

Student's Name

Instructor

Course

Date

Descriptive Statistics

1. The data collected is a sample because it only represents part of the prices of top selling perfumes, but not all the brands available.
2. The two variables are the quantitative and qualitative variables. The name of the perfume is a qualitative variable, whereas the weight and price of perfumes are quantitative variables.
3. Quantitative: The price and the weight of the perfumes. Qualitative: The brand of the perfumes.
4. The brand of perfumes is discrete data whereas the price is continuous data
5. The level of measurement of the brands of perfumes is nominal. The level of measurement of the weight is an interval. The price has an ordinal level of measurement.
6. The Mean, Mode and Median of the Prices
 - a. Mean

Mean = \sum of values \div The number of occurrences.

If m = mean,

$$m = (50.99 + 13.05 + 9.59 + 11.99 + 7.59 + 23.99 + 26.39 + 32.90 + 13.99 + 10.59 + 21.99 + 7.98 + 8.59) \div 13$$

$$= 18.43$$

- b. Mode = Most occurring. The data lacks a modal price.
- c. Median = the middle value

For the data provided, the prices would be arranged as follows from the smallest to the largest

7.59, 7.98, 8.59, 9.59, 10.59, 11.99, 13.05, 13.99, 21.99, 23.99, 26.39, 32.9, 50.99

The value 13.05 lies at the median point. The median value is therefore 13.05.

7. Mean is the most appropriate measure of central tendency for the prices since it provides a viable estimate of the average price of perfume. The prices would be unevenly distributed, making the median price a misleading value. The mode would as well recur with values depending on many factors or would miss. However, each of the measures of central tendency has its unique significance. For instance, the mode if present would signify which price is most familiar with the perfume.

8. The range of the values is given by: $\text{Range price} = \text{Highest value} - \text{Lowest value}$

$$= 50.99 - 7.59$$

$$= 43.4$$

$\text{Standard deviation} = \sqrt{\text{variance}}$

$$\alpha = \sqrt{\frac{[\sum (X^2) - (\sum X)^2]}{N}}$$

$$\alpha = 12.68.$$

9. The measure of spread most appropriate with the prices of perfumes would be the range, as it would determine the benefits of preference to a particular perfume. For instance, if the range is not significant, no much loss would be incurred by buying the most expensive instead of the cheapest.

10. The distribution of prices is skewed because there is no symmetric distribution of the data about the mean. The mean is above the median point of the data, causing the skewness.

11. Acqua di Gi standard deviations from the mean:

$$\text{Mean} = 18.43$$

$$\text{Standard deviation} = 12.68$$

$$\text{Price of Acqua di Gi} = 50.99$$

$$2 \text{ standard deviations from the mean} = [2(12.68)] + 18.43$$

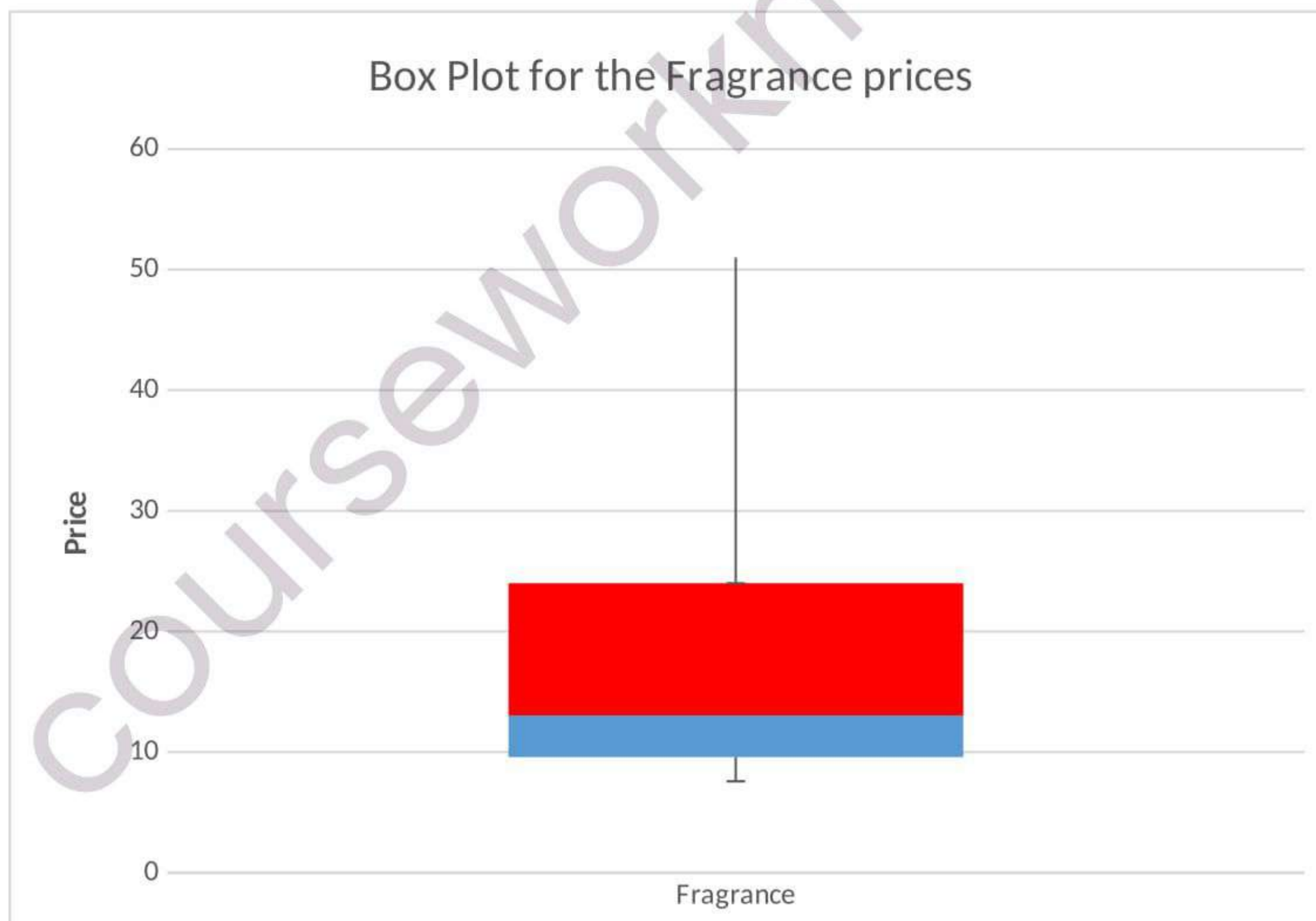
$$= 43.79$$

Therefore, Acqua di Gi is more than 2 standard deviations from the mean.

12. The price of Acqua di Gi is so high and seems to have been hyped above normal limits. The price alone renders *Acqua di Gi* an outlier. However, the data assumes that the cost of production is similar to all the perfumes.

13. Box Plot for the Fragrance prices

	Prices	Differences
Min	7.59	7.59
Q1	9.59	2
Median	13.05	3.46
Q3	23.99	10.94
Max	50.99	27



14. The percentile for the price of Nautica Blue?

	Prices	Differences
	7.5	
Min	9	7.59
	9.5	
Q1	9	2
Median	13.05	3.46
	23.	
Q3	99	10.94
	50.	
Max	99	27

The price of Nautica Blue is 10.59 dollars, which that lies in the Median class. It lay in the 50th percentile.

15. The values calculated are parameters since the data only uses sampled values. They are to assist in gauging the best price for purchase.

16. The price of, Acqua di Gi is too high to be placed as 'good.' Old Spike has the cheapest deal in the market.