

## PYTHON ASSIGNMENT-II

① what are data types in python? Explain.

1. Numbers:- Number data types store numeric values. Number objects are created when you assign a value to them.
2. Strings:- strings in python are identified as a contiguous set of characters represented in quotation marks. python allows either pair of single or double quotes.
3. Lists:- lists are the most versatile of python's compound data types. A list contains items separated by commas and enclosed within square brackets '['']
4. Tuple:- A tuple is another sequence data type that is similar to the list. A tuple consists of a number of values separated by commas.  
→ These are enclosed within parentheses.
5. Dictionary:- It is a kind of hash-table type. They work like associative arrays. It consists of key-value pairs. Key can be any python type, but are usually numbers or strings. Values can be arbitrary python objects.  
→ Dictionaries are enclosed within curly brackets.



2. Briefly explain history of python.

In late 1980's history was about to written. It was the time when working on python started. Soon after that, Guido van Rossum began doing its application based work in Dec. of 1989 by at Centrum Wiskunde & Informatica (CWI) in Netherlands.

It was started firstly as a hobby project because he was looking for an interesting project to keep him occupied during Christmas.

The programming language which python is said to have succeeded in ABC programming language, which had the interfacing with the Amoeba operating system and had the feature of exception handling. He had already helped to create ABC earlier in his career and he had seen some issues with ABC but liked most of the features. After that what he did was really very clever.

He taken syntax of ABC and some of its good features. It came with a lot of complaints too, those fixed those issues and created a good scripting language which had removed the flaws.

2. Explain all the operators in python.

1) operators are special symbols that represent computation, like addition and multiplication. The value the operator is applied to are called operand.

→ The operators  $+$ ,  $-$ ,  $*$ ,  $/$  and  $**$ .

$+$  perform addition.

$-$  perform subtraction.

$*$  perform multiplication.

$/$  perform division.

$**$  perform exponentiation.

Examples are.

$$+ = 20 + 32$$

$$- = \text{hour} - 1$$

$$* = \text{hour} * 60 + \text{minute}$$

$$/ = \text{minute} / 60$$

$$** = 5 ** 2$$

$$\text{eg) } (5+9)*(15-7)$$



#### 4. Explain the features of python

##### easy to code

→ python is high level programming language

→ python is very easy to learn language as compared to other language like c, C++,

Java script, etc

→ It is very easy to code in python language and anybody can learn it in few hours.

##### Free and Open Source

Python language is fully available at official website and you can download link below.

→ Since it is open-source, this means that source code is also available to the public. So you can download it or use it as well as share it.

##### Object Oriented language

One of key features of python is object oriented programming. python supports object oriented language and concepts of class, objects, encapsulation etc.

##### GUI programming support

Graphical User Interface can be made using a module such as wx python

python is the most popular option for creating graphical apps with python.

### High level language

python is a high-level language. we can write our some python code into c or c++ language and also we can continue compile that code in c/c++.

extensible language; we can write our some ~~python code~~ into c or c++ and also compile in those languages.

5. Justify why python is interactive interpreted language.

unlike c/c++ etc, python is an interpreted object oriented programming language and unlike c which is compiled programming language. The compiler translates the whole code in one-go rather than line-by-line. This is the reason why in c all the errors are listed during compilation only.

An interpreter is a translator in python computer's language which translates the given code line-by-line in machine readable bytecode.

python is interactive when a python statement is entered and is followed by the return key if appropriate the result will be printed on the screen, immediately in the next line. Interactive python is very much helpful for the debugging purpose. It simply return the >>> prompt or the