

BUSA3110
Assignment 1

Due Date: Sunday, 10/4 BEFORE 11:59 PM

Objective: To learn and demonstrate how to analyze data using descriptive statistical method, communicate how statistical studies were conducted, and to generate and use statistical output using JMP.

This assignment is to be done *individually*. You may NOT discuss anything about the assignment either verbally or by any type of messaging with another student from class. You may ask me questions. You may use your book, D2L, myLab and any other internet resources.

You are to answer all questions by typing your answers into a WORD document and incorporating appropriate tables and charts into that same document. You will print and upload that document to the assignment folder on eLearning. Attach this document with your printed answers. You will also save the JMP scripts containing tables and charts to your data table(s) and upload that to the assignment folder on eLearning.

To better understand selling prices of homes in 10 North Georgia counties, data was collected for a random sample of homes that were sold in 2019. The data is available in the JMP file named “Assignment 1 Data” found on eLearning in the “Exercises and Assignments” module. Open the file in JMP and answer the following questions.

Note 1: The units of measure are Sale Price (\$), Living Area (sq. ft.), Lot Size (acres), Age (years)

Note 2: “Condition” is reported on a scale of 1 to 5, with 1 being “poor” and 5 being “excellent”.

1. About the data:
 - a. Describe the context of the data using the 5 Ws and H.
 - b. Identify the type of data (nominal, ordinal, quantitative) for each “what”, that is, for each variable.
2. **Generate the descriptive statistics for ALL variables and format** them professionally as we learned in class. Use JMP to add labels to the Fuel Type variable. Add the descriptive statistics (for ALL variables) into your report.
 - a. What was the selling price for the most expensive home? What was the property size (lot size)? Describe two other relevant “whats” about this home.
 - b. What was the largest **lot size** of a home sold in the sample? How did you identify it?
 - c. Report the values for three (3) measures of variation for **selling price**. Hint: one is IQR.
 - d. Describe the shape of the distribution of **interior area**? What was the mode from your histogram?
 - e. Were there any possible outliers in the data for the **age** of house? Which ones?
 - f. Is there a difference in the distribution of selling prices for homes with air conditioning compared to those without air conditioning? Support your answer with the appropriate charts and tables (include these in your printed answers).

3. Create a *contingency table* of Central Air Conditioning and Fuel Type (include it in your printed answers).
 - a. What percentage of homes having **gas-burning** furnaces heat also had central air conditioning?
 - b. What percentage of homes were heated with **electric** furnaces?
4. Does there appear to be a relationship between selling price and **living area**?
 - a. Create and format the appropriate chart and justify your answer (include it in your printed answers).
 - b. How “strong is the relationship? What numerical “measure” did you use? Attach that results as well.
5. Create a new table for the homes selling for **OVER \$325,000**. (Include additional necessary charts/tables in your report. Save the table and the scripts in a separate JMP file.)
 - a. Report the median house size (living area), median number of full baths and median number of bedrooms. Provide the associated charts/tables.
 - b. Write a few sentences in a brief paragraph comparing these to the overall statistics obtained in question 2. Be specific, that is, report all the values that you are comparing.
6. Submit your work
 - a. Save your Word document as “your name-assignment 1” at upload it to the assignment named “Assignment 1” in D2L.
 - b. Save your data tables with the charts and tables saves as scripts in the data tables “your name-data 1” (use “data 2” for additional table if needed) and upload it to the assignment named “Assignment 1” in D2L.

Format:

- Font: Times New Roman, 12 pt

Learning Outcomes

This assignment is directed towards the following course learning outcomes:

- select appropriate statistical methods to guide *decision-making*
- generate and use statistical output to analyze data
- communicate how statistical studies were conducted and the results of those studies
- professionalism in reporting results