1. What is python? Why is it so popular?

**Python** is an interpreted high level general-purpose programming language. Its design philosophy emphasizes code readability, with its use of significant indentation. Its language constructs as well as its object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects. Python is dynamically-typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly, procedural), object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library.

One of the main reasons it is popular as a programming language is that it's a great way to learn how to code. It reads almost like plain English and has many features that allow you to write complex tasks very simply. Additionally, there are many applications for which Python is a great option, including data science, AI and machine learning, web development and Internet of Things (IoT) with devices like the Raspberry Pi.

1. What are the key features of Python?

* Easy to code
* Free and Open Source
* Object-Oriented Language
* GUI Programming Support
* High-Level Language
* Extensible feature
* Python is Portable language
* Python is Integrated language
* Interpreted Language
* Large Standard Library

1. What type of language is python? Programming or Scripting?

Python is a scripting language. The scripting language is also a programming language that works on the basis of automating a repeated task that involves the same or similar type of steps while executing the procedure or program. This will help in reducing the time and human effort and thus reduces the costs further. Scripting languages need a separate runtime execution to execute the code. Scripting languages are normally interpreted rather than compiled. The different types of scripting languages are Python, JavaScript, Perl, Visual Basic, ECMAScript, Bash and Unix Shell Scripts etc.

1. What is pep 8?

PEP or Python Enhancement Proposal is a set of rules that specify how to format Python code for maximum readability. It is an official design document that provides relevant information to the Python Community, such as describing a new Python feature or a Python process. PEP 8 is an important document that includes the style guidelines for Python Code. Anyone who wishes to contribute to the Python open-source community must strictly abide by these style guidelines.

1. Python an interpreted language. Explain

The interpreter translates a line of that code into binary at the same time as the program is being executed and shows any errors found in that line instantly, whereas the compiler translates the whole program and shows all the errors at a time. Therefore, as an interpreted language, Python will analyze each statement in the program and show an error message present in that particular line at a time, and then perform the desired action after correcting it.

1. How is memory managed in python?

* Memory management in Python involves a private heap containing all Python objects and data structures.
* Interpreter takes care of Python heap and that the programmer has no access to it.
* The allocation of heap space for Python objects is done by Python memory manager.
* The core API of Python provides some tools for the programmer to code reliable and more robust program.
* Python also has a build-in garbage collector which recycles all the unused memory.
* When an object is no longer referenced by the program, the heap space it occupies can be freed.
* The garbage collector determines objects which are no longer referenced by the program frees the occupied memory and make it available to the heap space.

1. What is namespace in python?

Namespace is a way to implement scope. In Python, each package, module, class, function and method function owns a "namespace" in which variable names are resolved. When a function, module or package is evaluated (that is, starts execution), a namespace is created. Think of it as an "evaluation context". When a function, etc., finishes execution, the namespace is dropped. The variables are dropped. Plus there's a global namespace that's used if the name isn't in the local namespace.