Python – Basics

Digital Lync

INNOVATION - EDUCATION - INCUBATION

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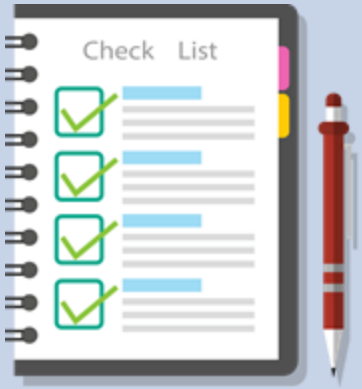

Python Data types

- Numeric
- Boolean
- Sequences
- Sets
- Mappings

Data types object

- Mutable
- Immutable

Data Types – Numeric

Numeric Type: Data set which holds the numeric values

- **Int**: It stores the Integer type of data.
  eg: a = 50

- **Long**: long integer stores
  eg: b = 10900000

- **Float**: data type which stores both numeric and decimal part
  eg: c = 29.89

- **Complex**: data type that stores complex numbers (real part & imaginary part)
  eg: d = complex(3, 4)

Data Type – Boolean, Sets

Boolean: Build-in data type “True” or “False”

- True: 1 or “Some Value”
- False: 0 or “ ” # empty string

Sets:

- set: an unordered collection of unique objects
  eg: a = set(10.00, ‘Man’, 12, True, (28+ 9i))

Data Type – Sequence

Sequence:

- **str**: string type
  eg: a = ‘python’ ; type(a)

- **List**: ordered sequence of item, items need not be of same type.
  eg: d = [‘a’, ‘b’, 20, 19.25, True, complex(2, 3)]

- **Tuple:** sequence of items similar to lists, but they are not mutable and faster than list as they will not change.
  eg: t = (‘python’, ‘programming’, ‘class’, complex(4,6))

Data Type – Mappings

Dictionary:

One of the import data type of Python, it is a combination of key value pairs

Synatax:

```
my_dict = {}
my_dict = {‘Key’: ‘Value’}
```

eg: my_dict = {'name': 'Alice', 'Age': 23, 'Education': 'BE(CS)', 'Addr':['Kukatpally', 'Hyd', 500081]}

Data types in Python can be distinguished based on whether objects of the type are

- Mutable
- Immutable

Immutable	Mutable
Once initialize cant be changed, need to re-initialized	Value can be change
Int, float, long, complex	Byte array
Str, tuple, frozen set,	List, Set, dictionary

Type Conversion

Type conversion is the process of converting a variable from one type to another type. Two ways to do that.

- **Implicit conversion**: Internally the compiler takes care of the conversion.

  eg: a = 4
  b = a + 1.1 #internally it converts 4 to 4.0 int to float conversion.
  o/p: 5.5

- **Explicit conversion:** Explicitly programmer specifies the conversions.

Conversion	Description
a = int(2.7) -> a = 2	It converts a value from int to float
b = float(9) -> b = 9.0	It converts b value form float to int
c = str(4.5) -> c = “4.5”	It converts c value float to string

Assignment - 4

1. Write a program to create Numeric values, Boolean values & create sets

2. Write a code to generate a set and a frozenset, try assigning values to both as see error if any.

3. Create a dictionary for students record (eg: Name: ‘Alice’, Marks_1 = 75, Marks_2= 89 etc.,)

4. Write a program to carry out implicit and explicit conversions