**Module 1 Variables and Conditionals**

We are ready to start programming. Programs are a sequence of definitions and commands.

Definitions are evaluated. Variables, functions etc.

Commands: Commands are simpler expressions, statements that inform the interpreter to do something that are executed in a shell. We can also write commands in a file that gets executed in the shell.

**Objects**

Objects are fundamental primitives that represent data. Every object has a type or the type of data it is, and this informs the program whether it can act on it or not and how it can act on it.

Objects are scalars (cannot be subdivided) or nonscalars (has internal structure that can be accessed)

**Scalar objects**

Floats, Int, None, Boolean

We can perform mathematical operations of addition, subtraction, multiplication, division, floor division, modulo, exponentiation on floats and integers. The order of operation matters here, from left to right (like in math). If a parenthesis is introduced, then it changes the order of operation.

**Variables**

When we write code, we want our computer to remember results. The equal sign assigns a value to a variable name, this makes the equal sign an assignment operator. This allows us to store the value in the computer’s memory. We can retrieve the value associated with that name by invoking(calling) the name.

**Operators and Branching**

Comparison operators on floats and integers.

i > j , i >=j, i< j, i<=j, i==j, i!=j. This allows us to ask if these two objects are similar, not similar, greater than or less than etc. This returns either True or False called a Boolean. We can also combine these operators to put together more complicated expressions.

Branching allows us to make choices and decisions. Simple branching program

* Test a conditional,

Truth block

Do something.

False block

Do something else.

Python knows what belongs to the true or false block and which pieces belong together, based on the indentation.