AMS 7: Lecture 2

Visualize Data and Central Tendency

April 6, 2017

Agenda

Introduction
- Announcements
- Daily Quote

Notes
- Statistics
- Frequency
- Plotting Data
- Central Tendency

Class Updates

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Quote

"I start in the middle of a sentence and move both directions at once."
John Coltrane

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Descriptive and Inferential Statistics

Important Distinction:

1. **Descriptive Statistics**:
2. **Inferential Statistics**:

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Summarizing the Data

Occurrences of an Event

1. **Frequency**:
2. **Frequency Distribution**:

Why

Reasons Why we create a Frequency Distribution

1. Summarize Large Data Sets
2. See Distribution of data and outliers
3. Used for plotting Data

Example

Frequency distribution of cotinine (a metabolite of nicotine) level of smokers. A sample of 40 smokers and their cotinine level) in ng/ml (1st edition)

1	0	131	173	265	210	44	277	32	3
35	112	477	289	227	103	222	149	313	491
130	234	164	198	17	253	87	121	266	290
120	167	250	245	48	86	284	1	208	173

Frequency Distribution

Procedure For Frequency Distribution

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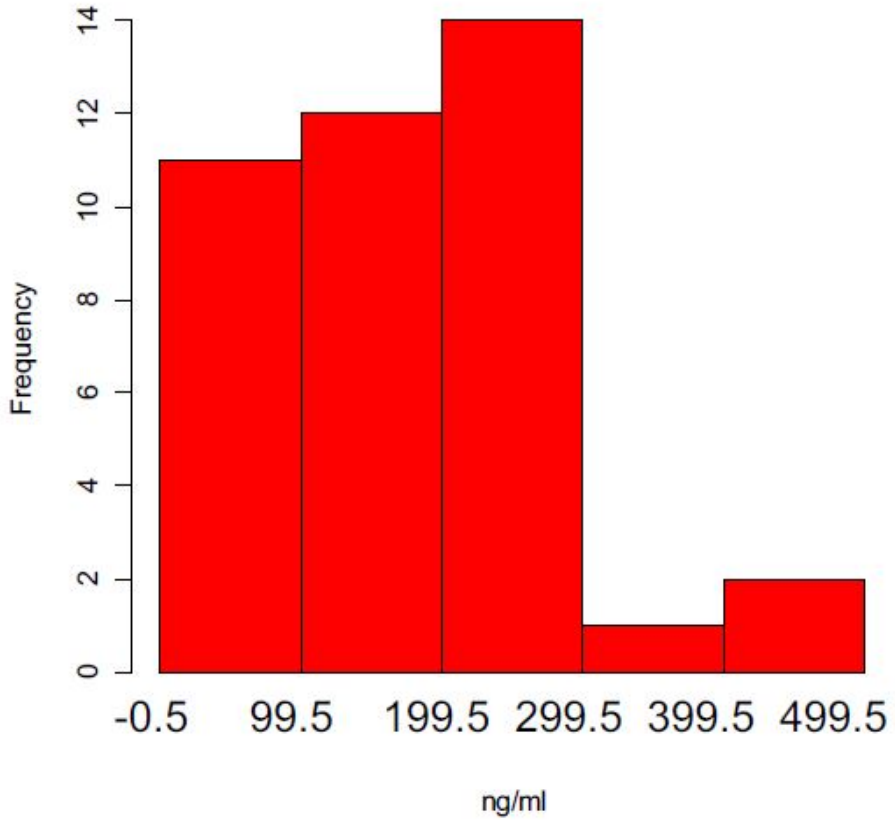
View Data

Viewing Data:

1. Histograms
2. Frequency Polygons
3. Bar Plots or Bar Graphs
4. Pareto Charts
5. Scatter Plots
6. Time Serie Plots
7. Others: Dot Plots, Stem-and-Leaf Plots, and Pie Charts

Histogram



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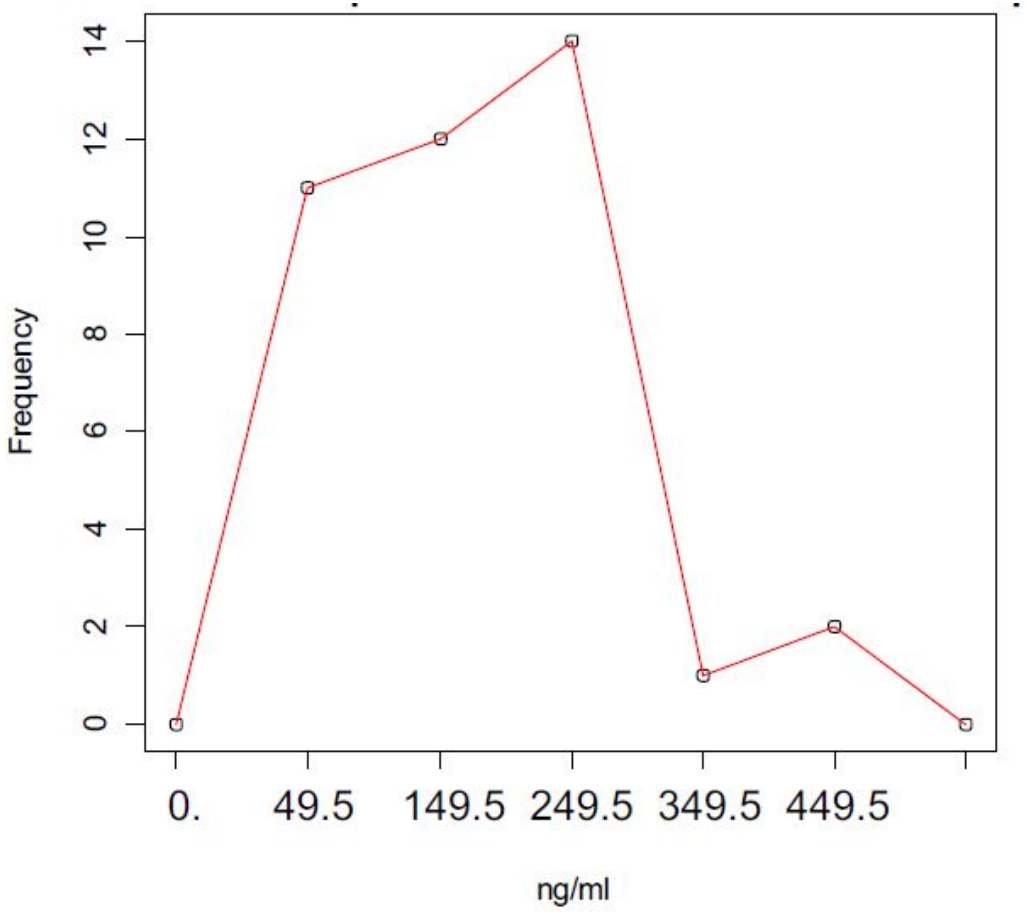
Frequency Polygon



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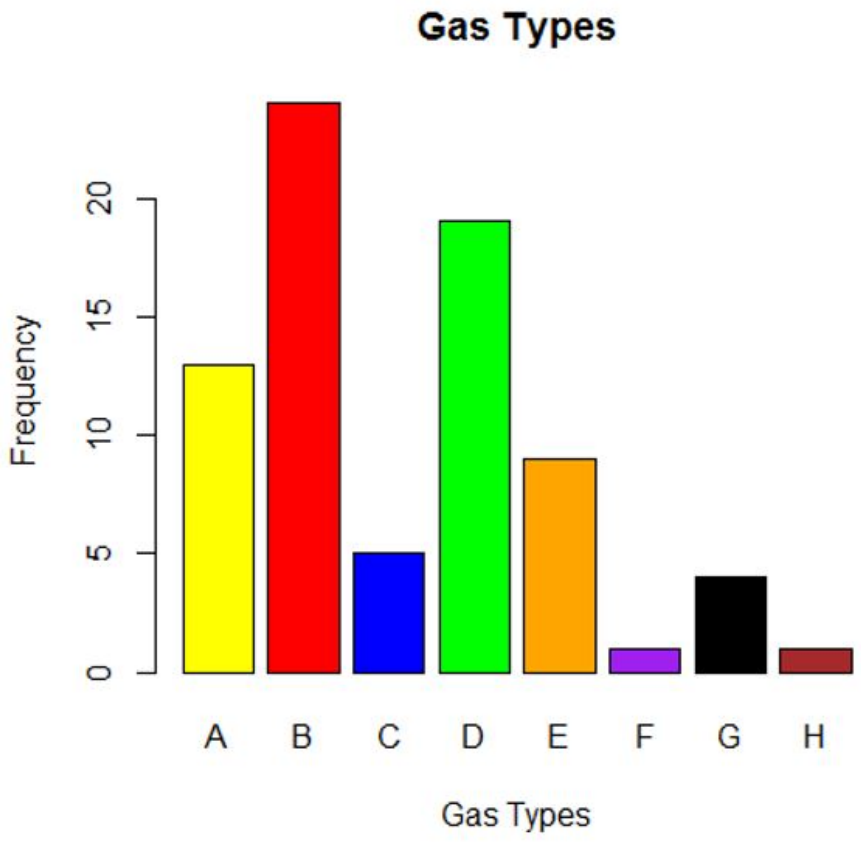
Barplot



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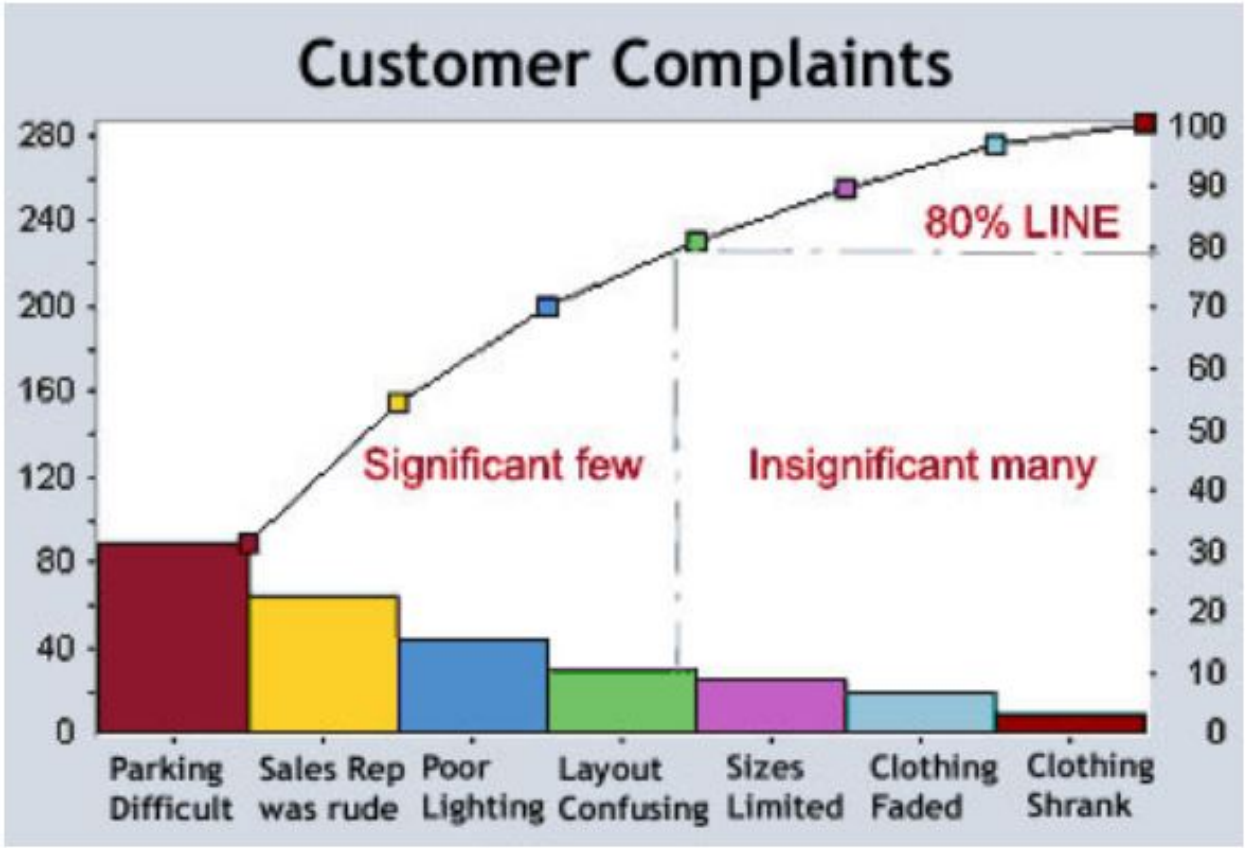
Pareto Charts



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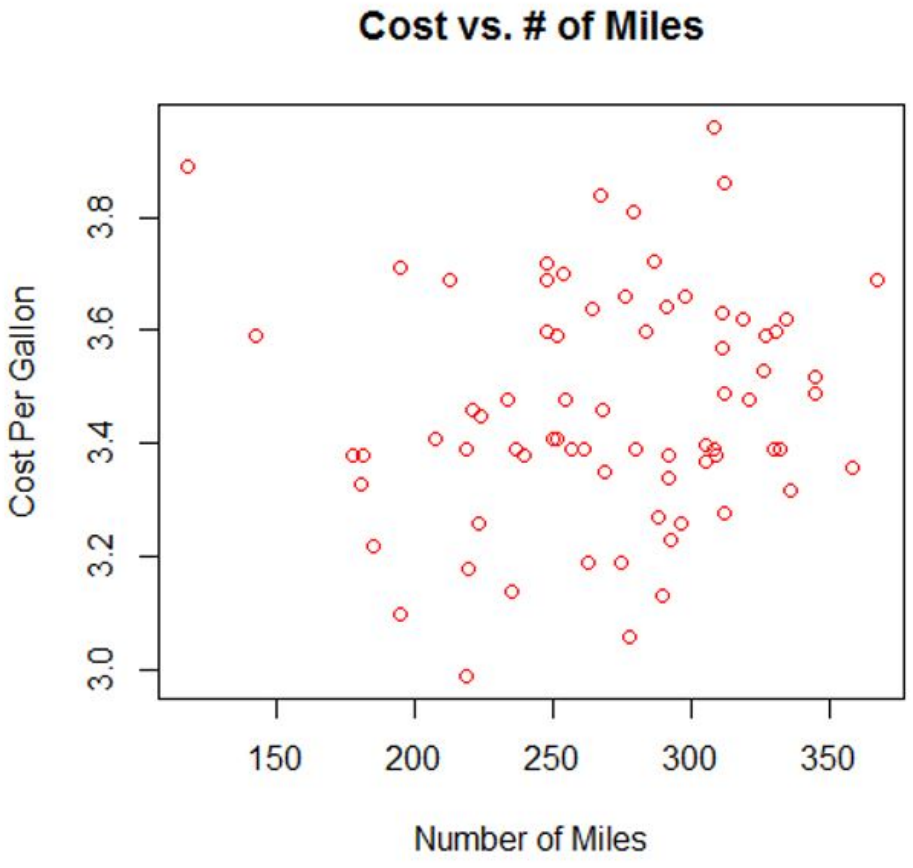
Scatter Plots



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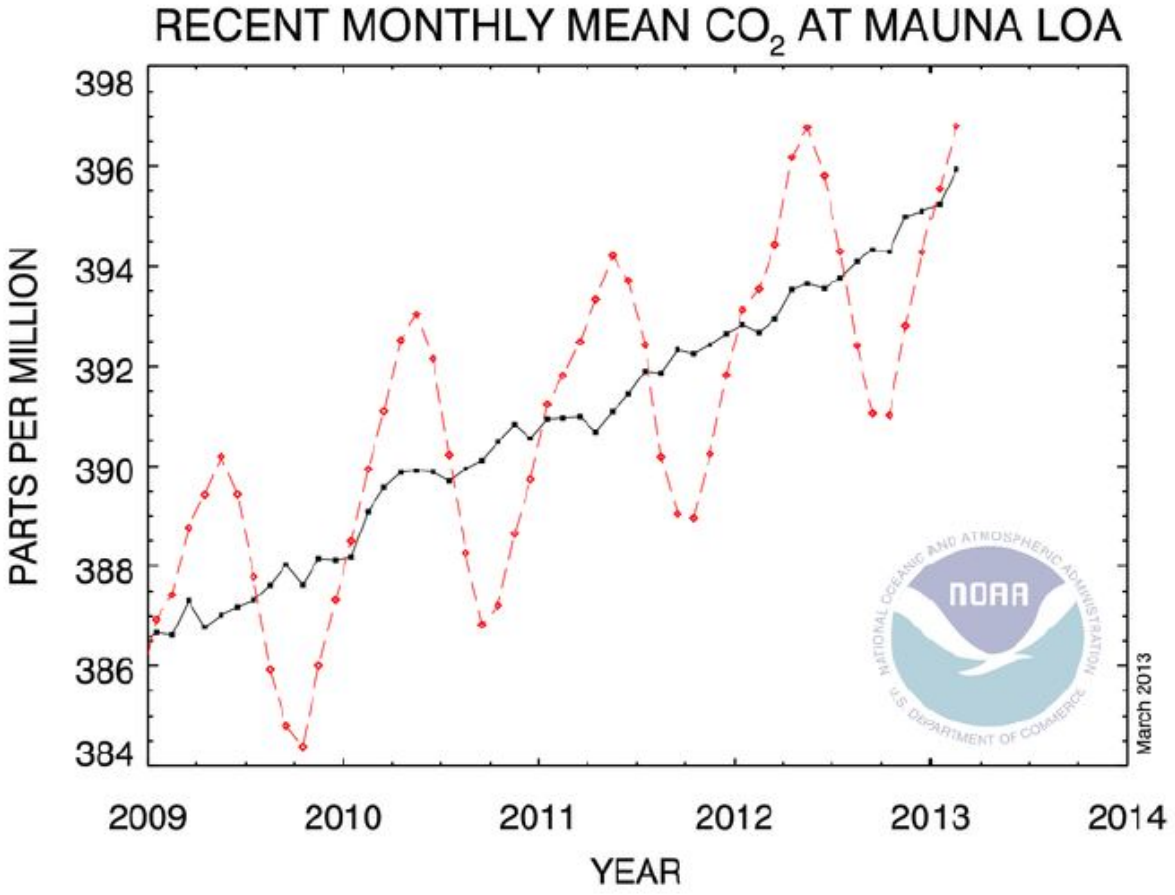
Time Series Plot



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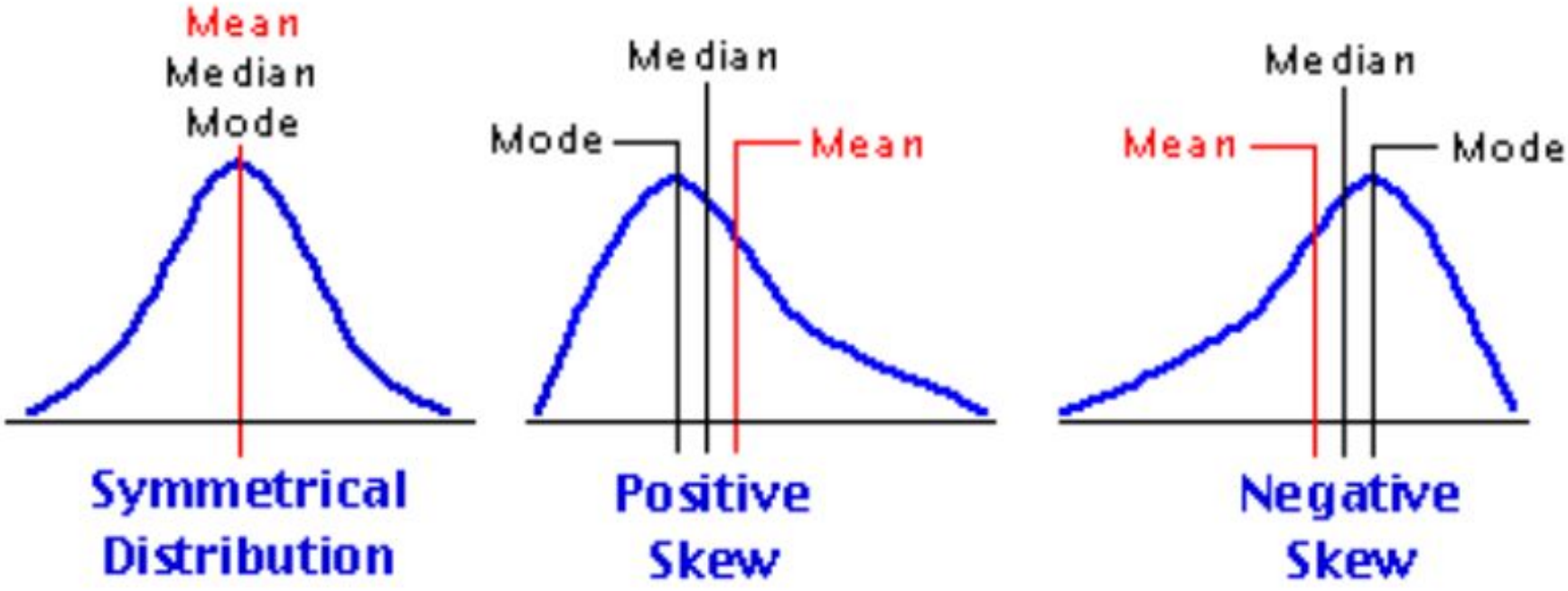
Measures of the Center

Central Tendency:

1. Mean
2. Median
3. Mode
4. Midrange
5. Weighted Mean

Frequency Distribution

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