Assignment - 2

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(1) What are the data types in phyton ? Explain the data types defined in the phython are ?

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

Numbers: Number store nume numeric value
Phython supports four types of numeric data
(i) int (Signed integers like 10, 2, 29 etc)
(ii) long (Long integers used for a higher range of values like 908090800L etc)
(iii) float (It is used to store floating point numbers like 1.9, 9.0902 etc)
(iv) Complex (Complex numbers like 2+4j)

String: The string can be defined as the sequence of characters represented in the quotation marks. In phyton we use single, double or triple quotes to define a string.
eg: "hello world"

List: List are similar to arrays to arrays in C. However, the list contain data of different types. The items stored in the list are separated with a comma and enclosed with in the square brackets [].
We can use slice [] operators to access the data of the list
eg: l = [1, "hi", "python", 2]
print (l[3:]); o/p [2]

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

Eg: t = ("hi", "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 whereas value is an arbitrary python object.

Eg: 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 is a widely used, general-purpose, high-level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software foundation It was mainly developed by python software foundation. It was mainly developed for emphasis on code readability and its syntax allows programmers to express concept in fewer lines of code.

In the late 1980's history was about to written. It was that time when working on python started. Soon after that, Guido van Rossum began

doing its application based work on dec of 1989 by at the centrumwiskunde and Informatica which is situated in Netherland. It was started first as a hobby project because he was looking for an interesting project to keep him occupied during christmas. The 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 has been some issues with ABC but liked most of the features. After that what he did as really very clever. He had taken the syntax of ABC, and some of its good features. It came with a lot of complaints too, so he fixed those issues completely and had created a good scripting language which had removed for all the flaws. The inspiration for the name came from BBC's TV show - monty: python flying circus as he was a big fan of the TV show and he wanted a short unique and slightly mysterious name for its invention and hence he name it python.

The language was finally released in 1991. When it was released, it used a lot fewer codec to express the concepts when we compare it with java, C and c++. Its design philosophy was quite good too. Its main objective is to provide code readability and advanced developer productivity when it was released it had more than enough capability to provide classes with the inheritance, several core data types exception handling and functions.

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(3) Explain the operators in Python?

(i) Arithmetic operators:
These are used to perform arithmetic operation between two operands. It includes addition(+), subtraction(-), multiplication(*), divide (/), remainder(%), floor division(//) and exponent (**)

(ii) Comparison Operator:
These are used to compare the value of the two operands and returns boolean true or false accordingly.
The comparison operators are:
==, !=, <=, >=, >, <

(iii) Assignment Operators:
These are used to assign the value of the right expression to the left operand.
Eg. of assignment operators:
=, +=, -=, *=, %=, **=, //=

(iv) Bitwise Operators:
The Bitwise operators perform bit by bit operation on the values of two operands.
Binary and (&), Binary xor (^) Left shift (<<)
Binary or (|) Negation (~) Right shift (>>)

(v) Logical operators:
These are used primarily in the expression evaluation to make a decision. Python supports and, or, not logical operators.

(vi) Membership operators:
These are used to check the membership of value inside a python. If the value is present in data structures then the resulting value is true otherwise it returns false.
* in and not in are membership operators

(vii) Identity Operators:
is - It is evaluated to be true if the reference present at both side point to the same object.

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

(4) Explain the features of python.

(1) easy to learn and use.
python is easy to learn and use. It is developer-friendly and high level programming language.

(2) Expressive Language.
It means that is more understandable and readable.

(3) Interpreted language.
Interpreter executes the code line by line at a time. This makes debugging easy and thus situation for beginners.

(4) Cross-platform language.
It can run equally on different platforms such as windows, linux, unix etc. So we can say python is a portable language.

(v) Free and open source

It is freely available at official web address source-code is also available it is open source.

(vi) Object-oriented language.

It supports object oriented language and concepts 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 and thus it can be used further in our python code.

(viii) Large standard library

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

(ix) GUI programming support.

Graphical User Interfaces can be developed using python.

(x) Integrated.

It can be easily integrated with languages like c, c++, Java etc.

(5) Justify why python is interactive interpreter language.?

python is an interacted interpreted language because unlike c/c++ etc, python is an interpreted Object oriented programming language. By interpreted

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It is meant that each time a program is run the interpreter checks through the code for errors and then interprets the instructions into machine readable byte code.

We can easily integrated python with other languages like C, C++ etc. There is no need to compile python code this makes it easier to debug our code. The source code of python is converted into an immediate form called byte code.