**Graphical Representations of Data**

Visualizing data sets is important for understanding the nature of the population being studied.

**Definitions**

1. Range: The range of a data set is the difference between the highest and lowest observed values, *xi*

2.

**Frequency Distributions**

1. Ungrouped Frequency Distribution

2. Grouped Frequency Distribution

i. Find data set range.

ii. Determine number of classes. Typically between 5 – 20, depending on the size and scale of data.

iii. Find class width. Round up, if necessary.

iv. Find the lower and upper class limits, **LLi**,, and **ULi** , for each *i* up to *n.*

for i = *1, 2, … , n*

iv. Find the lower and upper class boundaries, **LBi**,, and **UBi** , for each *i* up to *n.*

for i = *1, 2, … , n*

iv. Sort data set into classes and tall up the frequency of each classes.

**Histograms**

1. Construction

2. Variations

i. Bar Charts

ii. Pareto Charts

iii. Relative Frequency Plots

iv. Stem-Leaf Plots

3. Relative Frequency

**Distribution Shapes**

1. Uniform

2. Normal

3. Bimodal

4. Skewed

5. Fat-tailed

**Ogives**

1. Construction

Other Types of Graphs

1. Pie Chart

2. Time Series