ASSIGNMENT-2

CSE, B2
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1). What are the data types in python? explain

Ans). The data types defined in the python are.

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

1. Numbers:

Number store numberic value

python supports 4 types of numeric data

(i) int (signed integers like -10, 2, 39 etc.)

(ii). long (long integers, used for a higher range of values like 9392308 etc)

(iii). float (It is used to store floating point numbers liked 9.3, 8.305 etc)

(iv). complex (complex numbers like 3+19j)

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 define 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 seperated with a comma and enclosed within the square brackets[].

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

eg:- l = [1, "hi", "python", 2]
print(l[3:]);

output 2

4. Tuple :-

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 seperated with a comma(,) and enclosed in the paranthesis()

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 items. It is like an associative array. Key can hold any primitive data type whereas value is an arbitary 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 Guidovan Rossum in 1991 and 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 in dec of 1989 by at centrum wisk unde and Informatica (CWI) which is situated in Netherland. It was started first as a hobby project because he was looking for an interesting project because he was ~~looking~~ 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 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 circous 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!

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 quite good too. Its main objective is too 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?

A). (i) Arithmetic operators:-

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

(ii) comparison operators:-

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:-

There 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 exor (^) 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 structure, then the resulting value is true otherwise it return 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.

Ans. 1). Easy to learn and use

python is easy to learn and use. It is developed-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 broad library and provides rich set of module and functions for rapid.

9). GUI programming support

Graphical user interface 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 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.