**Python Basics**

This module teaches the basics of Python and begins by exploring some of the different data types such as integers, real numbers, and strings. Continue with the module and learn how to use expressions in mathematical operations, store values in variables, and the many different ways to manipulate strings.

**Learning Objectives**

* Demonstrate an understanding of types in Python by converting or casting data types such as strings, floats, and integers.
* Interpret variables and solve expressions by applying mathematical operations.
* Describe how to manipulate strings by using a variety of methods and operations.
* Build a program in JupyterLab to demonstrate your knowledge of types, expressions, and variables.
* Work with, manipulate, and perform operations on strings in Python.

**Type**

We can an int, float, str and Boolean type of variable.

**Expressions and Variables**

Expressions describe the type of operations a computer performs.

Expressions are operations that python performs.

43 + 60 + 16 + 41

The numbers are operands and the math symbols (additions) are called operators.

We can // to give a rounded division. In some cases the result might not be the same with the normal division.

Python follows mathematical conventions when performing a mathematical operations.

We use variable to store values. my\_variable = 1.

**String**

A String is a sequence of characters contained within two quotes (single or double quotes):

A string can be spaces, digits and special characters.

We can stride variable:

Name= “Michael Jackson”

Name[::2] : “Mcaljcsn”

We can also use slicing.

Name[0:5] : “Michae”

Name[0:5:2] : “Mca”

We can also use the len() function to return the length of a string.

We can concatenate a string by using the addition symbols.

We can replicate the value of a string

3 \* “Michael Jackson” = Michael Jackson Michael Jackson Michael Jackson

String escape sequences are:

\n which is used to a new line

\t represents a new line

We can also place r”Michael Jackson”) in front of a string.