Lesson 19/01/25

Introduction to R and R studio — continued:

Comparing things

The idea of binary logic is extremely important in traditional programming — quantum programming is a different paradigm and is beyond the scope of this class. In binary logic, we will code statements into 'TRUE' or into 'FALSE'.

Comparison operators allow us to describe a statement in binary logic. Consider the statement:

pi == 'pi'

We earlier found that the function print() gave two different outputs for the two inputs:

1. pi, and
2. 'pi'

have two different outputs. A function is defined by having only one output for each input.

Exercise 2.1

Conjecture, what is the output of the statement

pi == 'pi'

?

Test that statement in the console.

Programming languages give tools to use binary logic to perform actions. The "if" statement is an extremely important example – this acts like a switch "on" or "off".

Type the following into the console:

if (pi == 'pi'){print('It is not true!')}

What is the response? Why do you think you have this response?

The exclamation point "!" is the logical negation operator. As a function, it sends "TRUE" -> "FALSE" and "FALSE" -> "TRUE".

Type

if (!pi == 'pi'){print('It is not true!')}

into the console. What is the response? Why do you think you have this response?