

Assignment - 1

Python Programming

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• Discuss the various features of python.

Ans. There are many features of python programming.

- Easy to Code \Rightarrow Python is a high level programming language. It is very easy to learn the language as compared to other language.
- Python is Portable language \Rightarrow 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 \Rightarrow One of the features of python is object-oriented programming python supports object oriented language and concepts of class, objects etc.
- Extensible Features \Rightarrow Python is a extensible language. We can write some python code into or C++ language and also we can compile that code in C/C++ language.

Q.2 Discuss Input and output formats in python.

Ans. Input from users in python —

(i) Python get users input with a message

```
en + num = input("Enter your name")
```

(ii) Integer input in python

```
en + num = int(input("Enter a No."))
```

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", % add)
```


Output -

Enter Value : 50

The Sum is 55.

Q.9. Compare B/w Java/C and Python (At least 7)

Ans.

<u>Java</u>	<u>Python</u>
(i) Java is a static - typed programming language.	(i) Python is dynamically - typed programming language.
(ii) Java is slower than Python.	(ii) Python is comparatively faster than Java. But in general, it is very slow as compared to other language like C and C# etc.
(iii) Widely used and documentation is available easily.	(iii) Easily written and rapid development can be done.
(iv) Stable Connectivity is offered by Java	(iv) Weak Connectivity is offered by Python
(v) GUI apps and web app services	(v) Scientific and numeric Computing especially ML.
(vi) The scope of string operation in Java is very limited	(vi) The scope of string operation in Python is very widespread.
(vii) It converts bytecode into machine - readable language.	(vii) 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 loop doesn't increment automatically.

Python

- (i) It is an object oriented programming language.
- (ii) Python programs are slower than C.
- (iii) Pointers are not in use.
- (iv) It doesn't support switch statement.
- (v) Python contains a garbage collector
- (vi) In python array index may be positive or negative.
- (vii) In python increment is automatically in for loop by default of +1.

Q.4. Discuss the functions.

Ans 4.

- `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 No.
- `chr()` → Returns a character from the specified unicode.
- `oct()` → Convert a No. into an octal.
- `hex()` → Convert a No. into a hexadecimal value.