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Python programming : Assignment 1

Q1 : Explain the concept of interpreter . Discuss python interpreter

And steps with suitable diagram .
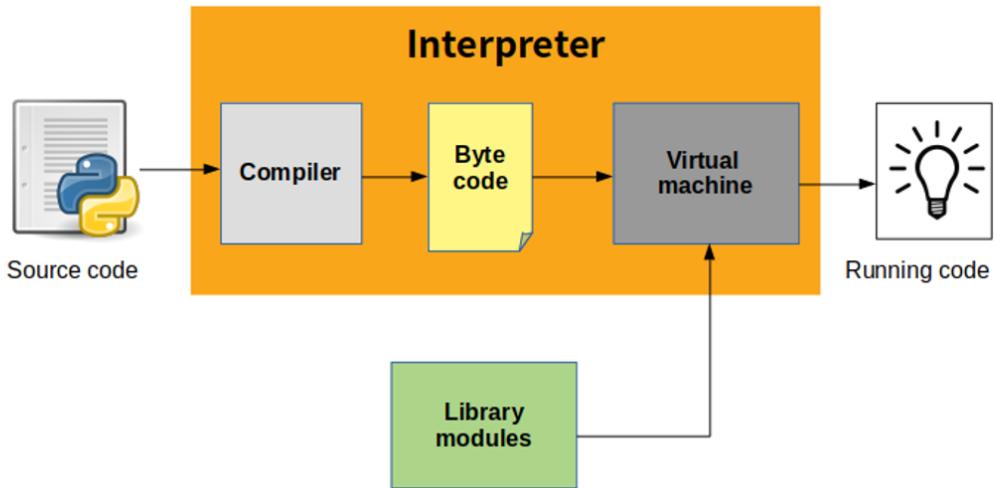
Ans : Interpreter is a program that reads , translate and executes a program line by line .

python interpreter means if we combine python and interpreter is a program that reads , translate and executes python code line by line . It converts each line by line of python code into a form that computer can understand and runs it immediately . If a error occurs in any line then interpreter stops the execution and displays the error at that point . In this way it is easy for new learners or beginners to learn python easily as it auto detects the errors.

. step by step is this

1) Programmer writes the source code .

2) Interpreter reads the first line .

3) Then the line is translated into a machine language .

4) Then the line is executed .

5) Then the same process repeats for the next line and then the other line too .

6) The same thing is repeated for the whole code.

. Diagram for python interpreter :

Q2) Differentiate between a compiler and interpreter with suitable examples .

Ans) There are two main types of translators used in a programming languages

1) Interpreter

2) compiler

Both are used to convert high – level language into a machine understandable form , but both works in a different ways :-

1) Interpreter :- interpreter is a program that reads , translate and executes a program line by line and

coverts it into machine language , if an error occurs in any line, the interpreter stops immediately and shows the error , because of this interpreter are very useful for learning and debugging programs .

Example : python

2) Compiler : A compiler translates the entire program at once into machine code . firstly it checks the whole program for errors. If there are no error found in the code or program , it generates an object code or executable file ,which is then executed .

If there are any error , the compiler displays all errors together after compilation .

Example : c ,c++

Diagram :

| Source Code | → Preprocessing → | Object Code | → Processing → | Machine |

Figure: Compiler
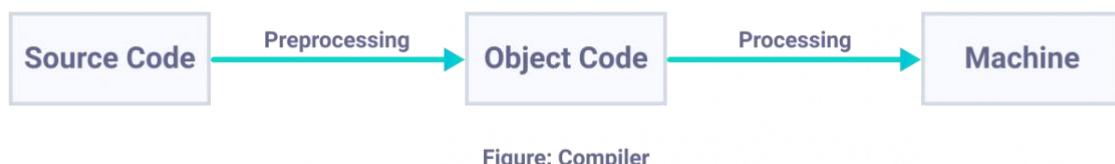
| Source Code | → Preprocessing → | Intermediate Code | → Processing → | Interpreter |
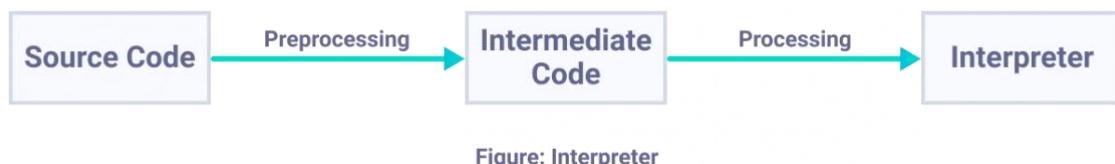
Figure: Interpreter

Q3) Outline and explain the advantages and disadvantages of the interpreter with supporting language.

Ans) The advantages and disadvantages of the interpreter are :

1) Advantages : a) interpreted languages are simple and close to human language .

b) As the interpreter executes the code line by line and it can show error immediately and shows at the exact line.

c) interpreters do not require a separate compilations step . programs can be run directly , saving time during development .

d) These programs can run on different system and long as the interpreter is available .

 2) Disadvantages : a) Interpreter translate code every time the program runs ,which makes execution slower compared to compiled programs .

b) If an error occurs the interpreter stops executions immediately. This means other error in the program are not shown at the same time .

c) to run a program for a specific language you must need that interpreter installed in your system .

d) Because of slower execution speed interpreters are not ideal for large programs .