20-06-2020

ASSIGNMENT- 2

1. What the data types in python ? Explain

Numbers: Number data types store numeric values. Number objects are created when you assign a value to them.

Strings: strings in python are identified as a contiguous set of characters represented in the quotation marks. python allows either pair of single or double quotes.

Lists: Lists are the most versatile of python's compound data types. A list contain items seperated by commas and enclosed within square brackets.

Tuples: A Tuple is another sequence data type that is similar to the list. A tuple consists of a number of values seperated by commas unlike lists, however, tuples are enclosed within parenthesis

Dictionary: python's dictionaries are kind of hash-table type. They work like associative arrays or hashes found in perl and consist of key value pairs. A dictionary key can be almost any python type, but are usually numbers or strings. values, on the other hand, can be any arbitrary python object. Dictionaries are enclosed within curly braces.

2. Briefly explain history of python.

In the 1980's history was about to be written. it was that time when working on python started. soon after that, Guido van Rossum began doing its application based work in December of 1989 by at centrum wiskunde & Informatica (CWI) which is situated in Netherland. It was started firstly as a hobby project because he was looking for an interesting project to keep him ocupied during christmas.

The programming language which python is said to have succeeded in 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 it's 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 circus', 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 named 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 Drop box. 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++ & C. it 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 core data types exception handling and functions.

3. Explain all the operators in python

Arithmetic operators:

Operator	Meaning	Example
+	Add two operands or unary plus	x+y+2
-	subtract right operand from the left or unary minus	x-y-2
*	Multiply two operands	x*y
/	divide left operand by the right one	x/y
%	remainder of the division of left operand by the right	x%y

//	Floor division - division that results into whole number adjusted to the left in the number	x//y
**	Exponent - left operand raised to the power of right	x**y

comparison operators

operator	Meaning	Example
>	Greater than - True if left operand is greater than right	x>y
<	less than - True if left operand is less than the right	x<y
==	Equal to True if both operands are equal	x==y
!=	Not equal to - True if operands are not equal	x!=y
>=	Greater than or equal to - True if left operand is greater than equal to the right	x>=y
<=	Less than or equal to - True if left operand is less than or equal to the right	x<=y

logical operators

operator	Meaning	Example
and	True if both the operands are true	x and y
or	True if either of the operands is true	x or y
not	True if operand is false	not x

Bitwise operators

operator	Meaning	Example
&	Bitwise AND	x&y = 0
|	Bitwise OR	x|y [illegible]
~	Bitwise NOT	~x
^	Bitwise XOR	x^y [illegible]
>>	Bitwise right shift	x>>2 = 2
<<	Bitwise left shift	x<<2 = 40

Assignment operators

Operator	Example	Equivalent to
=	x = 5	x = 5
+=	x+=5	x = x+5
-=	x-=5	x = x-5
*=	x*=5	x = x*5
/=	x/=5	x = x/5
%=	x%=5	x = x%5
//=	x//=5	x = x//5
**=	x**=5	x = x**5
&=	x&=5	x = x&5
|=	x|=5	x = x|5
^=	x^=5	x = x^5
>>=	x>>=5	x = x>>5
<<=	x<<=5	x = x<<5

4. Explain the features of python.

Easy to learn: python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly

Easy to read: python code is more clearly defined and visible to the eyes.

Easy to maintain: python's source code is fairly easy-to-maintain.

A broad standard library: python's bulk of the library is very portable and cross-platform compatible on UNIX, windows, and Macintosh.

Interactive Mode: python has support for an interactive mode which allows interactive testing and debugging of snippets of code.

portable: python can run on a wide variety of hardware platforms and has the same interface on all platforms.

Extendable: you can add low-level modules to the python interpreter. These modules enables programmers to add to or customize their tools to be more efficient.

Databases: python provides interfaces to all major commercial databases

scalable: python provides a better structure and support for large programs than shell scripting.

Interpreted: python is processed at runtime by the interpreter. you do not need to your program before executing it. This is similar to PERL and PHP.

Object oriented:
Python supports object-oriented stybe or technique of programming that encapsulates code within objects.

5. Jurtify why python is interactive interpreted language.

You can actually sit at a python prompt and interact with the interpreter directly to write your programs.

Python program run directly from the source code. each time python programs are executed code is required. python converts source code written by the programmer into intermediate language which is agan translated into the native language.