

1 Discuss the various features of Python

There are many features of Python Programming

Easy to code → Python is a high level programming language. It is very easy to learn Python as compared to other languages

Python is portable language → Python language is also portable language.

For example, if we have python code for windows and if want to run this code on other platforms such as linux, mac then we don't need to change it, we can run this code on any platforms

Object oriented language → One of the features of Python is object-oriented programming. Python supports objects and concepts of class etc.

Extensible features → Python is a extensible language. We can write some python code into C++ language and also we can compile that code in C/C++ language.

2 Discuss input and output formats in Python.

Input from user in Python

i) Python get user input with a message.

ex → `num = input("Enter your name")`

ii) Integer input in Python.

ex → `num = int(input("Enter any number"))`

How to display output in Python.

i) Using formatted string literals

Python string formatting using f string

Example → `name = 'Kunal'`

`print(f'Hello {name}! How are you?')`

output → Hello Kunal! How are you?

ii) using format()
Python string formatting using format() function

ex → a = 20
b = 10

sum = a + b

diff = a - b

print("The value of a is {} and b is {}".format(a, b))

print("{} is the sum of {} and {}".format(a, b, sum))

Output →

The value of a is 20 and b is 10

30 is the sum of 20 and 10.

iii) Using % operator

%d → integer

%f → float

%s → string

%x → Hexadecimal

%o → octal

ex → num = int(input("Enter a value"))

add = num + 5

print("The sum of %d is %d" % (num, add))

Output → Enter a value 50

The sum is 55

3 Compare between Java/C and Python (at least 7)

Java

i) Java is a static typed programming language.

ii) Java is slower than Python

iii) Widely used and documentation is available easily.

iv) Stable connectivity is offered by Java

v) GUI application and web application services

Python

Python is dynamically typed programming language.

Python is comparatively faster than Java. But in general, it is very slow as compared to C and C++.

Easily written and rapid development can be done.

Weak connectivity is offered by Python.

Scientific and numeric computing especially ML

- vi) The scope of string operation in Java is very limited
- vii) It converts bytecode into machine-readable language

The scope of string operation in Python is very widespread.
It translates machine-independent byte code.

C

- i) It is procedure oriented programming language.
- ii) C executes faster.
- iii) Pointer concept is available
- iv) C has switch statement
- v) C doesn't contain a garbage collector
- vi) The array index in C should always be positive
- vii) The variable in for loops doesn't increment automatically

Python

It is an object oriented programming language.
Python program are slower than C
Pointers are not in use.
It doesn't support switch statement
Python contains a garbage collector
In python, array index may be positive or negative
In python, increment is automatically in for loop by default i.e. +1

4 Discuss the functions.

- id() → Returns memory location of an object
- type() → Returns the type of an object
- max() → Returns the largest item in an iterable
- min() → Returns the smallest item in an iterable
- eval() → Evaluate and execute an expression
- ord() → Convert an integer representing the unicode of the specified character.
- bin() → Returns the binary version of a number
- chr() → Returns a character from the specified unicode
- oct() → Convert a number into an octal.
- hex() → Convert a number into a hexadecimal value.