① What the data types in python? Explain.

② Python data type.

Data types are the classification or categorizati of data items. It represents the kind of value that tells what operations can be performed on a particul data. Since everything is an object in python programming, data types are actually class and variabl are instance of these classes.

There are the data types of python.

① Numeric
② Sequence type
③ Boolean
④ set
⑤ Dictionary.

① Numeric

In python, numeric data type represent the data which has numeric value. Numeric value can be integer, floating number or even complex numbers. These value are defined as in, float and complex class in python.

Integer :- This value is represented by int class. It contain positive or negative whole no. In python there is no limit to how long an integer value can be.

float :- This value is represented by float class. It is real number with floating point representation

complex number :- complex number is represented by complex class.

Sequence type

In python sequence is the ordered collection of similar or different data type. sequences allow to store multiple values in an organized and efficient fashion. There are several sequence types in python.

* String
* List
* Tuple

String :- In python, string are arrays of bytes representing unicode characters. A string is a collection of one or more characters put in single, double or triple quote. In python single quote and double quote string are same. It is a collection of character data. In python a character is a string of length one. It is represented by str class.

Tuple -

Tuple is an ordered collection of Python objects much like a list the sequence of value stored in a tuple can be of any type, and they are indexed by integers The important difference between a list and a tuple is that tuples are immutable, Also, Tuples are hashable whereas lists are not. It is represented by tuple class

3. Boolean -

Data type with one of the two built in values, True or false. Boolean objects that are equal to true are truthy, and those equal to false are falsy. But not - Boolean objects can be evaluated in Boolean context as well and determined to be true or false It is denoted by the class bool

Set.

In Python, set is an unordered collection of data type that is iterable, mutable and has no duplicate elements The order of elements in a set is undefined though it may consist of various element. The major advantages of using a set, as opposed to a list, is that it has a highly optimized method for checking whether a specific element is contained in the set.

Dictionary

Dictionary in python is an unordered collection of data values, used to store data value like a map, which -store unlike other data types that hold only single value as an element Dictionary holds. key: value pair. key - value is provided in the dictionary to make it more optimized. Each key - value pair in a Dictionary is separated by a colon, whereas each key is seperated by a 'comma'.

(2) Briefly explain history of Python?

(A) Python was conceived in the late 1980's by Guido van Rossum at centrum wiskunde & informatica (CWI) in the Netherlands as a successor to the ABC language (itself inspired by SETL), capable of exception handling and interfacing with the Amoeba operating system. Its implementation began in December 1989.

programming language

(3) Explain all the operators in Python.

(1) Arithmetic operators :- Arithmetic operator are used to perform mathematical operations like addition subtraction, multiplication ate division.

operators :- +, -, *, /, //, %, **

(2) Relational operators :- Relational operators compares the values. It is either return True or False according to the condition condition.

operators: >, ==, !=, >=

(3) Logical operators

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

operators - and, or, not

(4) Bitwise operators :- Bitwise operators acts on bits and performs bit by bit operations

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

(5) Assignment operators :

Assignment operations are used to assign value to the variable

operators :- =, +=, -=, *=, /=, %=, **=, //=, &=, |=, ^=, >>=,

(6) special operator :- There are some special type of operators like.

- Identity operators :- is and is not are the identity operator both are used to check if two value are located on the same part of the memory. Two variable that ade equal does not imply that they are identical.

operators

is, is not.

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

4. Explain the features of Python:

Python is a dynamic, high level, free open source and interpreted programming language. It supports object-oriented programming as well as procedural oriented programming

Features in Python

There are many features in Python, some of which are discussed below.

(1) Easy to code

Python is high level programming language. Python is very easy to learn langage. as compare to other language like, C, C++, java script, java etc It is very easy to code in python langage and anybody can learn python basic in few hours or days. It is also developer-friendly language.

(2) object-oriented language

One of the key features of python is object-oriented Programming. Python supports object oriented language and concept of classes, objects encapsulation etc.

(3) GUI Programming Support.

Graphical users interface can be made using a module such as PyQt, PyQt5, wx Python or TK in Python. PyQt5 is the most popular option for creating graphical apps with Python

(4) 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 do we need to manage the memory

(5) Justify why python is interactive interpreted language

(A) Unlike c/c++ etc. python is an interpreted objected - oriented programming language .. Unlike C language . The compiler translated the whole code in one - go rather than line-by-line . This is the reason why in c language , all the errors are linked during compilation only