**Section 3: Python Object and Data Structure Basics**

**01.02.**

**11. Introduction to Python Data Types**

Lists and Tuples are ordered because:

* we can access the elements by using an index
* the insertion order is maintained

**13. Numbers – FAQ**

0.1 + 0.2 – 0.3 != 0.0 because in memory each number is represented as base 2 fractions

**14. Variable Assignments**

Python uses Dynamic Typing, so we can reassign variables to different data types

Use type() for type checking

**15. Introduction to Strings**

Because strings are ordered sequences, we can use indexing and slicing

There a reverse indexing

Slicing has the following syntax: [start:stop:step]

**16. Indexing and Slicing with Strings**

Reversing a string: my\_string[::-1]

**02.02.**

**17. String Properties and Methods**

Strings are immutable

Methods: .upper(), .lower(), .capitalize(), .split()

**19. Print Formatting with Strings**

String interpolation is the process of substituting values of variables into placeholders in a string

There are 2 widely used methods:

* .format()
* f-strings

Examples for .format():

print(‘This {1} {0} {2}’.format(‘a’, ‘is’, ‘text’)) – access the strings by index

print(‘This {i} {a} {t}’.format(a=‘a’, i=‘is’, t=‘text’)) – access the strings as variables

print(‘Price is {value:width.precision f}”.format(value=results)) – floating point formatting

Examples for f-strings:

print(f‘This {var\_one} {var\_two} {var\_three}’)

**20. Print Formatting FAQs**

Resource for formatting: <https://pyformat.info/>

**21. Lists in Python**

A list has the following methods:

* Clear
* Copy
* Count – counts the number of apparitions of the passed argument
* Extend – adds the elements of an iterable (list, tuple, string) at the end of the list
* Index
* Insert – insert an element at a position
* Pop – removes an element placed at a given index
* Remove – removes the passed element
* Reverse
* Sort
* Append