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12-02-20

Python - Assignment - 2

① What are the data types in python? Explain?

Ⓐ Datatypes are the classification or categorization of data items. Datatypes represent a kind of value which determines what operations can be performed on that data. Numeric, non-numeric and Boolean (true/false) data are the most used data types

Numeric:

A numeric value is any representation of data which has a numeric value. python identifies three types of numbers.

1) Integer: positive or negative whole (without a fraction part)

2) Float: Any real number with a floating point representation in which a fractional component is denoted by a decimal symbol or sci Notation

3) Complex Number: A number with a real & imaginary component represented as x+yj; x and y are floats & j is -1 (square root of -1 called an imaginary number)

Boolean:

Data with one of two built in values 'True' or 'False'. notice that 'T' & 'F' are capital 'true' & 'false' are not valid boolean which throws an error

Sequence Sets

A sequence is an ordered collection of one similar or different datatypes.

1) String: A string value is a collection of one similar or different datatypes more characters put in single double or triple quotes

List: A list object is an ordered collection of one or more data items not necessarily of the same type, put in square brackets.

iii) Tuple: A tuple object is an ordered collection of one or more data items, not necessarily of the same type, put in Parenthesis.

type() function:

type() in to ascertion the datatype of an certain value for example, enter type (1234) in python shell & it will return <class int> which means 1234 is an integer value.

(2) Explain briefly about History of Python!

(A) 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 copy right of Python. Guido Van Rossum Conceived python in the late 1980s It was released in 1991 at centrum wiskunde and Informatica. 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 immensely 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.

) Comparision and logical operators in python

The Comparision operators returns a boolean either True or false Assuming that x=10 and y=20, the result of the operators in also given in the following table

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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 & y = False.

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

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

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6. Explain the features of python.

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.

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 well as share it.

3. object-oriented language:
one of the key features of python is oop. python supports object oriented language & concept of classes etc

4. GUI programming Support:
Graphical user Interfaces can be made using a module such as pyqt5, pyQt4, wx python 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 memory.

6. ~~Extensible~~ Integrated feature language:
python is a ~~Extensible~~ Integrated language because we can easily integrated python with other language like C, C++ etc.

7. Extensible feature:
python is a extensible language, we can write our same python code into C or C++ language and also we can compile that code in C/C++

8. Portable language:
If we have python code for windows and

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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 run this code on any platform.

⑤ justify why python is interactive interpreted language.

A) 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 a code. The Source code of python is converted into an immediate form called byte code

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