Assignment

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① what are the data types in Python? Explain the data types defined in the Python are?

1. Numbers
2. strings
3. List
4. TUPle
5. Dictionary

1. Numbers:- Number store numeric value.
Python supports 4 types of numeric data

1. int (signed integers like 10, 2, 29 etc)
2. long (long integer used for a higher range of values like 90803954, 2345696 etc)
3. float (It is used to store floating point numbers like 1.90 -, 1.902 etc)
4. complex:- (complex numbers like 2+14j)

2. String :- The string can be defined as the sequence of characters represented in the quotation marks.
In Python we use single, double or triple quotes to defines a string
Eg:- "hello world"

3. List :- List are similar to arrays in C. However, the list contain data of different types. the items stored in the list are separated with a comma & enclosed with in the square brackets []
we can use slice[i] operators to access the data of the list

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Eg:- l = [1, "hi", "Python", 2]
print [l[3:]];
O/P :- [2]

4. TUPLE :- A tuple is similar to the list in many ways Like ~~th~~ 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 Parentheses ()
eg:- t = ("hi", "Python", 2)
print (t[1:]);
O/P :- ('Python', 2)

5. Dictionary :- Dictionary is an ordered set of a key value pair of item. It is like an associative array. key can hold any primitive data type whereas value is an arbitary Python objects.
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 is initially designed by Guido, van Rossum in 1991 and developed by Python Software foundation it was mainly developed for emphasis on ~~it~~ was mainly developed by Python & code readability and its syntax allows programmers to express

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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 in dec of 1989 by at centrum wiskunde and informatica (CWI) which is situated in Nether land. It was started first as hobby project because he was looking for an intresting Project to keep him occupied during christmas. The programming language which Python is said to have succeded is ABC programming language which had the interfacing with the Amoeba operating system and had the feature amoeba exception handling. he had already helped to create ABC earlier in his career and he had seen some issues with ABC but liked the most of the features. After that what he did as really very clever. hed 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 all the flaws. the inspiration for the name came from BBC's TV show 'monty Python's flying circus' as he was a big fan of the TV show and also he wanted a short unique and slightly mysterious name for his invention and hence he name it Python he was the 'Benevolent dictator for life' (BDFL) until he steped down from the position as the leader on 12th July 2018 for quite some time he used to work for google but currently he is working at Drop box.

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The language was finaly released in 1991 when it was released it used a lot fewer codes to express the concepts when we compare it with java, C & 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 inheritance several core data types exception handling and functions.

(3) Explain the operators in python?

i, Arithemetic operator

these are used to perform arithemetic operations between two operands. It includes addition, subtraction, multiplication, divided, remainder (%), floor division (//) & exponent (**)

ii, comparison operator

these are used to compare the value of the two operands and return boolean TRUE or flase 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 operator

=, +=, -=, *=, %=, **=, //=

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iv, Bitwise operators

the bitwise operators perform bit by bit operation on the values of two operands binary and (&), binary (xor) (^), leftshift (<<), binary or (|) negation (~), Rightshift (>>)

v, Logical operator

these are used primarily in the expression evaluation to make a decision Python support and, or, not logical operators

vi, Membership operator

> these are used to check the membership of value inside a Python if the value is present in data structure then the resulting value is true otherwise it returns flase.
> In and not in are membership operator

vii, identity operator

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 & use it is developer

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Friendly and high level Programming language

i, Expressive language

It means that is more understandable and readble

ii, Interpreted language

Interpreter executes the code line by line at a time this makes debugging easy & thus suitable for beginners.

iv, 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 come 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

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

X, 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 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 & 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 immediated form called byte code.

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