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1) What are the data types in Python? Explain the data types defined in the Python are?

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

Numbers: Numbers store numeric values

Python support 4 types of numeric data

i. int (signed integers like 10, 21, 29 etc)
ii. long (long integers used for a higher range of values like 12345789 etc)
iii. float (It is used to store floating point numbers like 1.9, 9.9002 etc)
iv. Complex (Complex numbers like 2+i4)

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

Eg:- 'hello world'

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 slice[:] operators to access the data of the list.

Eg:- l = [1, 'hi', 2]
print (l[2:])
o/p:- 2

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

Eg:- t = ('hi', 'Python', 20)

print (t[1:])

o/p:- ('Python', 20)

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 arbitary of 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 widely used general purpose high level programming language. It was intially designed by Guido Van Rossum in 1991 and developed by python Software foundation. It was mainly developed for emphasis on code readability and its syntax 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 applications based work in dec of 1989 by at centrumwiskunde and Informatica. which 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 features of exception handling. He had already helped to create ABC earlier in his carrier and he had seen 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. The inspiring of the came from BBC's TV show 'monty python'

Flying circus' as he was a big fan of the TV show and also [3218103020040] he wanted a short, short, unique and slightly mysterious name for his invention and hence he name it has python. He was the 'Benevolent dictator for life" (BDFL). until he stepped down from the poi position as the leader on 12th July 2018. for quite some time he used to work for Google, but currently, he is working at Dropbox.

The language was, finally released in 1991. when it was released, it used a lot fewer codes to express the concepts when we compare it with java, c and C++. Its design philosophy was good too. It's 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 inheritence, several core data types exception handling and functions.

3. Explain the operators in phpython.

i) Arithematic Operator

These are used to perform arithematic operations between two operands It includes addition (+), subtraction (-), multiplication (*), division (/) remainder (%), floordivision (//) and exponent (**)

ii) Comparison operator

These are used to compare the value of two operands and return boolean True or False accordingly

The comparison operators are:

==, !=, <=, >=, >, <

iii) Assignment operator.

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 inside a p is present in data structure, 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.

isnot - It is evaluted to be true if the reference present at both sides don't point to the same object.

4) Explain features of python.

i) Easy to Learn and Use

Python is easy to learn and use. It is developer friendly and high level programming language.

ii) Expressive language

It means that is more understandable and readable.

iii) Interpreted language

Interpreter executes the code line by line at a time. This makes debugging easy and thus suitable for begineers.

iv) Cross - platform language

It can run easily equally on different platforms such as windows, Linux, unix etc. so we can say that 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 come into existence.

vii) Extensible

It implies that other languages such as C/C++ 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

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 interpreted language.

python is an interacted interpreted language because unlike C/C++etc, 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 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.