PHYTON PROGRAMING

1 . what is difference between compiller and interpreter

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

2. diffrence between phyton 2 and 3

* **Python 3** syntax is simpler and easily understandable whereas **Python 2** syntax is comparatively difficult to understand.
* **Python 3** default storing of strings is Unicode whereas **Python 2** stores need to define Unicode string value with "u."
* **Python 3** value of variables never changes whereas in **Python** 2 value of the global variable will be changed while using it inside for-loop.
* **Python 3** exceptions should be enclosed in parenthesis while **Python 2** exceptions should be enclosed in notations.
* **Python 3** rules of ordering comparisons are simplified whereas **Python 2** rules of ordering comparison are complex.
* **Python 3** offers Range() function to perform iterations whereas, In **Python 2,** the xrange() is used for iterations.

3 . why phyton and advantages ?

1. Presence of third-party modules
2. Extensive support libraries(NumPy for numerical calculations, Pandas for data analytics etc)
3. Open source and community development
4. Versatile, Easy to read, learn and write
5. User-friendly data structures
6. High-level language
7. Dynamically typed language(No need to mention data type based on the value assigned, it takes data type)
8. Object-oriented language
9. Portable and Interactive