Programming Languages

Compiler	Interpreter
Programming Language	Scripted Languages
Translates source code into machine language	Translates and executes source code into machine language one line at a time.
Checks source code for errors before translating it into object code	
If the source code is found to have errors •The compiler specifies the errors	If the interpreter finds an error, the process is terminated at the same statement containing the error and displays an error message.
Errors must be resolved (also known as debugged) before the compiler successfully recompiles the sources code.	The error must be resolved before the interpreter continues to the next line.
C, C++, C# and Java programs need compilers to execute.	Perl an Python execute using interpreters. Python, PHP, JavaScript, Ruby
Disadvantage – you need to compile the whole code and then run it after all errors are fixed.	Advantage is that you can run a single line of code and see it's output.

Language	Interpreted	Compiled
Java		X
C++		X
Python	X	
C		X
C#		X
Perl	X	
Javascript	X	
TCL	X	
PHP	X	
Go/GoLang		X
Visual Basic .NET		X

Algorithms

- Is a step-by-step formula outlining how to execute a task.
- Example: a recipe
- Provides a specifically structured set of inputs require to produce a specific output.
- In IT is a set of well-organized, computer-implemented instructions that often result in a computation or the solution to a problem.
- Can be simple or complex
- At the very heart of machine learning
  Is a mathematical method of solving problems both big and small.