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6. section

Python Asg-2

that  
Q) Explain the data types in Python ? Explain.

(1) Explain the data types in Python ?

(2) Number

(3) String

(4) List

(5) Tuple

(6) Dictionary

(7) Numbers:-

Number store numeric values. Python creates number objects when a number is assigned to 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 commas, and enclosed with parentheses( ).

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 & hash table where each key stores a specific value.

### (6) briefly explain the 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 CERN in the Netherlands as a successor to ABC capable of exception handling and interface

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, utf8 by now unsupported, Python 2.6 and 2.7. --

B) Justify why Python is interactive interpreted language.

Unlike C/C++ etc, Python is an interpreted object oriented programming language --- unlike a language which is compiled programming language. The compiler translates the whole code 'in' one go rather than line-by-line. This is the reason why in a 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 it apposite the result will be printed on the screen, immediately in the next line. Interactive Python is very much helpful for

the debugging purpose. It simple reading the  
→→→ prompt or the corresponding oil & the  
statement, of appropriate and relevant error  
for innocent statements.

(3) Explain all the operators in Python?

## Python operators:-

- \* Arithmetic operators
- \* Relational operators
- \* Logical operators
- \* Bitwise operators
- \* Assignment operators
- \* Special operators

### Arithmetic operators :-

Arithmetic operators are used to perform mathmatical operations like addition, subtraction, multiplication and division.

### Operator:-

+, -, \*, /, //, %, \*\*

### Relational operators:-

Relational Operators compares the values. It either returns true or false according to the condition.

### Operator:-

>, ==, !=, >=

### Logical operators:-

Logical operators perform logical AND, logical OR and logical NOT operations.

### Operator:-

and, or, not.



Bitwise operators:-

Bitwise operators acts on bits and perform bit by bit operation.

operator:- &, |, ~, ^, >>

Assignment operators:-

Assignment operators are used to assign values to the variables.

operator:- =, +=, -=, \*=, /=, %=, \*\*=, &=

Special operators:-

There are some special type of operators like:-

\* Identity operators:-

is and is not are the identity operators both are used to check if two values are located at the same part of the memory. Two variables that are equal does not imply that they are identical.

e.g. - true if the operands are identical

is not - true if the operands are not identical

\* membership operators:-

In and not In. the membership operators; are used to test whether a value or variable is in a sequence.

In :- true if value is found in the sequence

not In :- true if value is not found in the sequence.

## Explain the features of Python:-

easy to code:-

\* Python is high level programming language.

\* Python is very easy to learn language as compared to other language like c, c#, java etc.

\* It is very easy to code in Python language and anybody can learn Python basic in few hours.

free and open source:-

Python language is freely available at official website and you can download [link](#) below click on the Download Python keyword

Download Python

Since, it is 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.

Object oriented language:-

One of key features of Python is object-oriented programming, Python supports object oriented language and concepts of class, object encapsulation etc.

GUI Programming support:-

Graphical user interfaces can be made using a module such as PyQT, PyQt5, wxPython, graphical apps with Python. High level language:- Python is a high-level language! -

our some python code we can work and also we can compile that code into C or C++ language Extensible language:- Python is extensible language!

We can write our some Python code into C or C++ language and also we can compile that code on C/C++ language.

Python is integrated language.

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