Python Theory Questions

1.What is Python? Provide some key features of Python.

Python is a high level, Interpreted and general purpose programming language. It was created Guido Van Rossum in 1991. Python supports various programming standards which includes procedural programming, object oriented programming and functional programming. It is one of the most popular programming language in real world.

The Key Features Include:

Easy to learn and use

Dynamically typed language

Open source

Cross Platform

Applications:

Web development

Data science and machine learning

Automation

Game development

2.Explain the differences between Python 2 and Python 3.

Python 2 and python 3 both are python versions of python programming language

In python2 print is a keyword if we want to print anything we don't need to use paranthesis

Whereas in python3 print is function it requires paranthesis to print something.

In python 2 strings are ascii by default. We need to use 'u' before string like u"python"

In python 3 strings are Unicode by default.

In python 2 integer division result integer value. Whereas in python 3 integer division result float.

Python 2 was not maintained. Python 3 was actively maintained.

3.How do you comment out multiple lines of code in Python?

By using triple quotes we comment multiple lines of code in python.

4.Describe the difference between == and is in Python.

== is used to compare two variables having same values or not

Ex: a=[1,2,3]

    b=[1,2,3]

print(a==b)

return true why because both variables having same values 1,2,3

Is in is used to check the both variables having same reference or not

Ex: a=[1,2,3]

    b=a

    c=[1,2,3]

a is b return True

a is c return false because both reference is not same

5.What is PEP 8? Why is it important?

PEP 8 means python enhancement proposal which provide guidelines and helps to writing python code.

It helps developers to write code that is more understandable and maintainable for them and others.

Why it is important:

Give suggestions if we did any mistake in writing code

Best practice

Readability

The pep8 mainly focus on following things:

Indentation

Whitespace

Comments

Line length

6.Explain the concept of dynamic typing in Python.

Dynamic typing in python means no need to declare the type of variables before. The type is determined at runtime.

Variables are reassigned to the values of different types without any restrictions

Ex: a=10

   a=[10,20]

   a=10.2

we can change any time we want. Easy to use.

7.What are tuples in Python? How are they different from lists?

List is created by using [] square brackets.

Tuple is created by using() paranthesis.

List is mutable means we can do add, update, remove elements any time.

Tuple is immutable means once we declare we can't do any changes.

Compare to list and tuple the performance of tuples is high And it allocates less memory than list.

For creating empty list we use list(). For creating empty tuple is we use tuple()

8.How do you create a function in Python? Provide an example.

Function is created by using def keyword followed by functions name , paranthesis and a colon.

Inside paranthesis we need to add parameters whatever we want to use in logic building.

The code block with in the function is indetended must give tab space.

9.Explain the difference between local and global variables in Python.

Local variables means whatever the variables we declare inside the function or methods accessible

Only inside the method only.

They are created when the function is called and destroyed when the function exists

Global variables means defined outside of any function. Global variables can be accessed throughout

The programs that is inside and outside.

If we want to modify global variables inside the function we use global keyword.

10.How do you handle exceptions in Python?

In python Exceptions are handled by using try, except, else and finally keywords.

How it works means

In try block it contains code that raise an exception.

In Except code that runs if any mentioned error occurs.

Else executes if no exception occurs

Finally executes all the time no matter how the code works. It is mainly used for cleanup actions