

Date
21/11/2022

Assignment - 1

1. There are many features in Python. Some of them are —

a. Easy to code :

Python is a high-level programming language. Python is very easy to learn the language as compared to other languages as compared to other languages like C, C++, Javascript, etc. It is very easy to code in Python.

b. Free and open source :

Python language is freely available at the official website and you can download easily.

c. Object-Oriented Language :

Python supports object-oriented language and concepts of classes, objects, encapsulation, etc.

d. GUI Programming Support :

Graphical User Interface can be made using a module such as PyQt5, PyQt4, wxPython, or Tk in Python.

e. 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.

f. Extensible feature :

Python is an Extensible language. We can write some Python code into C or C++ language and also we can compile that code in C/C++ language.

3. Python is portable language :

Python language is also a portable language. For example, if we write Python code for Windows and if we want to run this code on other platforms such as Linux, Unix and Mac.

8. Python is Integrated language ?

Python is also an Integrated language because we can easily integrated python with other languages like c, c++, etc. Also, executed line by line.

9. Large standard library:

Python has a large standard library which provides a rich set of module and functions so you do not have to write your own code for every single thing.

10. Dynamically Typed language.

Python is a dynamically-typed language. That means the type (int, double, etc) for a variable is decided at run time not in advance because of this feature we don't need to specify the type of variable.

Answer (2) -

Comparison between C / Java / Python -

Python

Java

C/C++

- Interpreted Programming Language
- Supports operator overloading
- Provide both single and multiple inheritance
- Platform independent
- Supports multithreading
- Has a huge set of libraries that make it fit for AI, data science etc.

- Compiled programming Language
- Doesn't support operator overloading
- Provide partial multiple inheritances using interfaces
- Platform independent
- Has in-build multithreading support
- Has library support for many concepts like UI.

- Compiled Programming Language
- Supports operator overloading
- Provide both single and multiple inheritance
- Platform dependent
- Does not support threads.
- Has limited number of library support

- Smaller code length, 3-4 times less than java

Java has quite huge code. Code length is a bit lesser, 1.5 times less than java.

- Functions and variables can be declared and used outside the class also.

Every bit of code is inside a class.

Functions and variables are used outside the class

- Due to the use of interpreter execution is slower.

Java Program Compiler is a bit slower than C++/C.

C++/C program is a fast compiling programming language.

- Use of ; is not compulsory.

Strictly uses syntax norms

Strictly uses syntax norms.

Question 3

- Taking input in Python.

(i) `a = input()` → control string - always take string literal

(ii) `a, b = input("control string").split()`
↳ Takes two inputs as a string literal.

- Various Output format in Python

(i) `print("format specifier/control string", variable_name)`

(ii) `print("string")`

(iii) `print("control string/format specifier %", variable_name)`

(iv) `print(object, formats)`

Question-4

Answer:-

(a) id(object)

The id() function returns a unique id for the specified object.

Ex- `x = ('apple', 'banana', 'cherry')`
`y = id(x)` ↪ returns unique identity.

(b) type()

type() returns class type of the argument (object) passed as parameter.

type() function is mostly used for debugging purposes.

(c) max()

The max() function returns the item with the highest value, or the item with the highest value in an iterable.

Ex- `a = [1, 5, 3, 9]`
`x = max(a)` ↪ returns 9.

(d) min()

The min() function returns the item with the minimum value, or the item with the minimum value in the iterable.

Ex- `p = ('sweety', 'Meena', 'Sonu', 'Kusum')`
`x = min(p)` ↪ stores 'sonu' in x.

(e) eval()

The eval() methods return the result evaluated from the expression.

(f) ord()

The ord() in python returns the Unicode from a given character.

Ex- `x = A`
`p = ord("A")` or `ord(x)`
`print(p)` → display the unicode as A.

(g) bin()

The bin() function returns the binary string of a given integer.

Ex- `num = 100`
`print(bin(num))` ↪ returns 0b1100100

(h) chr()

The chr() method returns a string representing a character whose Unicode point is an integer.

Ex- `print(chr(71))` ↪ returns G