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| interpreter | compiler |
| Translates program one statement at a time | Scans the entire program and translates it as a whole into machine code. |
| It takes less amount of time to analyze the source code but the overall execution time is slower. | It takes a large amount of time to analyze the source code but the overall execution time is comparatively faster. |
| No intermediate object code is generated, hence are memory efficient. | Generates intermediate object code which further requires linking, hence requires more memory. |
| Continues translating the program until the first error is met, in which case it stops. Hence debugging is easy. | It generates the error message only after scanning the whole program. Hence debugging is comparatively hard. |
| Programming languages like Python, Ruby use interpreters. | Programming languages like C, C++, Java use compilers. |