Lab

# Lab 1 – Introduction to R Using Boolean Logic

Write a piece of R code that you could use to teach a seven-year-old child about Boolean logic. If you have never encountered Boolean logic before (sometimes it is called Boolean algebra), you will have to look it up to discover the three essential operations (AND, OR, NOT) and how they work. In addition, you will have to discover the “operators” (i.e., the special punctuation marks) that R uses to represent Boolean operations.

For example, here is a single line of code (and the response from the R-console in bold) that represents one of the two possible outcomes of the AND operator:

> # This line shows the Boolean AND function at work

> 1 & 1

**[1] TRUE**

Take note of several important aspects of this example: (1) It has a comment that explains a little bit of what is going on (all of the stuff after the # character). (2) It needs more comments if it is going to be helpful to a seven-year-old. (3) More lines of code are needed to demonstrate the other outcome of AND, as well as all of the outcomes of OR and NOT. Keeping your seven-year-old in mind, write and submit the rest of the code and comments.

Then use these conditional statements within a if statement to printout the expected logic. For example:

> # show the use of an ‘if’ statement - that 1&1 is true

> if( 1&1 ) print(”1&1 is true”) else print(“error somewhere”)