Python-Assignment-3

1) What are the data types in phyton? Explian

Datatypes are the classification or categorization of data items. Data types represent a kind of value which determines what operations can be performed on that data.

Python has the following standard or built-in data types:

Numeric:

A numeric value is any representation of data which has a numeric value. It has three types of numbers.

i) Integer: Positive or negitive whole no.
ii) Float : Real no. with fractional
iii) Complex: $x+yj$

Boolean:

i) True
ii) False

Notice: T & F are capital letters.

Sequence Type:

i) String : one or more characterst
ii) List : one or more data items
iii) Tuple : not necessarily of the same type, put in parathesis.

Dictonary

Unordered collection of data in a key : value pair form.
A collection of such pairs is enclosed in curly brackets.

=type function : type ()

Ex: >> type (1234)
        class 'int'>
    >> type (55.50)
        float.

a) What is the history of python?

Python was conceived in the late 1980s by Guido Van Rossum at centrum Wiskunde & Informatica (CWI) in the Netherlands as a succesor to the ABC language. It is capable of exception handling & interfacing with the Amoeba Operating system. Its implementation began in December 1989.

It is mainly developed for emphasis on code readility and its syntax allows pgrmmers to express concepts in fewer lines of code.

*) Explian all operators in python:

Operators are special symbols in python that carry out arithmetic or logical computation. The value that the operator operates on is called for the operand.

operator	Meaning	Example
+	Add two operands or unary plus	$x+y+z$
-	Subtract right operand from the left or unary minus	$x-y-z$
*	Multiply two operands	$x*y$
/	Divide left operand by the right one (always results into float)	x/y
%	Modulus - remainder of the division of left operand by the right	x/y (remainder of x/y)

//   floor division — division that results into whole no. adjusted to the left in the no. line $\times$ lly

**   Exponent - left operand raised to the power of right $x**y$ (x to the power ofy)

A) Explian the feautres of python?

Python provides lots of features that are listed below.

i) **Easy to learn and use :**

    Python is easy to learn and use. It is developer-friendly & high level pgmming lang.

ii) **Expressive language:**

    Python lang is more expressive means that is more understanding & readble.

iii) **Interpreted language:**

    Python interpreter executes the code line by line at-time. This makes debugging easy & thus suitable for beginners.

iv) Cross-platform language:

Python can run equally on different platforms such as Windows, Linux, Unix and Macintosh etc. So we can say that python is a portable language.

v) Free & Open Source

It is freely available at offical web address.

vi) Object Oriented lang:

Python supports oop lang & concepts of classes & objects come into existence.

vii) Extensible:

It implies that other lang such as c/c++ can be used to compile the code and thus it can be used further in our python code.

viii) Large Standard Library:

Python has a large and broad library and provides rich set of module & functions for application deup.

ix) GUI:

This can be developed by python.

x) Integrated:

langs like c, c++, Java etc.

5) Justify why python is interactive, interpreted language?

Interpreted python:

Unlike c/c++ etc, python is an interpreted object-oriented prgmming lang. By interpreted it is meant that each time a prgm is run the interpreter checks through the code for error & then interprets the instructions into machine-readable bytecode

An interpreter is a translator in computer's lang which translates the given code line by line in readable bytecodes. Unlike c language, which is a compiled prgmming language.

Ex:

```
print "\n\n -- This line is correct --\n\n"
print Hello #this is wrong.
```

Interactive python:

Python is interactive. When a python statement is entered, and is followed by the Return key, if approciate, the result will be printed on the screen, immediately, in the next line. This is Particulary advantageous in the debugging process.

In interactive mode of operation, python is called & used in a similar way as the UNIX command line or the terminal.

Ex:

```
#include <iostream>
using namespace std;
int main()
{
    cout<<"__This is correct line__";
    cout<<"__This is also correct_";
    cout<<"this is Incorrect line";
    return 0;
}
```