

Assignment - 2

1. What is the data type in python? Explain?

Data types are the classification or categorization of data item. Data type represents a kind of value which determines what operations can be performed on that data.

→ Numeric, non-numeric and Boolean (true/f)

data which has a numeric value.

→ Numeric :- A numeric value is any representation of data which has a numeric value.

→ There are 3 types

* Integers :- positive & negative values.

* Float :- real numbers which are floating point representation in which a fractional component is denoted by decimal symbols.

* Complex numbers :-

A num with a real & Imaginary component represent as $x + yi$.

Boolean :- Data with one of two built-in values.

True or False :- Notice that 'T' & 'F' are capital. Python will throw an error for them.

Sequence types:-

A Sequence is an ordered collection of similar or different data types. Python has the following built-in sequence data types:-

* String:- A string value is a collection of one or more characters put in single double or triple quotes.

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

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

Dictionary:-

A dictionary object is an unordered collection of data in a key:value.

2) Briefly explain history of python?

Python was conceived in the late 1980s by Guido van Rossum at Centrum Wiskunde & Informatica in the Netherlands as a successor to the ABC language.

capable of exception handling & interfacing with the Amobio as.

→ The program python was named after a TV show called 'Monty Python's Flying Circus'.

→ python is a Snake name.

→ python Supports the oops language.

Language designers:-

Guido van Rossum.

Language paradigms:-

Interpreted language, Dynamic programming language.

First appeared:- 1990 & 30 years ago.

OS: Linux, macos, windows and more.

3) Explain all the operators in python?

python operators:-

1. Arithmetic operations:- these are used to perform mathematical operations like addition, subtraction, multiplication & division.

$+$ $\rightarrow x + y$, $*$ $\rightarrow x * y$, $||$ $\rightarrow x || y$

$-$ $\rightarrow x - y$, $|$ $\rightarrow x | y$, $\%$ $\rightarrow x \% y$

2. Relation operators:- These will compare the values. It either returns True or False according to the condition.

$\rightarrow \rightarrow x \rightarrow y, \quad \rightarrow \rightarrow x \rightarrow y, \quad \rightarrow \rightarrow x \rightarrow y$

$\rightarrow \rightarrow x \rightarrow y, \quad \rightarrow \rightarrow x \rightarrow y$

3. Logical operators:- These perform logical AND, Logical OR & Logical NOT operations

\Rightarrow and $\rightarrow x \& y$

\Rightarrow or $\rightarrow x \text{ or } y$

\Rightarrow not $\rightarrow \text{not } x$

4. Bitwise operators:- These operators acts on bits & performs bit by bit operation.

\Rightarrow $\rightarrow x \& y$

$\rightarrow x / y$

$\rightarrow \sim x$

$\rightarrow x \wedge y$

$\rightarrow x \gg y$

5. Assignment operators:-

These are used to assign values to the variable.

$\Rightarrow = \rightarrow x = y + z$

$\Rightarrow - = \rightarrow a - = b$

$\Rightarrow / = \rightarrow a / b = b$

$\Rightarrow || = \rightarrow a || = b$

$$\Rightarrow * \Rightarrow a * = b$$

$$\Rightarrow ^{\wedge} \Rightarrow a^{\wedge} = b$$

$$\Rightarrow + \Rightarrow a + = b$$

$$\Rightarrow * \Rightarrow a * = b$$

$$\Rightarrow \% \Rightarrow a \% = b$$

$$\Rightarrow ** \Rightarrow a ** = b$$

$$\Rightarrow ! \Rightarrow a ! = b$$

$$\Rightarrow > \Rightarrow a > = b$$

⑥ special operators?

There are some special type of operators like -

Identity operator \rightarrow is not

one of the features of python

2. \rightarrow is not

one of the features of python

one of the features of python

one of the features of python

one of the features of python

one of the features of python

4) Explain the features of python?

1. Simple :-

This language is very easy to understand.

2. easy to code :-

It is very easy to learn & code the program. It is high level language.

3. Free & open source :- It is freely available at official website & this means that source code is also available to the public.

4. object-oriented language :-

one of the key feature of python is oops programming. python supports oops & concepts of classes, objects & encapsulation etc. ---

5. GUI programming supports :-

Graphical user interface can be made using a module such as pyqt5, pyqt4, wxpython or Tk in python.

6. High level languages

python is high level language. When we write program in python we do not need to remember the system architecture, nor do we need to manage the memory.

7. Extensible Features: python is extensible language we can write our some python code into C or C++ language.

8. Portable

python is a portable language. A property of a program that can run on more than one kind of computer.

9. Integrated: It is an integrated language because we can easily integrated python with other language like, C, C++ etc.

10. Interpreted languages

python is an interpreted language because python code is executed line by line at a time.

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 translated 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 computer's language which translates the given code line by line in readable bytecodes.

Machine
→ python is a interactive, when a python stmt is entered, and is followed by the Return key, it appropriate the result will be printed on the screen, immediately in the next line.