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Q1) How does a computer Program Works?

Actually a program is a collection of instructions that can be executed by a computer system to perform special tasks which is given by user in it.

A program in computer system is usually written by user who’s having a proper knowledge of programming language, there are lot of types of computer programming language used in computer system (ex:- C, C++, Java, Python, etc.) and all related data of programming language it is called code or source code, and all are referred to as software computer programs may be categorized in form such as application software and system software.

Q2) Can we compare natural vs. Programming Language?

Yes definitely we can compare natural language with programming language because we have to make it reliable for easy to understand everyone, we all know we are communicating by using various languages like Hindi, English, Marathi, Tamil, Telgu, etc. Communicating by using this different languages we need a proper communication channel for understanding topics or ideas what we want to share with each other, similarly we need a different- different channels of communication with computer system by using various programming languages that’s why we have to compare programming language with natural language for finding out different ways of approach it and explain it to easy communication with computer system.

Q3) what is Compilation Vs Interpretation?

We all know most of programs are written in a high-level language such as C, Java or Python. Just as a human language makes it easy for people to communicate each other’s so computer language simplify the job of telling computer what to do because computer only understands numbers means binary language or codes so as per this we need a translator to properly communicate and that’s what interpreters and compiler do.

The process of interpreting or compiling an interpreter produces a result from a program which is entered by user in computer system in the form of programming language and compiler is nothing but the assembly language that means assembler of architecture it is used to convert result into binary code which is given by interpreter and assembly language is varies for each individual computer system.

In which compiler takes an entire program whereas the interpreter takes a single line of code and also compiler is based on translation linking-loading model, whereas interpreter is based on interpretation method.

Compiler and interpreter jobs are have some similarity but in which compiler, compiler takes a single line of code and compiler also used for finding error from source code

Note:- In which one thing we have to know, A complied program is not human readable.

Q4) What Does Interpreter actually Do?

Actually interpreter is nothing but the pre compiler because it is converting or translates the high-level language into the machine code. This includes source code and scripts and interpreter are used to convert human readable program code into machine code when the program or machine is run.

Compiler and interpreter jobs are have some similarity but in which compiler, compiler takes a single line of code and compiler also used for finding error from source code.

Q5) what is Python?

It is not easy to describe python in single line because python are one of the best programming language which are having a lot of definitions.

Python is an interpreted, object oriented, high-level programming language with dynamic semantics and it is also high built in data structures, combined with dynamic typing and dynamic binding make it very attractive for rapid application development it is known as scripting language which is used to connect existing components together.

And python language are easy to learn because it is having syntax emphasizes readability which is reduces the cost of program maintenance.

Q6) what are Characteristics of Python?

i) Python**supports an interactive mode**which allows**interactive testing**and**debugging for snippets of code.**

**ii)** In Python, there are **no editing,** debugging, **testing,** and **compilation** steps, so that’s why it is**very fast.**

iii) Python is a interpreter because it is code are compile line by line in it.

iv) Python is also support high-level scripting language.

v) Python is a **platform-independent** scripted language which comes with features to have complete access to operating system **APIs.**

vi) Python can be easily compiled to **byte-code**; that’s the reason it is most **suitable** for **building large applications**.

Q7) what are features of Python?

Python is a most recommended programming language and it’s having a lot of features some of them are as follows.

**i)** **Easy to code:-** Python is high-level language and python is very easy to learn as compared to other languages like C, C#, Java, etc. it is also developer friendly language.

**ii)** **Free and open source:-** python language is freely available at the official website and we can download it free of cost. Python source code publically available for use.

**iii)** **Object oriented language: -** python also support object oriented language and concept of classes, etc.

**iv)** **Python is portable language: -** Python is portable language because we can use in any operating system.

**v)** **Python is Integrated language: -** Python is integrated language because we can easily integrated python with other languages like C, C++, Java, etc.

**vi)** **Python is interpreted language: -** Python is interpreted language because python code is executed line by line.

Q8) what are different flavors of Python?

Types of Python compilers are referred as flavors of Python. They help to integrate various types of programming languages in Python some of them are written as follows.

**i) CPython:**- It is a Python compiler that was implemented in C language. Even C++ code can be executing using CPython.

**ii) JPython:-**It is enables Python implementation to be run on Java platform. It runs on JVM.

**iii) IronPython:-**It is compiler designed for .NET framework, but it is written in C#. It can run on CLR (Common Language Run time).

**iv) PyPy:**-It is a Python implemented by using Python language itself. It runs fast since JIT is incorporated to PVM.

**v) Ruby Python:**-It acts as a bridge from Ruby to Python interpreter. It embeds the Python interpreter inside the Ruby application

**vi) Pythonxy:**-It is written in the form of Python(X, Y). It is designed by adding scientific and engineering related packages.

**vii) Anaconda Python:**-The name Anaconda Python is obtained after redeveloping it to handle large scale data processing, predictive analytics and scientific computing. It handles huge amount of data.

**viii) Stackless Python:**- **Stackless Python is a python programming language interpreter, stackless python originated as an attempt to separate the python execution engine’s stack from that of underlying implementation C.**