

**Lesson 1.3 Algorithms in *Python* Key Terms**

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| Term | Definition |
| Arguments | The values that the programmer provides in the function call. |
| Assignment Operator | The ‘=’ character causes the compiler or interpreter to evaluate to the expression on its right and store the result in the variable(s) on its left. |
| Block of Code | A group of program statements that are grouped together, denoted by indentation in *Python*. |
| Built-in Function | The set of functions available to the programmer without the need to use any “import” or “include” statements. |
| Call | Code telling the interpreter or compiler to execute a function or method defined elsewhere, replacing the call with a return value if applicable. |
| Character | Any single typeset unit, including uppercase and lowercase letters, digits, punctuation marks, international characters like letters with Ümläüts, and special characters like tabs and carriage returns. |
| Clone | A duplicate copy. |
| Collection | A variable or value with several elements such as a string, tuple, or list. |
| Compiler | A computer program created to read an entire program and convert it into a lower-level language and ultimately to assembly language used by the processor. |
| Compound Conditional | A conditional with one or more logical operators used to incorporate several logical expressions. |
| Default Value | *Python* allows a programmer to specify the value for an argument if the function is called without that actual argument. |
| Diff | The set of differences between two versions of the same piece of code. |
| Docstring | A special comment located at the beginning of a program or the beginning of a function that is used to automatically create help documentation. |
| Element | A single object or variable/value in a collection. |
| Evaluate | To determine the result of an expression. |
| Exception | An error or other message raised by the interpreter or compiler to indicate a special circumstance that should be handled by an exception handler. If an exception is not handled, the program will stop and report the error. |
| Float | A native type representing rational numbers to limited precision. |
| Flow Chart | A graphic organizer that can be used to show the procedural pathways within a program. |
| Formal Arguments | For internal use within a function, formal arguments are names that represent data passed to the function, discarded after the function has been executed. |
| Function Name | A unique identifier given to the function when it is defined and used again whenever the function is called. |
| Garbage Collection | Releases memory that was used for a variable's value once the variable is no longer to be used by a program. |
| Glass Box Testing | Process for evaluating the correctness or effectiveness of a piece of software while examining its algorithmic structure. |
| Immutable | Not able to be changed after creation. |
| Import | In *Python* import is a key word for using one module of code from inside another module. |
| Int | A native type representing the integers, which are positive whole numbers and their opposites. |
| Interpreter | Converts a program written in a higher level language into a lower level language and executes it, beginning execution before converting the entire program. |
| Iterable | A property of collections that are used to provide elements one at a time and in sequence. |
| Least Significant Bits | The bits that contribute the smallest amount to the overall value of a binary number, including the 1s place value. |
| Library | A collection of modules. |
| Loop | Algorithmic structure for performing the instructions multiple times, with each pass through the loop called an iteration. Usually controlled by a condition evaluated with each iteration. |
| Machine Code | Zeros and ones that represent simple instructions executed by a processor. |
| Module | An encapsulated collection of one or more related classes, each with its own methods and attributes. |
| Multi-line Comment | Denoted by either ‘’’, or “”” these can generate docstrings and allow the programmer to leave notes in code that span several lines without having to type ‘#’ at the beginning of each line. |
| Multiple Assignment | *Python* allows a programmer to assign values to several variables at once. This may be used to store a group of values returned by a function. |
| Mutable | An object that is able to be changed after its creation. |
| Namespace | The set of variable and function names that have been reserved by the compiler/interpreter. |
| Native Type | The types of data built into a programming language, often faster and more efficient with resources. |
| Null String | A string that contains no characters. |
| Op Code | The digital representation of an instruction that will be fetched, decoded, retrieved, and executed by the CPU. |
| Register | A very tiny part of the processor microchip that stores bits of data, typically 32 or 64 bits in modern computers. |
| Return Value | Any value that a method or function gives back to the statement command from which the function or method is called. |
| Scope | The portion of a program that knows about a variable and can access its value. In *Python* a variable has a local scope (the variable can only be used in a function definition) or global scope (the variable can be used anywhere in the source file of code). |
| Slicing | Selecting a portion of a collection. |
| String | A native type in *Python* representing a sequence of characters. Strings are both iterable and immutable. |
| Syntax | The grammar of a programming language, defining what specific sequences of characters are allowed, what they mean, and how they can be put together. |
| Test Suite | A software package designed to evaluate the correctness or effectiveness of another software solution. |
| Test-Driven Design | A software development process in which developers first create a test suite and then create the code to satisfy the test suite, e.g., Xtreme Programming. |
| Traceback | A list of code that was executed just before an exception stopped the program. |
| Tuple | A native type in *Python* that can store a collection but cannot assign new values to individual elements. |
| Type Casting | Converting data from one type to another, e.g., from string to int, potentially losing information. |
| Unique | Without duplicates; a unique set of numbers is a group of numbers such that no number appears twice. |
| Validate | Ensure that the values stored in variables are of the correct type and/or within appropriate value ranges. |
| Variable Binding | A process in which the name you give a variable is stored in a lookup table along with the memory address that the interpreter should access when the variable is referenced in the future. |
| Version Control | A process to keep track of what changes were made to what files so that a specific version can be referred to and improvements in multiple versions can be merged together. |
| Working Directory | The directory in the file system you are currently "in". |