555666666666666667777777777777777788888888888888889999999999999
    337.00        5 .
0000000000001111111111111112222222222222333333333334444444444
    249.00        5 .   55555555666666666677777777778888888899999
    165.00        6 .   000001111112222233333334444
     90.00        6 .   55556666677789
     43.00        7 .   001234
      5.00        7 .   &

 Stem width:     10
 Each leaf:         6 case(s)



 & denotes fractional leaves.
```


Marital status

Retired

Case Processing Summary

		Cases						
		Valid		Missing		Total		
	Retired	N	Percent	N	Percent	N	Percent	
Age in years	No	6092	100.0%	0	0.0%	6092	100.0%	
	Yes	308	100.0%	0	0.0%	308	100.0%	

Descriptives

	Retired			Statistic	Std. Error
Age in years	No	Mean		40.90	.146
		95% Confidence Interval for Mean	Lower Bound	40.61	
			Upper Bound	41.18	
		5% Trimmed Mean		40.69	
		Median		40.00	
		Variance		129.507	
		Std. Deviation		11.380	
		Minimum		18	
		Maximum		74	
		Range		56	
		Interquartile Range		17	
		Skewness		.232	.031
		Kurtosis		-.612	.063
	Yes	Mean		65.00	.278
		95% Confidence Interval for Mean	Lower Bound	64.46	
			Upper Bound	65.55	
		5% Trimmed Mean		64.95	
		Median		65.00	
		Variance		23.723	
		Std. Deviation		4.871	
		Minimum		55	
		Maximum		77	
		Range		22	
		Interquartile Range		8	
		Skewness		.162	.139
		Kurtosis		-.633	.277

Age in years

Stem-and-Leaf Plots


```
Age in years Stem-and-Leaf Plot for
retire= No

 Frequency    Stem &  Leaf

     55.00         1 .  89999
    356.00         2 .  00000111111222222333333344444444444
    691.00         2 .
5555555555555666666666666666777777777777888888888888888889999999999999999
    848.00         3 .
0000000000000000001111111111111111222222222222222223333333333333333444444444
4444444444
    971.00         3 .
5555555555555555555666666666666666666677777777777777777777788888888888888888
8999999999999999999999
    874.00         4 .
0000000000000000001111111111111111112222222222222222223333333333333333334444
444444444444
    815.00         4 .
5555555555555555555666666666666666777777777777777777788888888888888888999999999
999999
    681.00         5 .
00000000000000111111111111111122222222222222333333333333344444444444444
    446.00         5 .  55555555555666666666667777777788888889999999
    226.00         6 .  0000011111112222333344
    101.00         6 .  5556667789
     28.00         7 .  013&

 Stem width:     10
 Each leaf:       10 case(s)



 & denotes fractional leaves.



Age in years Stem-and-Leaf Plot for
retire= Yes

 Frequency    Stem &  Leaf

      2.00         5 .  55
     17.00         5 .  66666666777777777
     24.00         5 .  888888888888899999999999
     35.00         6 .  00000000011111111111111111111111111
     47.00         6 .  22222222222222222222222233333333333333333333333
     47.00         6 .  44444444444444444444444455555555555555555555555
     45.00         6 .  666666666666666666666666666667777777777777777
     23.00         6 .  88888888899999999999999
```

```
    35.00        7 .  00000000000000000000011111111111111
    20.00        7 .  22222222222333333333
     9.00        7 .  444445555
     4.00        7 .  6667

 Stem width:      10
 Each leaf:       1 case(s)
```

Boxplots

Retired

Gender

Case Processing Summary

	Cases					
	Valid		Missing		Total	
Gender	N	Percent	N	Percent	N	Percent

Age in years	Female	3179	100.0%	0	0.0%	3179	100.0%
	Male	3221	100.0%	0	0.0%	3221	100.0%

Descriptives

	Gender			Statistic	Std. Error
Age in years	Female	Mean		41.74	.212
		95% Confidence Interval for Mean	Lower Bound	41.32	
			Upper Bound	42.15	
		5% Trimmed Mean		41.45	
		Median		41.00	
		Variance		142.988	
		Std. Deviation		11.958	
		Minimum		18	
		Maximum		76	
		Range		58	
		Interquartile Range		17	
		Skewness		.327	.043
		Kurtosis		-.534	.087
	Male	Mean		42.37	.222
		95% Confidence Interval for Mean	Lower Bound	41.94	
			Upper Bound	42.81	
		5% Trimmed Mean		42.11	
		Median		41.00	
		Variance		158.818	
		Std. Deviation		12.602	
		Minimum		18	
		Maximum		77	
		Range		59	
		Interquartile Range		19	
		Skewness		.268	.043
		Kurtosis		-.667	.086

Age in years

Stem-and-Leaf Plots


```
Age in years Stem-and-Leaf Plot for
gender= Female

 Frequency    Stem &  Leaf

    24.00        1 .  8999
   165.00        2 .  0000011112222233333344444444
   341.00        2 .
5555555555566666666666777777777888888888888899999999999999
   448.00        3 .
0000000000000001111111111111122222222222222233333333333333344444444444444444
   507.00        3 .
555555555555555566666666666666666777777777777777777888888888888888999999999
99999999
   441.00        4 .
0000000000000001111111111111112222222222222222233333333333333334444444444444
   415.00        4 .
5555555555555555566666666666667777777777777788888888888888999999999999
   328.00        5 .
00000000000011111111111122222222223333333333344444444444
   231.00        5 .  55555555556666666677777778888889999999
   148.00        6 .  00000111111112223333334444
    94.00        6 .  5555666667778899
    34.00        7 .  0011234
     2.00        7 .  &
     1.00 Extremes    (>=76)

 Stem width:    10
 Each leaf:       6 case(s)



 & denotes fractional leaves.



Age in years Stem-and-Leaf Plot for
gender= Male

 Frequency    Stem &  Leaf

    31.00        1 .  899999
   191.00        2 .  00000111111122222223333333344444444444
   350.00        2 .
5555555555556666666666666777777777777888888888888888888999999999999999
   400.00        3 .
00000000000000001111111111111111112222222222222223333333333333344444444444
44444
   464.00        3 .
5555555555555555556666666666666666677777777777777777778888888888888888888999
9999999999999999
   433.00        4 .
00000000000000000011111111111111111112222222222222222222233333333333333334444
444444444444
   400.00        4 .
```

```
          555555555555555556666666666666677777777777777777788888888888888899999999999
          9999
     353.00          5 .
          0000000000000011111111111111112222222222222223333333333344444444444444
     258.00          5 .   5555555555566666666666667777777777788888888899999999999
     183.00          6 .   0000000111111122222222233333334444444
      99.00          6 .   5555556666667778999
      54.00          7 .   0001122334
       5.00          7 .   &

 Stem width:     10
 Each leaf:        5 case(s)



 & denotes fractional leaves.
```

Boxplots

Q5)

```
GET
  FILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM 5\Multivariate
Analysis\Newdata.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
NEW FILE.
DATASET NAME DataSet2 WINDOW=FRONT.

SAVE OUTFILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM
5\Multivariate Analysis\Ver_data.sav'
  /COMPRESSED.
DATASET ACTIVATE DataSet1.
DATASET CLOSE DataSet2.
ADD FILES /FILE=*
  /FILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM 5\Multivariate
Analysis\Ver_data.sav'.
EXECUTE.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM
5\Multivariate Analysis\Newdata.sav'
  /COMPRESSED.
NEW FILE.
DATASET NAME DataSet3 WINDOW=FRONT.

SAVE OUTFILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM
5\Multivariate Analysis\Hor_data.sav'
  /COMPRESSED.
DATASET ACTIVATE DataSet1.
DATASET CLOSE DataSet3.
MATCH FILES /FILE=*
  /FILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM 5\Multivariate
Analysis\Hor_data.sav'.
EXECUTE.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\Users\ADMIN\Desktop\Dhanashri\Bsc ASA SOS\SEM
5\Multivariate Analysis\Newdata.sav'
  /COMPRESSED.
```

Name	Gender	DOB	Score_5sem	Age	Region	Weight	Grades	Height	Spend_per_month	Earn_per_month
A	Male	15-Mar-2001	94	20	North	54.0	A	165.0	100.0	200.0
B	Female	12-May-2002	88	21	South	65.0	B	154.0	150.0	200.0
C	Female	25-Aug-2000	90	23	East	66.0	A	166.0	130.0	250.0
D	Male	14-Jun-1997	99	19	West	56.0	A	170.0	140.0	275.0
E	Female	23-Nov-1999	91	22	South	59.0	A	158.0	125.0	300.0
F	Male	12-Dec-2001	87	24	North	58.0	B	162.0	135.0	250.0
G	Male	11-Dec-2002	86	21	West	57.0	B	161.0	160.0	175.0
H	Male	29-Jan-2003	85	20	East	56.0	B	162.0	200.0	200.0
I	Female	07-Jun-2001	84	18	West	60.0	B	163.0	120.0	160.0
J	Male	25-Nov-2000	89	19	North	69.0	B	164.0	100.0	215.0
K	Female	29-Sep-1995	92	20	South	68.0	A	166.0	50.0	220.0
L	Female	01-Apr-2003	95	25	South	67.0	A	157.0	75.0	260.0
M	Male	21-Oct-2001	76	26	East	66.0	C	158.0	175.0	240.0
N	Male	28-Feb-2000	80	22	West	65.0	B	159.0	80.0	100.0
O	Female	10-Mar-2002	96	21	North	53.0	A	160.0	90.0	130.0
P	Male	04-Apr-1995	79	23	South	65.0	C	158.0	95.0	140.0
Q	Female	30-Jul-2001	78	27	West	64.0	C	167.0	150.0	250.0
R	Female	04-Aug-2004	93	23	West	76.0	A	164.0	175.0	300.0
S	Male	06-Oct-2002	94	19	East	61.0	A	161.0	160.0	240.0
T	Female	17-Aug-1996	96	20	South	52.0	A	162.0	100.0	210.0

Name	Gender	DOB	Score_5s em	Age	Region	Weight	Grades	Height	Spend_pe r_month	Earn_per _month	Blood_Gr oup	ID
A	Male	15-Mar-2001	94	20	North	54.0	A	165.0	100.0	200.0	O-	1
B	Female	12-May-2002	88	21	South	65.0	B	154.0	150.0	200.0	B+	2
C	Female	25-Aug-2000	90	23	East	66.0	A	166.0	130.0	250.0	A-	3
D	Male	14-Jun-1997	99	19	West	56.0	A	170.0	140.0	275.0	B-	4
E	Female	23-Nov-1999	91	22	South	59.0	A	158.0	125.0	300.0	O-	5
F	Male	12-Dec-2001	87	24	North	58.0	B	162.0	135.0	250.0	AB+	6
G	Male	11-Dec-2002	86	21	West	57.0	B	161.0	160.0	175.0	AB-	7
H	Male	29-Jan-2003	85	20	East	56.0	B	162.0	200.0	200.0	A-	8
I	Female	07-Jun-2001	84	18	West	60.0	B	163.0	120.0	160.0	O+	9
J	Male	25-Nov-2000	89	19	North	69.0	B	164.0	100.0	215.0	O+	10
K	Female	29-Sep-1995	92	20	South	68.0	A	166.0	50.0	220.0	A+	11
L	Female	01-Apr-2003	95	25	South	67.0	A	157.0	75.0	260.0	AB-	12
M	Male	21-Oct-2001	76	26	East	66.0	C	158.0	175.0	240.0	AB+	13
N	Male	28-Feb-2000	80	22	West	65.0	B	159.0	80.0	100.0	O+	14
O	Female	10-Mar-2002	96	21	North	53.0	A	160.0	90.0	130.0	A-	15
P	Male	04-Apr-1995	79	23	South	65.0	C	158.0	95.0	140.0	O+	16
Q	Female	30-Jul-2001	78	27	West	64.0	C	167.0	150.0	250.0	B+	17
R	Female	04-Aug-2004	93	23	West	76.0	A	164.0	175.0	300.0	AB-	18
S	Male	06-Oct-2002	94	19	East	61.0	A	161.0	160.0	240.0	O+	19
T	Female	17-Aug-1996	96	20	South	52.0	A	162.0	100.0	210.0	A+	20