**Data Types**

Identifying the type of data you are working with is important because you can only perform specific techniques to specific types of data.

**Nominal**  -- identifies objects without placing them in numerical order (e.g. male/female, red/green/blue, Republican/Democrat/Independent). You cannot find the mean or standard deviation of nominal data, but you can apply cross tabs to see how two categories relate to one another (e.g. political affiliation and gender).

**Ordinal** – distinguishes and ranks objects from lowest to highest (Likert scales). Although you can perform numerical operations on this type of data, all conclusions should be examined carefully. For example since a Likert scale of anywhere from 5 to 9 gradations can be used, it is unclear that the differences between each number on a Likert scare are equal. Because of this it is difficult to draw firm conclusions when, for example, we read that Professor X received an average of 4.3 on his student course survey and Professor Y received a 3.9. What does the .4 difference in the average mean in this context? You might say that Professor X was “better” than Professor Y, but by what amount? And how do you define “better?” In spite of these limitations, statisticians claim that ordinal data can be treated like interval data pretty safely if the data have a fairly smooth distribution, the sample size is fairly large and the test is robust.

**Interval** – same as ordinal but also quantifies differences between categories but lacks a true zero point (Centigrade and Fahrenheit temperature)

**Ratio** – interval scales with absolute zero point (money, age). With this scale you can perform the broadest range of statistical calculations.