Q1. WHAT IS THE DIFFERENCE BETWEEN A COMPILER AND ITERPRETER?

ANS.1. The difference between compiler and interpreter are as follows:

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| COMPILER | INTERPRETER |
| Compiler scans the entire program and translates the whole of it into machine code at once. | Interpreter translates just one statement of the program at a time into machine code. |
| A compiler takes a lot of time to analyze the source code. However, the overall time taken to execute the process is much faster. | An interpreter takes very less time to analyze the source code. However, the overall time to execute the process is much slower. |
| A compiler always generates an intermediary object code. It will need further linking. Hence more memory is needed. | An interpreter does not generate an intermediary code. Hence, an interpreter is highly efficient in terms of its memory. |
| A compiler generates the error message only after it scans the complete program and hence debugging is relatively harder while working with a compiler. | Keeps translating the program continuously till the first error is confronted. If any error is spotted, it stops working and hence debugging becomes easy. |
| Compliers are used by programming languages like C and C++ for example. | Interpreters are used by programming languages like Ruby and Python for example. |