http://www.stat.ucla.edu/~dinov/courses_students.dir/12/Winter/STAT13.1.dir

STAT 13, section 1, Winter 2012, UCLA Statistics

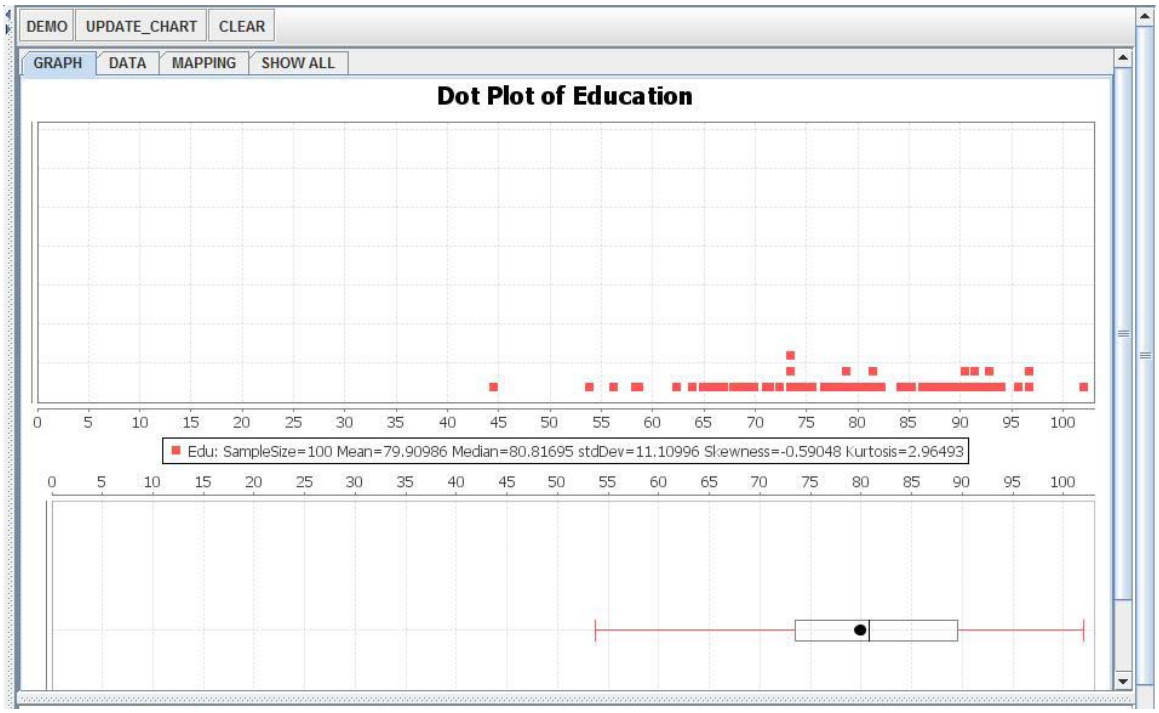
Solutions to Homework 1

1.1

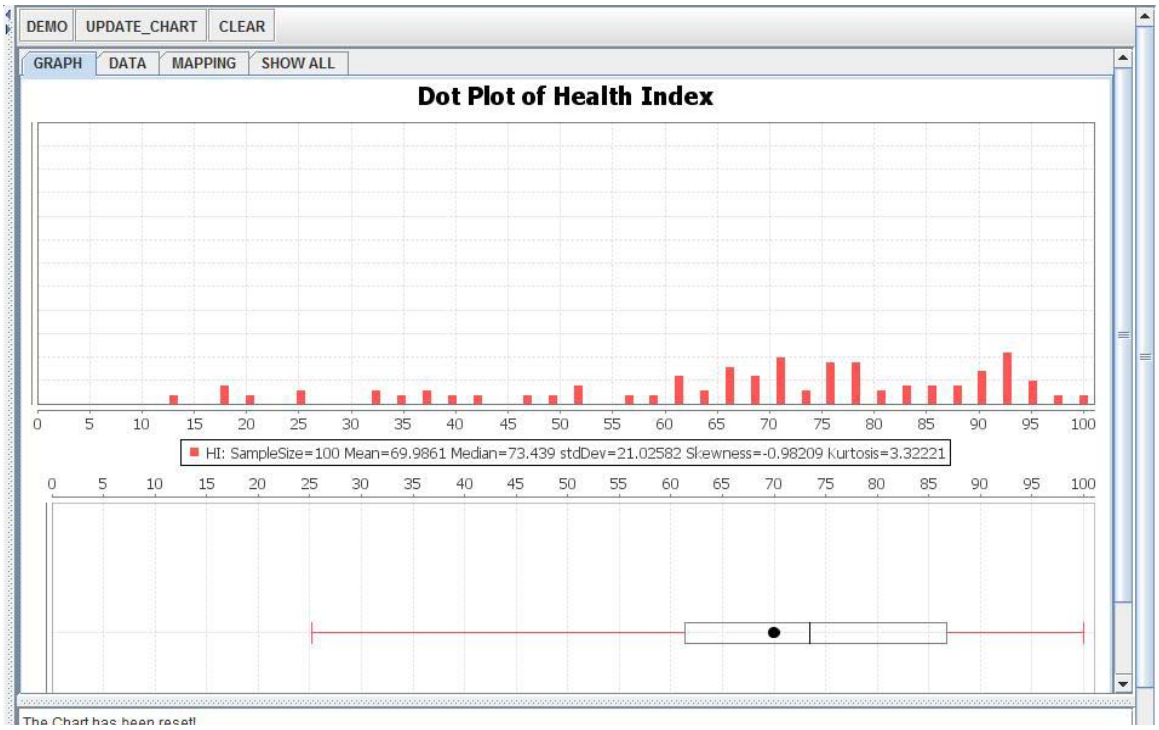
a)

1 | 6 7 9
2 | 0 4 7
3 | 0 0 0 4 9 9 9 9
4 | 0 0 1 1 2 2 3 3 6 7 9
5 | 0 0 0 1 4 5 5
6 | 0 0 0 5 5 6
7 | 0 0 0 0 1 2 3 5 8 9 9
8 | 0 0 0 0 2 2 3 3 4 4 4 4 5 7 7 8 8 9 9 9 9
9 | 0 0 0 1 1 2 2 3 3 3 4 5 5 5 5 5 5 6 6 6 6 6 7 7 7 9 9 9 9

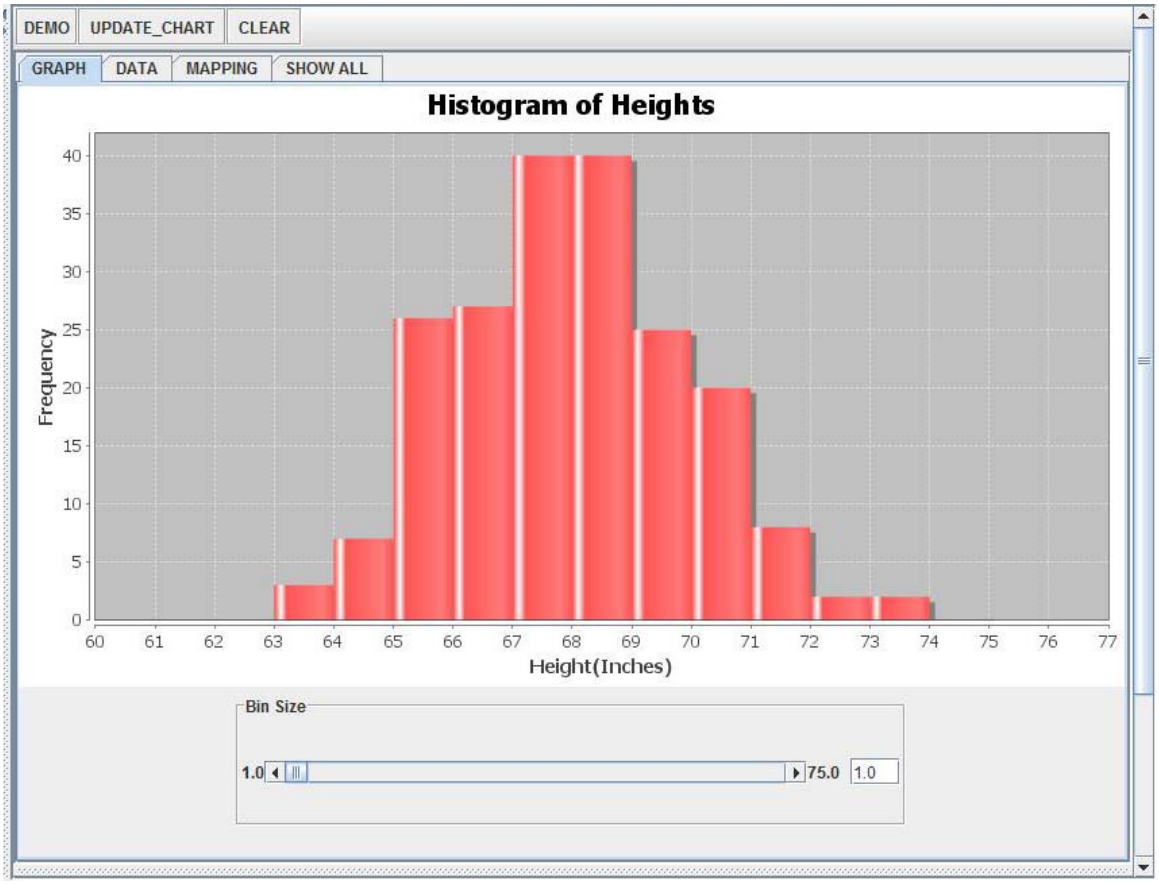
b)




DEMO
UPDATE_CHART
CLEAR
GRAPH
DATA
MAPPING
SHOW ALL
Dot Plot of Quality of Life
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
QOL: SampleSize=100 Mean=67.49005 Median=68.63525 stdDev=15.83709 Skewness=-0.3573 Kurtosis=2.55152
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95


DEMO
UPDATE_CHART
CLEAR
GRAPH
DATA
MAPPING
SHOW ALL
Dot Plot of Health Index
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
HI: SampleSize=100 Mean=69.9861 Median=73.439 stdDev=21.02582 Skewness=-0.98209 Kurtosis=3.32221
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
The Chart has been reset!

1.2



Height	Frequency
63	2
64	7
65	12
66	28
67	33
68	43
69	31
70	26
71	12
72	4
73	0
74	2

(Note: The table was done after rounding the heights to the nearest whole number.)

The shape can change significantly when the bin size is changed.

1.3

b) Because from the histogram, the min and max values eliminate (a) and (c) as choices, and then the median is in the bin that goes from 24-26. The data histogram shown provides the following approximate sumamries:

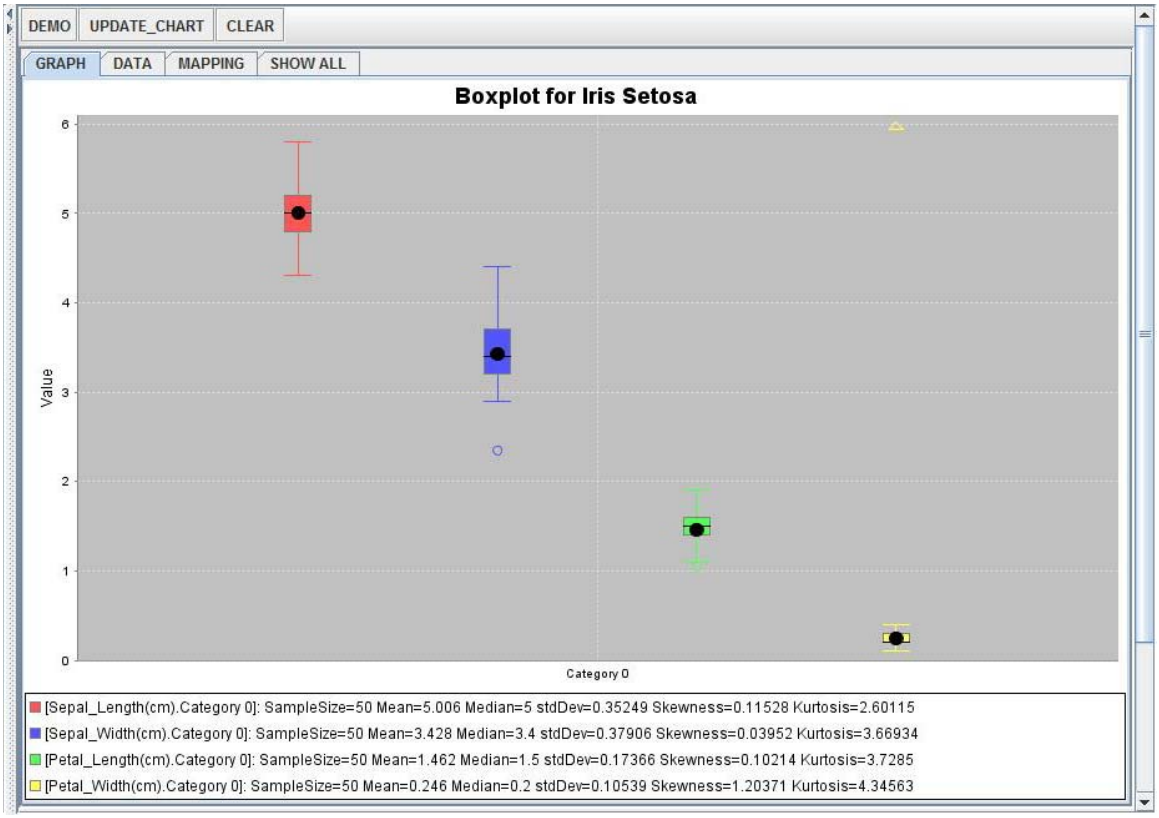
- Range: 12 – 35
- μ (mean) vs. m (median): μ =24 (approx) < m=25
- Q1 ~22
- Q2 ~25
- Q3 ~28

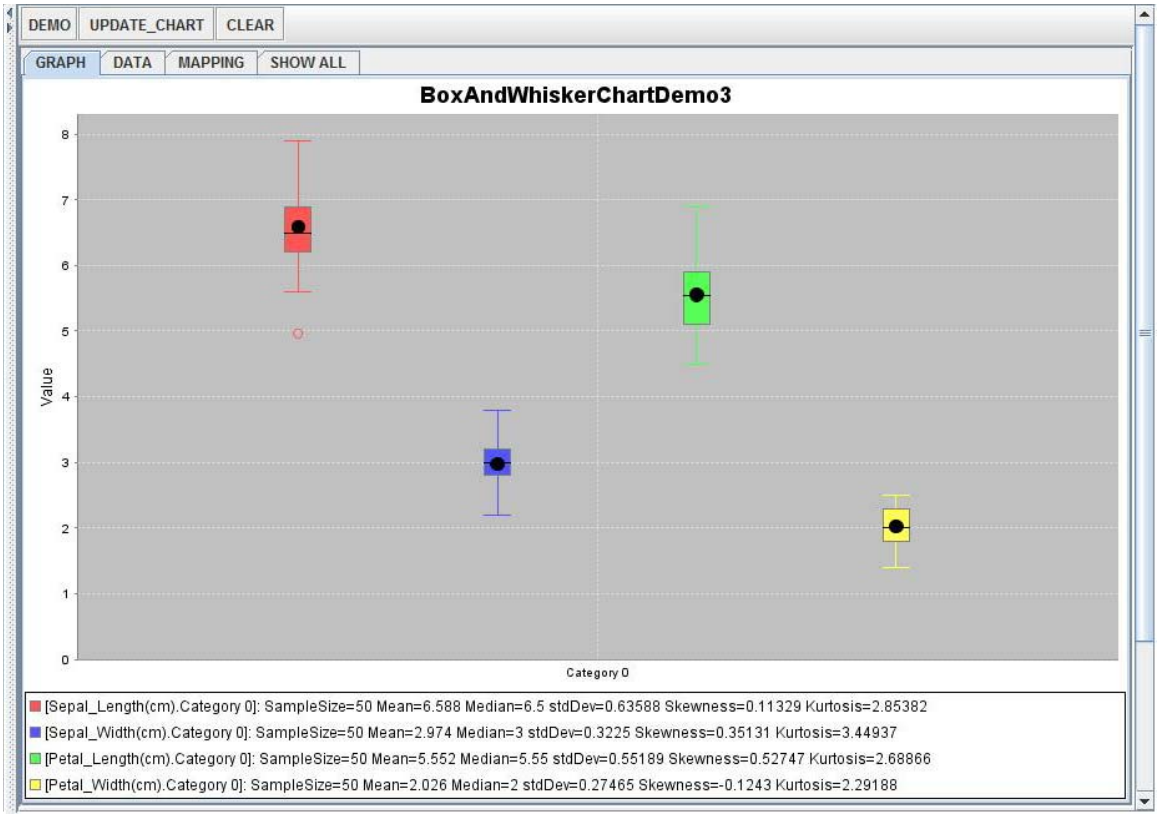
1.4

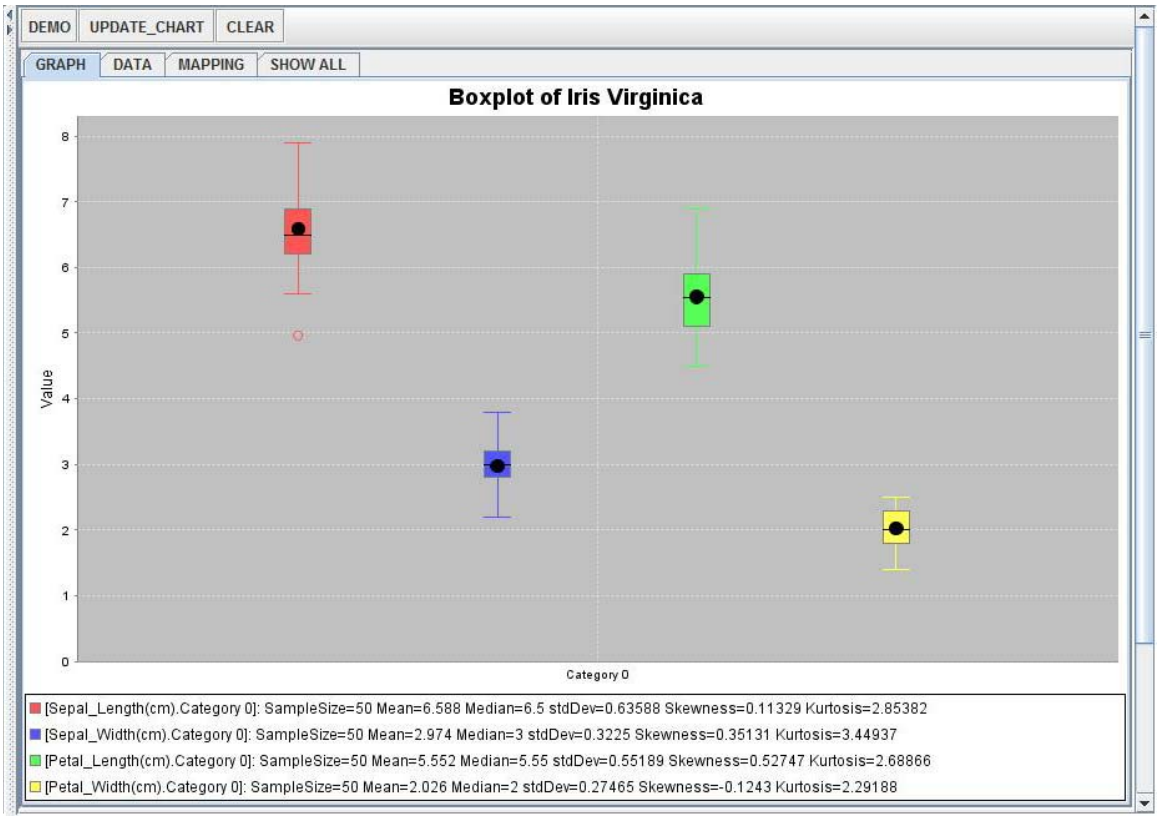
a) mean = 6.49, sd = 0.915; this gives us a measure of center and spread for dopamine levels
b) Q1 = 5.9 median = 6.2 Q3 = 7.4 IQR = Q3 - Q1 = 1.5
c) CV = 0.141
d) mean = 7.26, sd = 1.23, Q1 = 6.2, median = 7.4, Q3 = 8.6
None of the measures showed resistance to the change.

1.5

a) Q1 = 4.8 median = 5 Q3 = 5.2 b) IQR = 0.4
c)



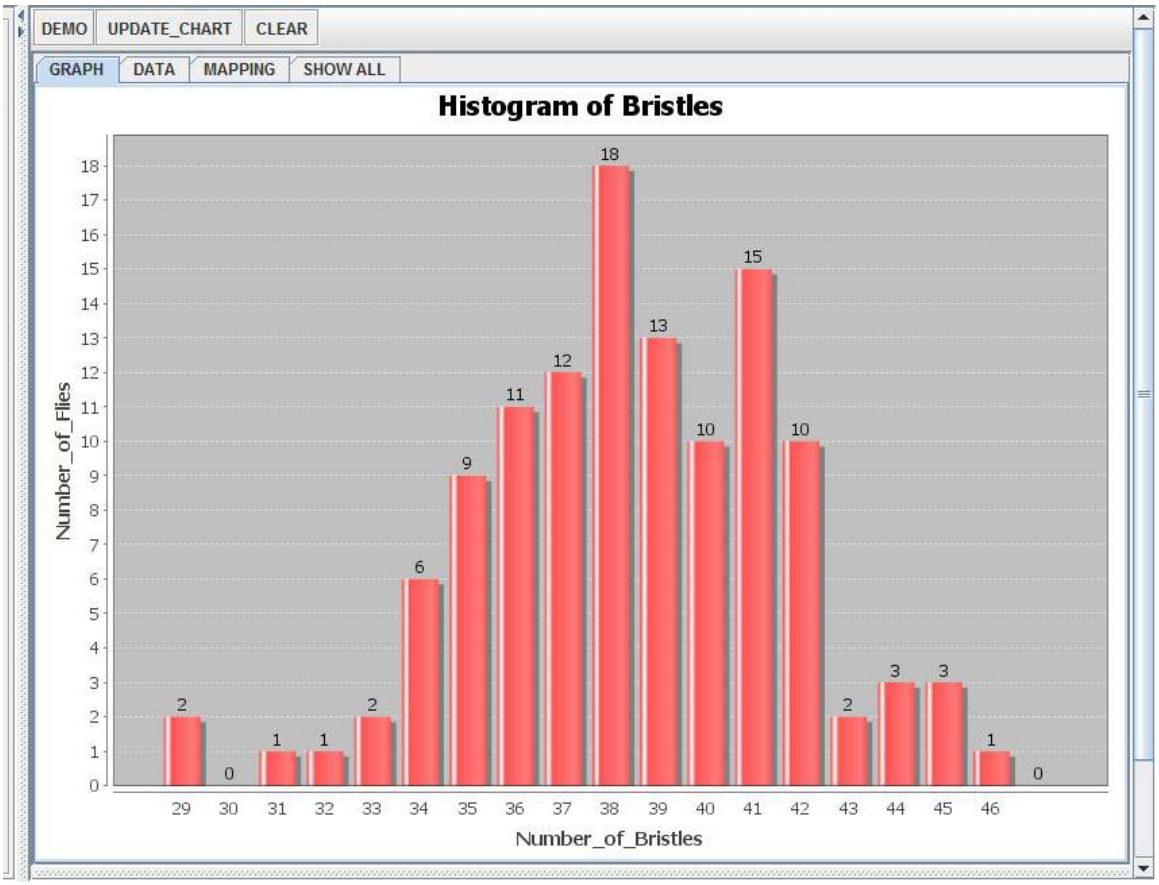

DEMO
UPDATE_CHART
CLEAR
GRAPH
DATA
MAPPING
SHOW ALL
BoxAndWhiskerChartDemo3
Value
Category 0
[Sepal_Length(cm).Category 0]: SampleSize=50 Mean=6.588 Median=6.5 stdDev=0.63588 Skewness=0.11329 Kurtosis=2.85382
[Sepal_Width(cm).Category 0]: SampleSize=50 Mean=2.974 Median=3 stdDev=0.3225 Skewness=0.35131 Kurtosis=3.44937
[Petal_Length(cm).Category 0]: SampleSize=50 Mean=5.552 Median=5.55 stdDev=0.55189 Skewness=0.52747 Kurtosis=2.68866
[Petal_Width(cm).Category 0]: SampleSize=50 Mean=2.026 Median=2 stdDev=0.27465 Skewness=-0.1243 Kurtosis=2.29188


DEMO
UPDATE_CHART
CLEAR
GRAPH
DATA
MAPPING
SHOW ALL
Boxplot of Iris Virginica
Value
Category 0
[Sepal_Length(cm).Category 0]: SampleSize=50 Mean=6.588 Median=6.5 stdDev=0.63588 Skewness=0.11329 Kurtosis=2.85382
[Sepal_Width(cm).Category 0]: SampleSize=50 Mean=2.974 Median=3 stdDev=0.3225 Skewness=0.35131 Kurtosis=3.44937
[Petal_Length(cm).Category 0]: SampleSize=50 Mean=5.552 Median=5.55 stdDev=0.55189 Skewness=0.52747 Kurtosis=2.68866
[Petal_Width(cm).Category 0]: SampleSize=50 Mean=2.026 Median=2 stdDev=0.27465 Skewness=-0.1243 Kurtosis=2.29188

1.6

a) median = 38 b) Q1 = 36 Q3 = 41

c)



d) Between 35.25 and 41.65 lies 79/119 = 66.4% of the observations.