

## Assignment - 2

Q1) What are the data types in Python? Explain.

Data types are used to describe the character of a variable.

Python has six standard data types.

i) Numbers

↓  
3 types

int  
float  
complex

a=5      b=2.5      c= 2+3j  
(decimal)

ii) String

\* it is a ordered sequence  
of character (anything in " ")  
Ex: a = "Tahaeer"

iii) List [ ]

\* it contains series of values

\* it is mutable

Ex: a = [1, 2, 3, 5.5, "one"]

iv) Tuple () Parenthesis

\* sequences of Python objects  
separated by commas

\* They are immutable

Ex: t = (50, 15, 12, 6, "Python")

v) set { }

\* it is a unordered collection of items

Ex: a = {1, 2, 3, 4, 5, 6}

\* mutable

vi) Dictionary: { }

\* In dictionary item stores are stored and fetched by using key & value

\* it is used to store huge amount of data

Ex: d = {1: 'T', 2: 'M', 3: 'S'}

Output:

Print(d) {1: 'T', 2: 'M', 3: 'S'}

Q2 Explain the brief history of Python

- \* Python is an interpreted (high level) programming language
- \* It is created by Guido van Rossum at Centrum Wiskunde
- \* Einförmatic (in Neather land)
- \* Python was named for BBC TV show Monty Python's Flying Circus.
- \* It is concived in late 1980 & its implementation was started in December 1989.

## ② Explain the operators in Python

\* To perform some arithmetic operations

Type of operators

\* Arithmetic operators

$$\begin{array}{lll} \text{i) } + & \text{ii) } - & \text{iii) } \times \\ \cancel{\text{add}} & 2-1=1 & 2\times 1=2 \\ & 1+2=3 & \end{array}$$

$$\begin{array}{ll} \text{iv) } / \text{(division)} & \text{v) } \% \text{(remainder)} \\ \cancel{2+4}=4/2=2 & 4\%2=0 \end{array}$$

$$\text{vi) } // \text{(division) (int)}$$

$$4//2=2 \quad \cancel{4/2}=0.5$$

$$\begin{array}{l} \cancel{2+4}=2 \\ 5/2 \end{array}$$

\* Assignment operator

$$\text{i) } = \text{(assignment)}$$

$$a=b$$

The value of b is assigned to a

Logical operators

- i) AND (if both the conditions are true then it is true)
- ii) NOT (not (a&b) is false)

\* Comparison operators

$$\text{i) } == \text{ (equal to) (ordination)}$$

~~a+b~~ 8==4 is not true

$$\text{ii) } != \text{ (not equal) } (8+8!=2) \text{ is true}$$

$$\text{iii) } < \text{ (less than) } 8<9 \text{ is true } \quad \text{iv) } > \text{ (greater than) } 8>4 \text{ is true}$$

$$\text{v) } \leq \text{ (less than or equal to) } 8\leq 8 \text{ is true } \quad \text{vi) } \geq \text{ (greater than or equal to) } 8\geq 4 \text{ is true}$$

\* Bitwise opertor

$$\text{i) } \& \text{ (AND)}$$

$$\text{ii) } | \text{ (OR)}$$

$$\text{iii) } \wedge \text{ (XOR)}$$

$$\text{iv) } \sim \text{ (complement)}$$

$$\text{v) } \ll \text{ (leftshift)}$$

$$\text{vi) } \gg \text{ (rightshift)}$$

ii) Logical OR

If one of them is true

the condition is true

We explain the feature of Python

i) Easy to learn & use

\* it is developer friendly & high level programming language

ii) Expressive language (it means understandable)

iii) Interpreted language

\* Executed the code line by line

iv) Portable

\* it can use on different platforms like windows  
Linux etc.

v) Free & open source

\* it is freely available in its official website

vi) Object Oriented Programming language

\* it consists class & objects

vii) GUI Programming support

\* Graphical interface can be developed,

Q) Distinguish why Python is an interactive interpreted language.

If Python is an interpreted language it means when we run the code it checks through the line by line unlike C C++ are compiled programming language.

\* It is interactive when code is entered therefore will be shown on the screen so it is interactive.