# Summarizing One Qualitative (Categorical) Variable

* Frequency distribution table
  + Category name
  + Frequency
  + Relative frequency
  + Percent frequency
* Pie chart
  + Portrays the frequency, relative frequency, or percent frequency of each category
  + May not be best graph when the values of two or more categories are close or equal in value (difficult to distinguish the relative size of the wedges)
* Bar chart
  + Portrays the frequency, relative frequency, or percent frequency of each category
  + Bars are separated by space

# Summarizing One Quantitative (Numeric) Variable

* Frequency distribution table
  + Class name
  + Frequency
  + Relative frequency
  + Cumulative frequency
  + Percent frequency
  + Cumulative relative frequency
* Histogram
  + Portrays the frequency, relative frequency, or percent frequency of each class
  + Bars are adjacent (touching)
  + Classes are mutually exclusive and exhaustive
  + Displays the overall distribution, which is classified by its shape…
    - Symmetric
    - Skewed right
    - Skewed left

# 

# Summarizing Two Qualitative (Categorical) Variables

* Contingency table
  + Shows relationship between two categorical variables
  + Shows counts by category pairs in cross-tabulation format, i.e., categories of one variable make up the rows while categories of the other variable make up the columns
  + Used to study the relationship between two categorical variables
  + Shows the frequencies or percent frequencies of grand total, row, or column
* Side-by-side bar chart
  + Portrays the frequency or relative frequency of each category pair
  + Bar pairs are separated by space

# Summarizing Two Quantitative (Numeric) Variables

* Scatterplot
  + Shows relationship between two quantitative variables
  + Graphical display consists of two axes and dots
    - Each axis is marked and labeled to represent one of the variables
    - Each dot represents a pair of observed values
* Types of relationships include…
  + Linear relationship (straight line)
    - Positive (positive slope) – as x increases, y increases
    - Negative (negative slope) – as x increases, y decreases
  + Non-linear relationship (curved)
  + No relationship (scattered, no pattern)