**Python Basics**

**Introduction and Overview**

* Input/output functions (print, input)
* Variables
* Whitespaces/indentation (blocks and scopes)
* Keywords
* Operators
  + - Arithmetic (+, -, \*, /, \*\*, %, //)
    - Comparison/ relational (<, >, <=, >=, ==, !=)
    - Logical (and, or, not)
    - Bitwise operators (&, |, <<, >>, ~, ^)
    - Identity (is, is not)
    - Membership (in, not in)
    - Ternary operator (syntax: operand1 if condition else operand2)

**Control statements**

* **Conditional statements**
  + - If
    - If.. else
    - If..elif..else
* **Loop statements**
  + - While
    - For (on iterable objects, with range function)
    - Additional controls (break, continue, pass)

**Functions**

* Function definition, function call, actual and formal parameters, return value
* Arguments: keyword arguments, default arguments
* Variable number of positional arguments(\*args)
* Variable number of keyword arguments(\*\*args)
* Generator function (yield)
* Lambda functions (unnamed functions, only one expression )
* Advanced functions (reduce, map, filter, decorators, zip)
* In-Built Functions (number functions, string functions, object functions, type conversion, container functions)

**Data Structures**

* **Number** (int, float, complex)
* **Strings** (ordered-immutable-collection of characters)
  + Len, index, upper, lower, capitalize, islower, isupper, isalpha, isdigit, isalnum, starstwith, endswith, split, join, replace, and slicing of the string objects
* **List** ((ordered-mutable-collection of multiple elements (same or different))
  + Slicing, extend, index, insert, append, sort, sorted, pop, remove, reverse, copy
* **Tuple** (ordered-immutable-collection of multiple elements (same or different))
  + Slicing, index, count
* **Sets** (unordered- mutable-collection of unique elements (same or different))
  + add, update, remove, pop, discard, clear, union, intersection, difference, symmetric\_difference
* **Dictionary** (unordered- mutable-collection of key value pairs)
  + Keys, values, items, update, pop, popitem, setdefault, get, clear,

**Exception Handling**

* Try, except, else, finally, assert, raise, exception types

**File Handling**

* **Directories:** getcwd, chdir, rmdir, mkdir, listdir, os.path.exists, isfile, isdir,
* **Files:** Open, close, read, write, modes(r, w, a, r+, w+, a+, rb, wb, ab, rb+, wb+, ab+), seek, tell, with open

**Built-in Functions:**

* **Type conversion:** int(), float(), str(), list(), tuple(), dict(), set(), bool()
* **Object Functions:** id(), type(), isnistance()
* **Input/output functions:** print(), input()
* **Container functions:** any(), all(), filter(), map(), reduce()
* **Lambda functions**
* **Decorators**