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C Section.

1. Explain the datatypes in python? Explain.

There are 5 data types:

1. Numbers
2. String
3. List
4. Tuple
5. dictionary.

1. Numbers: Number store numeric values. python creates number objects when a number is assigned to a variable.

python supports four types of numeric data:

1. int
2. long
3. float
4. Complex

2. String: It is defined as a sequence of characters represented in the quotation marks. In python, we can use single, double or triple quotes to define a string.

3. List: It is similar to arrays in C. However, the list can contain data of different types. The items stored in the list are separated with a comma(,) and enclosed within square brackets [].

4. Tuple: It is similar to the list in many ways. Like lists, tuples also contain the collection of the items of different data types. It is separated with a comma, and enclosed with parantheses().
It is a read only data structure as we can't modify the size and values of the items of a tuple.

5. Dictionary: It is an ordered set of key-value pair of items. It is like an associative array or a hash table where each key stores a specific value.

2. Briefly explain history of python.

The programming language python was conceived in the late 1980's and its implementation was started in December 1989 by Guido Van Rossum at CWI in the Netherland as a successor to ABC capable of exception handling and interfacing with the Amoeba Operating system. python was named by for the BBC TV show Monty Python's Flying Circus.

python 2.0 was released on october 16, 2000 with major new features, including a cycle-detecting garbage collector for memory management and support for unicode.

python 3.0, a major backwards incompatible release, was released on December 3, 2008 after a long period of testing. Many of its major features have also been backported to the backwards-compatible, while by now unsupported, python 2.6 and 2.7.

3. Explain all the operators in python ?

1. Arithmetic operators : It perform various arithmetic calculations like addition, subtraction, multiplication, division, modulus, exponent, etc. There are various methods for arithmetic calculation in python like you can use the eval function, declare variable & calculate or call functions.

2. Comparison Operators : These operators compare the values on either side of the operators and determine the relation between them. It is also referred as relational operators. Various comparison operators are (==, !=, <>, >, <=, etc).

3. Assignment Operator: It is used for assigning the value of the right to the left operand. Various assignment operators are used by python are (+=, -=, *=, /=)

4. Logical Operator: In python are used for conditional statements are true or false. Logical operators in python are AND, OR and NOT. For logical operators following conditions are applied.

- AND Operator - It returns TRUE if both the operands are true.
- OR Operator - It returns TRUE if either of the operand is true.
- NOT Operator - It returns TRUE is operand is false.

5. Membership Operator - These operators test for membership in a sequence such as lists, strings or tuples. There are two membership operators in python (in, not in). It gives the result based on the variable present in specified sequence or string.

6. Identity Operator: To compare the memory location of two objects, Identity operators are used. The two identity operators are (is, is not)

• Operator is - It returns true if two variables point the same object and false otherwise.

• Operator is not - It returns false if two variables point the same objects and true otherwise.

4. Explain the features of python.

1. Easy to learn and Use:

Python is easy to learn and use. It is developer-friendly and highlevel programming language.

2. Expressive language:

Python language is more expressive means that is more understandable and readable.

3. Interrupted language:

It interpreter executes the code line by line at a time. This makes debugging easy and thus suitable for beginners.

4. Cross-platform language:

Python can run equally on different platforms such as Windows, Linux, Unix and Macintosh etc. So, we can say that python is a portable language.

5. Free and Open Source:

python language is freely available at official web address. The source-code is also available. Therefore it is open source.

6. Object Oriented Language:

python 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:

It provides rich set of module and functions for rapid application development.

9. GUI Programming Support:

Graphical User Interface can be developed by using python.

10. Integrated:

It can be easily integrated with languages like C, c++, JAVA etc.

5. Justify why python is interactive interpreted language.

Unlike c/c++ etc, python is an interpreted object-oriented programming language ... Unlike c language which is a compiled programming language. The compiler translates the whole code in one-go rather than line-by-line. This is the reason why in c language all the errors are listed during compilation only.

An interpreter is a translator in python computer's language which translates the given code line-by-line in machine readable bytecodes.

python is interactive. When a python statements is entered, and is followed by the Return key if appropriate the result will be printed on the screen, immediately in the next line. Interactive python is very much phelpful for the debugging purpose. It simply return the >>>prompt or the corresponding output of the statement, if appropriate and returns error for incorrect statements.