

88. **FILE** Refer to the Lincolnville School District bus data. Prepare a report on the maintenance cost for last month. Be sure to answer the following questions in your report.
- Around what values do the data tend to cluster? Specifically what was the mean maintenance cost last month? What is the median cost? Is one measure more representative of the typical cost than the others?
 - What is the range of maintenance costs? What is the standard deviation? About 95% of the maintenance costs are between what two values?

25. The Director of Planning for Devine Dining Inc. wishes to study the relationship between the gender of a guest and whether the guest orders dessert. To investigate the relationship, the manager collected the following information on 200 recent customers.

Dessert Ordered	Gender		Total
	Male	Female	
Yes	32	15	47
No	68	85	153
Total	100	100	200

- What is the level of measurement of the two variables?
 - What is the above table called?
 - Does the evidence in the table suggest men are more likely to order dessert than women? Explain why.
46. **FILE** Refer to the Lincolnville School District bus data.
- Referring to the maintenance cost variable, develop a box plot. What are the minimum, first quartile, median, third quartile, and maximum values? Are there any outliers?
 - Using the median maintenance cost, develop a contingency table with bus manufacturer as one variable and whether the maintenance cost was above or below the median as the other variable. What are your conclusions?

A. Century National Bank

The following case will appear in subsequent review sections. Assume that you work in the Planning Department of the Century National Bank and report to Ms. Lamberg. You will need to do some data analysis and prepare a short written report. Remember, Mr. Selig is the president of the bank, so you will want to ensure that your report is complete and accurate. A copy of the data appears in Appendix A.6.

Century National Bank has offices in several cities in the Midwest and the southeastern part of the United States. Mr. Dan Selig, president and CEO, would like to know the characteristics of his checking account customers. What is the balance of a typical customer?

How many other bank services do the checking account customers use? Do the customers use the ATM service and, if so, how often? What about debit cards? Who uses them, and how often are they used?

To better understand the customers, Mr. Selig asked Ms. Wendy Lamberg, director of planning, to select a sample of customers and prepare a report. To begin, she has appointed a team from her staff. You are the head of the team and responsible for preparing the report. You select a random sample of 60 customers. In addition to the balance in each account at the end of last month, you determine (1) the number of ATM (automatic teller machine) transactions in the last month; (2) the number of other bank services (a savings account, a certificate of deposit, etc.) the customer uses; (3) whether the customer has a debit card (this is a bank service in which charges are made directly to the customer's account); and (4) whether or not interest is paid on the checking account. The sample includes customers from the branches in Cincinnati, Ohio; Atlanta, Georgia; Louisville, Kentucky; and Erie, Pennsylvania.

1. Develop a graph or table that portrays the checking balances. What is the balance of a typical customer? Do many customers have more than \$2,000 in their accounts? Does it appear that there is a difference in the distribution of the accounts among the four branches? Around what value do the account balances tend to cluster?
2. Determine the mean and median of the checking account balances. Compare the mean and the median balances for the four branches. Is there a difference among the branches? Be sure to explain the difference between the mean and the median in your report.
3. Determine the range and the standard deviation of the checking account balances. What do the first and third quartiles show? Determine the coefficient of skewness and indicate what it shows. Because Mr. Selig does not deal with statistics daily, include a brief description and interpretation of the standard deviation and other measures.

94. FILE Refer to the Lincolnville school bus data. Set up a variable that divides the age of the buses into three groups: new (less than 5 years old), medium (5 but less than 10 years), and old (10 or more years). The median maintenance cost is \$4,179. Based on this value, create a variable for those less than or equal to the median (low maintenance) and those more than the median (high maintenance cost). Finally, develop a table to show the relationship between maintenance cost and age of the bus.

- a. What percentage of the buses are less than five years old?
- b. What percentage of the buses less than five years old have low maintenance costs?
- c. What percentage of the buses ten or more years old have high maintenance costs?
- d. Does maintenance cost seem to be related to the age of the bus? Hint: Compare the maintenance cost of the old buses with the cost of the new buses? Would you conclude maintenance cost is independent of the age?