Assignment-2

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① What are datatypes in python? Explain?

Ans: Datatypes are the classification or categorization of data items Data types represent a kind of value which determines what operations can be performed on that data. Numeric, Non-Numeric and Boolean (True/false) data are most used data types.

Numeric:

A Numeric value is any representation of data which has a numeric value. Python identifiers three identifiers three types of Numbers.

(i) Integer:

positive or Negative whloe numbers (without a fractinal part)

(ii) Float:

Any real Number with a floating point representation in which a fractional component is denoted by a decimal symbol or Sci Notation

(iii) Complex Number:

A Number with a real and imaginary component represent as x+yj. x and y are fools and j is -1 (square root of -1 called an imaginary Number)

Boolean:

Data with one of two buid in values 'True' or 'False' Notice that 'T' and 'F' are capital. 'True' and 'False' are not valid booleans which throws an error

Sequence type:

A Sequence is an ordered collection of one similar or different data types.

(i) String: A string value is a collection of one of one or more characters put in single (or) Double (or) triple Quotes

(ii) List: A List object is an ordered collection of one or more characters put sequence brackets

(iii) Tuple: A Tuple object is an ordered collection of one or more data items not nessarily of the same type, put in paranthesis

type() function:

type() is to ascertain the data type of a certain value. For Example, enter type(1234) in Python shell and it will return <class 'int'>, which means 1234 is an integer value.

(2) Explain briefly about History of python?

Ans: Python is a general-purpose high level programming language. It is an open source language, released under a GPL-compatible licence. Python Software Foundation (PSF), a non-profit organization, holds the copyright of python.

Guido Van Rossum conceived python in the late 1980s. It was released in 1991 at Centrum wiskunde and Informatica (CWI) in the Netherlands as a successor to the ABC language. He named this language after a popular comedy show called 'Monty Python's Flying Circus' (and not after Python-The Snake)

In the last few years, its' popularity has increased immensly. According to Stackoverflow.com's recent survey, Python is in the top ten Most popular Technologies in 2018.

(3) Explain all the operators in python.

Ans: Comparision and logical operators in python

The comparision operators returns a bodean either True or False. Assuming that x=10 and y=20, the result of the operators is also given in the following table.

operator	Description	Example
>	True if the left operand is higher than the right one.	>>> x>y False
<	True if the left operand is lower than the right one	>>> x<y True
==	True if the operands are equal	>>> x==y False
!=	True if the operands are not equal	>>> x!=y True
>=	True if the left operand is higher than or equal to the right one.	>>> x>=y False
<=	True if the left operand is lower than or equal to the right one.	>>> x<=y True

Logical operators in python:

The following keywords in Python combine two Boolean expression. They are called logical operators. Two operands should have Boolean value True or False. Assuming that x=True and y=False.

operator	Description	Example
and	True if both are true	>>> x and y False
or	True if at least one is true.	>>> x or y True
not	Returns True if an expression evaluates to false and vice-versa	>>> not x False

Comparision and logical operators are useful in controlling flow of program.

(4) Explain the features of python.

Ans: There are many features in python, Some of which are discussed

1. Easy to Code:

   Python is high level programming Language. Python is very easy to learn language to other like C, C#, java Script, java etc. etc.

2. Free and open Source:

   Since, it is a open-Source, this means that Source Code is also available to the public. So you can download it as, use it as well as Share it.

3. Object-Oriented language:

   One of the key features of python is object-Oriented programming. Python supports object oriented language and concepts of classes etc.,

4. GUI Programming Support:

   Graphical user Interfaces can be mode using a module such as PyQt5, PyQt4, wxPython or Tk in Python.

5. High level language:

   Python is a high level language. when we write programs in Python, we do not need to remember the System architecture, nor mange memor

6. Extensible Feature:

   Python is a Extensible language, we can write our Some python Code into C or C++ language and also we can Compile that Code in C/C++.

7. Integrated language:

   Python is also an Integrated language because we can easily integrated python with other language like C, C++ etc.

8. Portable Language:

   If we have python Code for windows and if we want to run this Code on other platform Such as Linux, Unix and Mac then we do not need to Change it, we can run this Code on any platform.

⑤ Justify why Python is interactive interpreted language.

Ans: Python is an interpreted language, because python code is executed line by line, at a time, like other language 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 byteCode.