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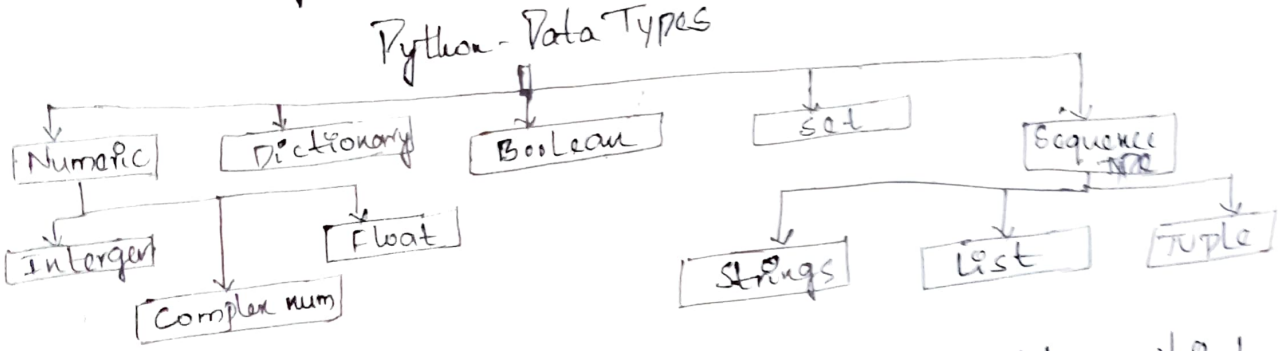
(1) What are the data types in python? Explain

Data types are the classification of data items. Data types tells what operations can be performed on a particular data. In python programming everything is object whereas data types are classes and variables are instance of these classes.

Following are some of data type of python:

* Numeric
* Sequence type
* Boolean
* Set
* Dictionary



(i) Numeric

In python, numeric data type represent the data which has numeric value. Numeric values can be integer, floating number (or) even complex number. They are int, float and complex classes in python

Integers - without fraction or decimal

Float - with fraction or decimal

Complex Numbers - (Real part) + (Imaginary part)

(ii) Sequence Type

Sequence is the ordered collection of similar or different data types. It allows to store multiple values in a organized and efficient fashion

Types of Sequence

(i) String - String are arrays of bytes representing Unicode characters in

(ii) List - List are just like arrays, declared in other forms. In need not be homogeneous which makes more powerful than list

(iii) Tuple - It is an ordered collection of python objects much like a list values stored in tuple can be any type

(iii) Boolean
Data type with one of the two built in values. True or False. "bool"

(iv) Set
Set is an unordered collection of data type that is iterable, mutable and has no duplicate element

(v) Dictionary
It is an unordered collection of data values, used to store data values like a map, which unlike other data types that hold only single values as a element, Dictionary holds key:value pair.

2. Briefly explain history of python
Python is a widely used, general-purpose high level programming language. It was initially designed by Guidovan 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 1980s 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 1989 by centur. wiskunde and informatica ('cwi) which is situated in Netherland. It was started first as a hobby project because he was looking for an intresting project to keep him occupied during christmas. The programming lang which python is said to have succeeded is ABC programming language, which had the interfacing with the Amoeba o.s 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 as really very clever. He had seen so 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 create a good scripting language which had removed all the flaws. The inspiration for the came from BBC's TV show - "monty" Python's flying circus' as he wanted a short, unique and slightly mysterious name for his invention and hence he name it python. He was the BDFL. until he stepped down from the position as the leader on 12th July 2018. for quite same 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++ it design philosophy was quite good too. Its main objective is to provide code readability and advanced developer productivity when it was released. it has more than enough capability to provide classes, with inheritance, several core dat types exception handling and functions.

3. Explain the operators in python?

(i) Arithmetic operators:

These are used to perform arithmetic operation b/w two operandso It includes addition(+), subtraction (-), multiplication(*), divide(/), remainder (%), floor division (//) and exponent (**)

(ii) Comparsion operation

These are used to compare the value of the operads and returns boolen T or F.

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

(iii) Assignement operators

These are used to assign the value of the right expression to the left operand

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

(iv) Bitwise operators

They perfor bit by bit operations

Binary and (&) Binary (xor) (^) leftshift (<<)

Binary or (|) negation (~) Right shift (>>)

(v) logical operators:

These are used to 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 structure, then the resulting value is true or else false.

(vii) Identify operators:

is - It is evaluated to be true if the reference present at both side point to the same object

is not - It evaluated to the same ~~objects~~ true if the ref present the 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

It means that it is more understaindable and readable

(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

(5) Free and open source

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

(6) Object-oriented language

It supports object oriented language and concepts of classes and objects come into existence.

(7) 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.

(8) Large standard library

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

(9) GUI programming support

Graphical user interfaces can be developed using python

(10) 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++, Python is an intergreted Object oriented prging language. By interpreted it is meant that each time a program is rum the interpreter, checks through the code for errors and then interprets the instructions into machine readable byte code. we can easily integrated python with othe language like C, C++. There is no need to compile python code this make it easier to debug our code. The source code of Python is converted in to an immediate form called byte code.