Exam 1 will be given on Thursday, Feb 16, 12:30 – 1:45PM. See Exam 1 Announcement.

The examination will cover the topics:

**Graphical Methods of Displaying Categorical and Numerical Data:**
- Frequency Table
- Bar Chart
- Pie Chart
- Histogram
- Stem and Leaf Display

**Numerical Methods for Describing Data:**
- Sample Mean
- Median
- Range
- Sample Variance
- Sample Standard Deviation
- Z-score of an Observation
- The Empirical Rule
- Outliers
- Percentiles
- Quartiles
- IQR
- Fences
- Tests for Outliers
- Box Plot

To take the exam you will need a **calculator**.

The exam is an open book exam. However, in order to stay focused and organized during the exam, I would recommend you prepare a self-made summary sheet with any formulas, algorithms, comments, etc. that you might find useful.

In order to prepare for the exam please go over:

1. Your lecture notes (Chapters 1-3)
2. Course Slides (Chapters 1-3) (see Content Area Course Slides)
3. Quizzes (#1-3) (see Content Area Quiz Solutions)
4. Exam 1 Practice Problems (see Exam 1 Study Guide)
Here are some problems to help you revise important ideas.

1. For Data Exam manually draw a histogram with five (non-empty) classes.

2. The ages of a sample of 25 salespersons are as follows:

21 24 24 26 28 28 30 30 31 32 34 35 35 37 38 40 41 43 45 45 45 47 53 56

Construct a stem-and-leaf display repeating each stem two times.

3. Consider the following artificial data set:

3 -5 7 4 8 2 8 -3 -6

a. What is the sample size?
b. Find the sample mean.
c. Find the median.
d. Find the range.
e. Find sample variance $s^2$.
f. Find sample standard deviation $s$.
g. Find $z$-scores of observations -6 and 8.

4. Consider the following artificial data:

-4, -8, -5, 8, 8, -9, 4, 20

a. Find $P_{30}$, $P_{60}$, and $P_{95}$.
b. Find $Q_1$, $Q_2$, and $Q_3$.
c. Calculate the IQR.
d. Calculate the fences.
e. Does the fence test identify outliers? Why?
f. Construct a box plot.