**Assignment 2 – Ch 2 Descriptive Statistics: Tabular and Graphical Representation**

1. State the difference between Bar Graphs and Histogram
2. Explain the types of relationship depicted by scatter diagrams by drawing appropriate diagrams.
3. Data for a sample of 55 members of the Baseball Hall of Fame in Cooperstown, New York, are shown here. Each observation indicates the primary position played by the Hall of Famers: pitcher (P), catcher (H), 1st base (1), 2nd base (2), 3rd base (3), shortstop (S), left field (L), center field (C), and right field (R).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| L | P | C | H | 2 | P | R | 1 | S | S | 1 | L | P | R | P |
| P | P | P | R | C | S | L | R | P | C | C | P | P | R | P |
| 2 | 3 | P | H | L | P | 1 | C | P | P | P | S | 1 | L | R |
| R | 1 | 2 | H | S | 3 | H | 2 | L | P |  |  |  |  |  |

a. Use frequency and relative frequency distributions to summarize the data.

b. What position provides the most Hall of Famers?

c. What position provides the fewest Hall of Famers?

d. What outfield position (L, C, or R) provides the most Hall of Famers?

e. Compare infielders (1, 2, 3, and S) to outfielders (L, C, and R).

f. Construct a bar graph

1. A safety engineer has charted the peak reactor temperature each day for the past year and has prepared the following frequency distribution

|  |  |
| --- | --- |
| **Temperature** | **Frequency** |
| Below 500 | 4 |
| 501-510 | 7 |
| 511-520 | 32 |
| 521-530 | 59 |
| 530-540 | 82 |
| 550-560 | 65 |
| 561-570 | 33 |
| 571-580 | 28 |
| 580-590 | 27 |
| 591-600 | 23 |
| **Total** | **360** |

List and explain any errors you can find in this distribution. Make necessary corrections.

1. Approximately 1.5 million high school students take the Scholastic Aptitude Test (SAT) each year and nearly 80% of the college and universities without open admissions policies use SAT scores in making admission decisions (College Board, March 2009). The current version of the SAT includes three parts: reading comprehension, mathematics, and writing. A perfect combined score for all three parts is 2400. A sample of SAT scores for the combined three-part SAT are as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1025 | 1042 | 1195 | 880 | 945 |
| 1102 | 845 | 1095 | 936 | 790 |
| 1097 | 913 | 1245 | 1040 | 998 |
| 998 | 940 | 1043 | 1048 | 1130 |
| 1017 | 1140 | 1030 | 1171 | 1035 |

a. Show a frequency distribution and histogram. Begin with the first class starting at 750 and use a class width of 100.

b. Comment on the shape of the distribution.

c. Construct an ogive.

d. What other observations can be made about the SAT scores based on the tabular and graphical summaries?

e. Show a stem-and-leaf display.

1. A survey of commercial buildings served by the Cincinnati Gas & Electric Company asked what main heating fuel was used and what year the building was constructed. A partial crosstabulation of the findings follows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year Constructed** | **Electricity** | **Natural Gas** | **Oil** | **Propane** | **Other** |
| **1973 or before** | 40 | 183 | 12 | 5 | 7 |
| **1974-1979** | 24 | 26 | 2 | 2 | 0 |
| **1980-1986** | 37 | 38 | 1 | 0 | 6 |
| **1987-1991** | 48 | 70 | 2 | 0 | 1 |

a. Complete the crosstabulation by showing the row totals and column totals.

b. Show the frequency distributions for year constructed and for fuel type.

c. Prepare a crosstabulation showing column percentages.

d. Prepare a crosstabulation showing row percentages.

e. Comment on the relationship between year constructed and fuel type.