# Assignment-2

1. What are the data types of ph python? Explain the data types defined in python

-) Data types:-

1. Numbers
2. String
3. List
4. Tuple
5. Dictionary

Numbers:- Numbers store numeric value python supports 4 types of Numeric data.

1. int (signed integers like 10, 2, etc)
2. long (long integers used for a higher range of value like 908090800 etc)
3. float (It is used to store floating point numbers like 1.9, 9900 etc.
4. complex (complex numbers like 2+14j.

String:- The string can be defined as the seq of value characters represented in the quotation marks In python we use single, double or triple quotes to define a string.

Ex:- "hello"

List:- List are similar to arrays in c however, the list contain data of different types. The items stored in the list are seperated with a comma and enclosed with in the square brackets[]

We can use list[i] operator to access data of list

Ex:- L = [1, "Li", "python", 2]

print (L[-1])

O/p:- 2

Tuple:- A tuple is similar to the list in many ways like lists, Tuple also contain the collection of items of different data types. The items of tuple are seperated with a comma(,) and enclosed in the parinthesis ().

Ex:- t = ("Li", "python", 2)

print (t[1:])

O/p : ('python', 2)

Dictionary:- Dictionary is an ordered set of a key, value pair of items. It is like an associative array, key can hold any primitive data type where as value is an arbitrary python object

Ex:- d = {1 : "jimmy", 2: "Alex", 3: "John"}

print ("1st name is", d[1])

O/p:- 1st name is jimmy.

2. Briefly Explain history of python?

=) python history:-

* python laid its foundation in the late 1980s
* The implementation of python was started in the December 1989 by Guido Van Rossum at CWI in Netherland.

* In February 1991, Van Possum published the code (labeled version 0.9.0) to alt.sources.
* In 1994, Python 1.0 was released with new features like: lambda, map, filter, and reduce.
* Python 2.0 added new features like: list comprehensions, garbage collection system.
* On December 3, 2008, python 3.0 (also called "Py3k") was released. It was designed to rectify fundamental flaw of the language.
* ABC programming language is said to be the precursor of Python language within Amoeba Operating System.
* Python is influenced by following programming languages:
  * ABC language
  * Modula-3.

(3) Explain the operation in python?

⇒ (i) Arithmetic operator:-

These are used to perform arithmetic operands. It include addition(+), subtraction(-), multiplication(*), div(/), rem(%), floor div(//) and exponent(**)

(ii) Comparison Operators:-

These are used to compare the value of the two operands & returns boolean True or False according to.

The comparison operators are:

Ex:- ==, !=, <=, >=, >, <

(iii) Assignment Operators:-

There are used to assign the value of the right operation to the left operand.

Ex:- =, += , -= , %= , //= , **=

(iv) Bitwise operators:-

Perform bit operation on the values of two operands

Binary and (&), Binary or (|), Binary xor (^), Negation (~) left shift (<<), Right shift (>>)

v) ~~Logical~~ Membership operators:-

There are used to check the membership of value inside a python. If the value is present in Ds, then the resulting value is true otherwise false.

-in and not in are membership operators.

vi) logical Operator:-

There are used primarily in the expression evaluation and, or, not logical operators.

vii) Identity Operator:-

is - It is evaluated to be true if the reference present at both side point to the same object.

is not - If is evaluated to be true if the reference present at both sides do not point to the same object.

(11) Explain the features of python.

=) (i) Easy to learn and use

python is easy to learn & use. It is developer-friendly & high level programming language.

(ii) Expressive language:-

It is more understandable and readable.

(iii) Interpreted language:-

Execute code line by line at a time. This makes debugging easy and these suitable for beginner.

(iv) Cross-platform language:-

Can run equally on different platforms such as windows, linux etc.

(v) Free and open source:-

It is freely available at official web address source code is also available

(vi) Object oriented language

It supports object oriented lang and concept of classes and objects came into existence.

(vii) Extensible.

It implies that other languages such as C/C++ can be used to compile the code & then it can be used further in our python code.

(viii) Large standard library.

python has large and broad library and provide rich set of module and functions for rapid application development

ix) GUI Programming Support :-

Graphical user interface can be developed using python

x) Integrated :-

It can be easily integrated with lang like c, C++, java etc.

5) Justify why python is interactive interpreted language ?

→ Python is an interacted interpreted language because unlike c/c++ python is an interpreted object oriented programming language. By interpreted it is meant that each time a program is run the interpreter checks through the code for error and then interprets the installation into machine readable like c, c++ etc. There is no need to compile pythode code. this source code of python is converted into an immediate form called byte code.