

What is difference between Compiler and Interpreter?

ASPECT	COMPILER	INTERPRITER
EXECUTION APPROACH	Translates the entire source code into machine code at once.	Translates and executes the source code line-by-line.
OUTPUT	Produces a standalone executable file that can be run independently.	Does not produce a separate file; executes instructions directly.
SPEED	Faster execution after compilation because the code is already in machine language.	Slower as it translates code during execution.
ERROR DETECTION	Detects errors during the compilation process and reports them all at once.	Detects errors one at a time during runtime.
EXAMPLES	C, C++, and Java (when compiled to bytecode).	Python, JavaScript, and Ruby.
USAGE SCENARIO	Suitable for production-level software where performance is critical.	Ideal for scripting, debugging, or interactive programming.