

Descriptive Statistics

Note: For some students reading this assignment, much of this material will seem elementary. That is great. You can proceed through it at a rapid pace. For others, it will initially appear to be written in a foreign language (Greek) and appear formidable. Don't worry, the operations are simple once you learn the basic terms.

This section is about organizing quantitative data to see trends. It is difficult to do this with a bunch of unorganized numbers.

Here are the scores of a group of Third Graders on a spelling test:

4, 5, 2, 3, 3, 7, 4, 3, 5, 4

Listed this way, the numbers don't mean very much. They are a little more meaningful if we list them in order, from low score to high score:

2, 3, 3, 3, 4, 4, 4, 5, 5, 7

This shows that most of the scores are below 5, there were no scores of 0 or 1, and none above 7.

In the lab session, we will analyze these scores to illustrate several important terms and concepts. Don't be put off by the Greek symbols—they all have simple meanings, and once you learn the basics, the combinations will make sense. The basic symbols are:

X = an individual score

N = number of scores

Σ = sum, so ΣX = sum of individual scores

2 = square of a number, so X^2 = the square of an individual score, and ΣX^2 is the sum of all the squared scores-- after you square each score, you add the squared scores, to obtain the sum of the squared scores.

and finally, $(\sum X)^2$ = the sum of **all** individual scores squared—you obtain the sum of all the scores $(\sum X)$ and then square this number $(\sum X)^2$

There are some other, more specialized symbols that you will encounter, but those listed above are the basics.

For your homework assignment this week, read Chapter 18 and do sample problems 1 & 2. Don't worry if you miss something doing the work on your own, the lab session will give you further practice in computing the mean, mode, standard deviation, and other concepts discussed in this chapter. Following the practice problems and the lab session, if you still have problems with the meaning of any terms or using the formulas, see your TA or Bob during office hours. There is no reason why a smart person like yourself (and if you are at UCD, you are a smart person) cannot learn the basic concepts and operations, which are really organized common sense.