**Python Questions**

* **What is python?**

**Python is a versatile, high-level, general-purpose programming language known for its readability and simplicity. It's widely used in various fields like web development, data science, and machine learning. Python is an interpreted language, meaning code is executed line by line, and supports multiple programming paradigms, including procedural, object-oriented, and functional.**

* **Tell me the areas where python is being used?**

**Data analysis and machine learning.**

**Web development.**

**Automation or scripting.**

* **What is high level and low-level language?**

**Python is a high-level programming language. It is designed to be human-readable and easier to use than low-level languages like assembly or machine code.**

* **What is interpreted language?**

**An interpreted language is a type of programming language where the code is executed directly, line by line, without the need for a separate compilation step. Instead of being converted into machine code before execution, the code is interpreted, or read, by a special program called an interpreter. This means the interpreter translates and runs the code as it's being read.**

* **What is compiled language?**

**compiled language is a programming language where the source code is translated into machine code before the program is executed, typically using a compiler.**

* **What is statically typed language?**

**A statically typed language is a programming language where the data type of a variable is known at compile time, before the program runs. This means the programmer must explicitly declare the data type of a variable when it is created, and the compiler checks that the variable's type is consistent throughout the program.**

* **What is dynamically typed language?**

**In dynamically typed languages, the type of a variable is determined at runtime, meaning the data type is assigned during the program's execution, not during compilation.**

* **What is weakly typed?**

**In a weakly typed programming language, the data type of a variable is not explicitly defined. This means the language can infer the type at runtime, and can even convert types implicitly, often through a process called type coercion.**

* **What is strongly typed language?**

**A strongly typed language, in programming, means that the type of each variable is defined during compilation, and type errors are detected by the compiler at compile time or runtime.**

* **What is .PYC file (Byte code)?**

**A .pyc file is a compiled version of a Python source file (.py). When a Python script is executed or imported, the Python interpreter compiles the source code into bytecode.**

* **What is PVM?**

**PVM (Parallel Virtual Machine) is a software system that allows multiple computers, potentially of different types and architectures, to be treated as a single, unified parallel computer.**

* **How Python internally works?**

**The Python interpreter acts as a virtual machine, executing the code by converting it into machine-specific binary code.**

* **What is PEP 8?**

**PEP 8 is the official style guide for writing Python code.**

* **What is PIP what is the use of PIP?**

**PIP (Pip Installs Packages) is the standard package manager for Python, used to install and manage Python libraries and packages.**

* **What is Byte code and when is it created?**

**Bytecode is an intermediate representation of computer code, typically generated by a compiler, that is then interpreted by a virtual machine (like the JVM in Java).**

* **What is indentation in python? Does python relay on indentation?**

**Python, indentation refers to the consistent use of whitespace (spaces or tabs) at the beginning of a code line to define the structure and scope of code blocks. Python does rely on indentation; it's a fundamental part of the language's syntax, not just a stylistic choice. Unlike languages that use braces or keywords to define code blocks, Python uses indentation to group statements together.**

* **What is variable?**

**A variable in Python serves as a named storage location in the computer's memory, holding a value that can be accessed and modified during the execution of a program. It acts as a symbolic name for a memory address, allowing programmers to work with data in a more intuitive and manageable way.**

* **What are variable naming rules?**

**Variable names must be unique within their scope, cannot be reserved words, and typically follow naming conventions like camelCase or snake\_case for multi-word names. They must also start with a letter or underscore and can contain alphanumeric characters and underscores.**

* **What is datatype and name of datatypes?**

**A data type specifies the kind of data a variable can store and the operations that can be performed on it.**

* **What is keyword in Python?**

**Keywords in Python are reserved words that have predefined meanings and purposes within the language. These keywords cannot be used as identifiers (variable names, function names, etc.)**