ASSIGNMENT-2

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1. What are the data types in python? Explain the data types defined in python.

⇒
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, etc)
2. long (long integers used for a higher range of values like 90f090800 etc)
3. float (It is used to store floating point numbers like 1.9, 9.9002 etc)
4. complex (complex numbers like 2+14j)

String: The string can be defined as the seq of characters represented in the quotation marks. In python we use single, 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[i] operators to access the data of the list.

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Ex: l = [1, "hi", "python", 2]
    print(l[3:]);
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O/P [2]

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

Ex: t = ("hi", "python", 2)
print(t[1:3]);

o/p: ('python', 2)

Dictionary: Dictionary is an ordered set of a key value pair of items. It is like an assoiative array. key can hold any primitive data type whereas value is an arbitary python object.

Ex: 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 was initially designed by Guidavan 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, Guidavan Rossum began doing its application based work in dec of 1989. by at centrum wiskunde & informatica (CWI) which is situated in Netherland. It was started first as a hobby project because he was looking for an intrating project to keep him occupied during christmas. The programming language which python is said to have succeeded is ABC programing lang, which had the interfacing with the Amoeba operating system & 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; & some of its good features. It came with a lot of complaints too, so he fixed those issues completely & had created a good scripting lang which had removed all the flaws. The inspiration for the name came from BBC's TV show "monty" python flying circus' as he was a big fan of the TV show & also he wanted a short, unique & slightly mysterious name for his invention & hence he name it python. He was the "Benevolent dictator for life" (BDFL). Until he stepped 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 Dropbox.

The lang 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 to provide code readability and advanced developer productivity when it was released it had more than enough capability to provide classes with inheritance, several care data types exception handling & functions

③ Explain the operation in python?

⇒ i) Arithmetic operators:

These are used to perform arithmetic operations b/w two operands. It includes addition(+), sub(-), mul(*), div(/), remainder(%), floor div(//) and exponent (**)

ii) comparision operator:

These are used to compare the value of the two operands & 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: =, +=, -=, *=, %=, **=, //=

iv, Bitwise operators:-

Performs bit by bit operation on the values of two operands.
Binary and (&) Binary or (|) Binary (xor) (^) Negation (~) left shift (<<)
Right shift (>>)

v, Logical operators:-

There are used primarily in the expression evaluation and, or, not logical operators.

vi, Membership operators:-

There are used to check the membership of value inside a python. If the value is present in DS, then the resulting value is true otherwise 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.

⇒ i, Easy to learn and use

Python is easy to learn & use. It is developer friendly & high level prgming lang.

ii, Expressive language.

It is more understandable and readable.

iii, Interpreted language.

Executes code line by line at a time. This makes debugging easy and thus suitable for beginners.

iv, Cross-platform language

Can run equally on different platforms such as windows, linux, unix.

v) Free and open source

It is freely available at official web address source code is also available.

vi) Object oriented language

It supports object oriented lang and concepts of classes and objects came into existence.

vii) Extensible

It implies that other languages such as c/c++ can be used to compile the code & thus it can be used further in our python code

viii) Large standard library

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

ix) GUI programming support

Graphical user interfaces can be developed using python

x) Integrated

It can be easily integrated with lang 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 programing 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 installation 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 source code of python is converted into an immediate form called byte code.