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Assignment 2

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: - Number store numeric value.
Python supports 4 types of numeric data.
1. int (signed integers like 10,2,29 etc)
2. long (long integers used for a higher range of values like 9080908001 etc).
3. float (st is used to store floating point numbers like 1·9,9·9002 etc)
4. Complex (complex numbers like 2H4 i)

String: - The string can be defined as the sequence of characters represented in the quotation marks. In python we use signal, double or triple quotes to define a string.
   Ex:- "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 separated with a comma and enclosed with in the square brackets [].
we can use slice [:] operator to access the data of the list.
Eg:- l = [l,"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 parentheses ( )

Eg :- t = ("hii", "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 orbitary 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?

Ans:- Python is a widely used, general-purpose, high-level programming language. It was initially designed by Guidavan Rossum in 1991 and developed by python software foundation. It was mainly developed for emphasis on code read ability and its syntax allow programmes 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 in dec of 1989 by

at centrumwiskunde and informatica (CWI) which is situated in Netherland. It was that started first 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 is 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 as really very clever. He had taken the syntax of ABC, and some of its good features. 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 shows and also he wanted a short, unique and slightly mysterious name for his invention and hence he name it python!

      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, and c++, Its design philosphy was quite good too. Its main objective is to provide code read ability and advanced developer productivity when it was released it had move than enough capability to provide classes with inheritance, several core data types exception handling and functions.

3. Explain the operations in python?

i. Arithmetic operators:-

These are used to perform arithmetic operations between the operands. It includes addition (+), subtraction (-), multiplication (x), divide (÷), remainder (%), floor division (\\) and exponent (**).

ii. comparsion 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.

ex: of Assignment operations:

=, +=, -=, *=, %=, **=, \\=

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 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 otherwise

it returns false.

*in and not in are membership operators.

vii. Identity operators:-

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

is not - It is evaluted to be true if the refrence
present at both side do not point due 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 suitable 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.

5) Free and open source

It is freely available at official web address. Source
code is also available. 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:-

Python has large and bread library and provides rich set of module and functions for rapid application development.

9) Giu 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++ 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 interpreter 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 coade.