statement	program	output
string	comment	indentation
error	input	variable

A result produced by a function, calculation, device or program.	A set of instructions specifying operations for a computer to carry out.	A unit of Python program instruction, such as assignment, return, an if statement or a loop.
Space placed at the start of a line to show structure, including code blocks in languages that use it syntactically.	Explanatory text in source code or markup that does not execute as a program instruction.	A sequence of characters treated as a single data value.
A quantity or named value that can change or take different values.	A value, signal or resource supplied to a function, program, device or process.	A problem preventing correct execution or behaviour, including syntax errors, exceptions and logic mistakes.

variable	value	assignment
integer	float	operator
expression	type conversion	Boolean

Storing a value in a variable or other named location.	An amount, number or item assigned to a variable or expression, or held by a data object.	A quantity or named value that can change or take different values.
Symbols or keywords specifying operations to perform on values or expressions.	Python's floating-point numeric type, with finite precision and range rather than exact storage of every decimal fraction.	A whole number that may be positive, negative or zero.
A logical value that is either true or false.	Producing a value of another type, such as converting a numeric string with int(), subject to the conversion's rules.	A combination of values, variables and operators representing a quantity or a value to be evaluated.

comparison	string	character
index	error	slice
step	reverse	method

A text unit such as a letter, digit, punctuation mark or other symbol.	A sequence of characters treated as a single data value.	Examining two or more items to identify similarities, differences or their relative order.
Selecting part of a sequence using start, stop and optional step values; the stop position is excluded.	A problem preventing correct execution or behaviour, including syntax errors, exceptions and logic mistakes.	A position marker or lookup structure used to locate data within a collection or database.
A function associated with a Python class or object, with binding behaviour determined by its declaration.	Put items in the opposite order; the relevant operation may return a new value or mutate a mutable collection.	For a slice or range, the increment between selected positions or generated values; a negative step moves backwards.

immutable	original	concatenation
f-string	expression	decimal places
indentation	condition	colon

Joining sequences, such as strings, end to end.	The value or object before an operation is applied, as distinct from a returned replacement or copy.	Unable to have its value or state changed after creation.
The number of digits displayed after the decimal point; formatting a value does not necessarily change the underlying stored number.	A combination of values, variables and operators representing a quantity or a value to be evaluated.	A Python string literal with an f prefix whose replacement fields evaluate expressions and insert their formatted values.
The punctuation mark : used to introduce an explanation, list or related statement; in code its role depends on the language.	An expression whose truth value selects control flow, such as the test following if or while.	Space placed at the start of a line to show structure, including code blocks in languages that use it syntactically.

branch	comparison	Boolean
loop	sequence	step
update	accumulator	infinite loop

A logical value that is either true or false.	Examining two or more items to identify similarities, differences or their relative order.	One possible path through a conditional statement or decision.
For a slice or range, the increment between selected positions or generated values; a negative step moves backwards.	An ordered collection supporting access by position, such as a list, tuple or string.	A structure that repeats a sequence of instructions.
A loop that continues indefinitely because its stopping condition is never reached or no stopping condition is provided.	A variable holding a running result, such as the total updated as a loop visits values.	Change a stored value, binding or collection according to the intended operation.

nested loop	inner loop	outer loop
list	item	traverse
2-D list	grid	nested loop

A loop enclosing another loop and controlling the larger repetition structure.	A loop inside another loop, repeated for each relevant iteration of its enclosing loop.	A loop located inside another loop, so its iterations occur as part of each relevant outer iteration.
To visit the elements of a data structure systematically.	One element or value within a collection.	A mutable Python sequence that can grow or shrink and can contain references to objects of different types.
A loop located inside another loop, so its iterations occur as part of each relevant outer iteration.	Data organised as rows and columns, often modelled in Python with a list of row lists.	A list of lists – a grid of rows and columns.

list comprehension	tuple	unpack
set	membership test	dictionary
key	value	default

Assign separate values from an iterable to separate targets, subject to the assignment's length and starred-target rules.	An ordered collection of values that cannot be changed after it is created.	A Python expression that creates a list by evaluating an expression for selected items from an iterable.
A data structure that stores associations between keys and their values.	A check such as in or not in that asks whether a collection or object contains a value according to its rules.	A collection of distinct elements.
A fallback value used when no more specific value is supplied; dict.get uses one when a key is absent.	An amount, number or item assigned to a variable or expression, or held by a data object.	A value used to identify or look up an associated item, such as a key in a dictionary or database.

function	define	call
return	parameter	argument
local	scope	procedural abstraction

Invoke a function or other callable with the chosen arguments.	Create a function or other named construct by specifying its parameters and behaviour.	A callable block of Python code that can receive arguments and produce a return value or other behaviour.
Values or references supplied to a function or procedure when it is called.	A named input in a function or procedure definition that receives a supplied argument when it is called.	Finish the current function call and supply a value to its caller; without an explicit value Python returns None.
Packaging a sequence of instructions into a named procedure so it can be used without needing to know its implementation.	The region of a program in which a particular name or binding can be accessed.	For a name here, bound in a function's local scope; objects referred to by it can still outlive the call.

module	import	default value
syntax error	runtime error	logic error
traceback	exception	handle

A parameter value used when its argument is omitted; Python evaluates default expressions when the function is defined, not afresh for each call.	To load a module or make its names available for use in a program.	A reusable unit of Python code with its own namespace, commonly loaded from a file.
A mistake in an algorithm or program that produces an incorrect result despite valid syntax.	An error that occurs while a program is executing.	A mistake that breaks the grammatical rules of a programming language.
Respond to an exception or condition with appropriate code, such as an except block.	A run-time event represented by an exception object that interrupts normal execution unless appropriately handled.	A report of the chain of calls and locations leading to an exception, useful for locating the fault.

test	edge case	robust
text file	mode	remove
newline	append	algorithm

Able to handle the specified range of inputs and anticipated errors reliably rather than succeeding only on a typical example.	A case near an input limit or other unusual condition, such as an empty collection or one remaining item.	Execute or inspect behaviour against an expected result, using chosen inputs and conditions.
Delete or omit something according to the operation's rules; for example, strip() removes matching edge characters, not arbitrary internal text.	A setting that determines how a file is opened or used, such as reading, writing or appending.	A file that stores data as a sequence of encoded characters.
A finite sequence of precise steps for solving a problem or carrying out a task.	Add an item to the end of a collection; Python list.append changes the list and returns None.	A character marking a line ending, commonly '\n' in Python strings.

decomposition	abstraction	pseudocode
flowchart	decision	recursion
base case	recursive case	call stack

A language-independent description of an algorithm using structured, programming-like statements.	Representing essential features while leaving out unnecessary detail.	Breaking a large programming problem into smaller tasks that can be solved separately.
Solving a problem using further calls to the same routine, with a stopping case and progress towards it.	A choice between actions based on one or more conditions.	A diagram showing the sequence of steps and decisions in a process or algorithm.
A stack that records active function calls and their return information.	The part of a recursive definition or algorithm that reduces a problem by invoking the same process on a smaller or simpler case.	A case that can be solved directly and stops further recursive calls.

abstract data type	stack	LIFO
push	pop	queue
FIFO	enqueue	dequeue

An ordering rule in which the most recently added item is removed first.	A last-in, first-out data structure in which items are added and removed at the same end.	A specification of stored values and permitted operations that does not depend on a particular implementation.
A data structure in which items are normally removed in the order they were added.	Remove and usually return an item, such as the top of a stack or a selected list element.	Add an item to the top of a stack.
To remove the next item from the front of a queue.	To add an item to the rear of a queue.	An ordering rule in which the earliest added item is removed first.

linked list	node	pointer
hash table	hash function	collision
binary search tree	graph	vertex

Here, a reference linking one node to another in a Python data-structure model, rather than a raw C memory address.	An individual unit or point in a network, graph, tree or linked data structure.	A chain of nodes.
A situation in hashing where different keys produce the same hash value or storage position.	A computation mapping an input to a hash value; different inputs can produce the same result.	A structure using hashes of keys to organise lookup locations, with a way to handle collisions.
A corner or meeting point of edges, a turning point of a parabola, or a node in a graph, depending on the context.	A mathematical structure consisting of vertices connected by edges.	A binary tree ordered so left-subtree keys precede a node's key and right-subtree keys follow it, with a defined duplicate-key policy.

edge	adjacency list	search
linear search	binary search	sort
bubble sort	swap	insertion sort

Find an item or explore data according to a specified search method.	A graph representation storing each vertex's connected neighbours, optionally with edge information such as weights.	Connections between vertices in a graph, or boundary segments of a geometric shape.
Arrange items according to an ordering rule; Python sorted returns a new list, while list.sort modifies its list in place.	A search of ordered data that repeatedly compares with the middle item and discards half of the remaining search range.	Checking items in sequence until the required item is found or the list ends.
A sorting method that inserts each new item into its correct position in the already sorted part of a list.	Exchange two stored values while preserving both, as with Python's simultaneous assignment a, b = b, a.	A sorting algorithm that repeatedly compares adjacent items and swaps those in the wrong order until the sequence is ordered.

efficiency	Big-O	seed
simulation	class	object
instance	constructor	attribute

An initial value used to set the state of a pseudorandom-number generator.	Notation for an asymptotic upper bound on growth, such as an algorithm's time or memory use as input size increases.	How an algorithm uses resources such as running time and memory as its input grows.
An entity in a program with associated state and behaviour, often an instance of a class.	A definition creating a type whose instances can have attributes and methods.	A model that imitates the behaviour of a real or proposed system.
A named property or characteristic associated with an object, element or record.	Here, the introductory name for object setup through ___init___; Python creates the instance through ___new___ before initialisation.	A particular occurrence or example; in object-oriented programming, an object created from a class.

method	inheritance	subclass
superclass	override	encapsulation
private	polymorphism	paradigm

A class that inherits attributes or behaviour from another class and may extend or override them.	The mechanism by which a class acquires attributes or behaviour from another class.	A function associated with a Python class or object, with binding behaviour determined by its declaration.
Grouping data with the operations that use it and controlling access through an interface.	Supply a subclass method that replaces inherited behaviour for the relevant call.	A class from which another class inherits attributes or behaviour.
A style of writing programs.	Use a common operation across different object types, each providing suitable behaviour.	Here, intended to be non-public by convention; a single leading underscore in Python does not prevent external access.

procedural	object-oriented	declarative
bit	binary	denary
byte	overflow	compression

Describing desired results, facts or constraints rather than prescribing every step used to obtain them.	Organised around objects combining data with associated behaviour.	Organised around procedures or functions that perform sequences of operations.
The base-ten number system, using the digits zero through nine.	A number system using base two, with the digits zero and one.	A binary digit, taking the value zero or one.
Encoding data in a representation intended to use less storage, either preserving all information or allowing specified losses.	A condition in which a result exceeds the range representable by the available storage or number format.	A group of eight bits, commonly used as a unit of data storage.

lossless	lossy	run-length encoding
run	hexadecimal	computing
design cycle	Internet	network

Lossless compression that stores a repeated run as a count and a symbol, such as 6W for six white pixels.	Describing compression that discards some original information so it cannot be perfectly recovered.	Describing compression from which the original data can be recovered exactly.
Using computational processes to represent, manipulate or solve problems involving information.	A base-sixteen number system using digits zero to nine and letters A to F.	In run-length encoding, a consecutive group of repeated occurrences of the same value.
A set of connected devices or nodes that can exchange information.	A network of networks.	Repeated stages of planning, implementation, testing and refinement used to develop a solution.

packet	protocol	redundancy
fault tolerance	sequential	parallel
core	speedup	distributed

Additional or repeated data, capacity or components beyond what is strictly necessary, sometimes provided for reliability.	An agreed set of rules governing communication between devices or systems.	Units of data sent through a network, containing payload and control information such as addressing details.
Describing operations that take place concurrently rather than one after another.	Describing items or operations handled in a defined order, one after another.	The ability to continue providing specified service despite some faults, within the system's designed limits.
Carried out across multiple connected computing systems that communicate or coordinate their work.	A measure of improvement in execution time, commonly the original run time divided by the improved run time for the same task.	A processing unit within a CPU that can execute an instruction stream.

digital divide	bias	intellectual property
personal data	privacy	mini-project
procedure	selection	iteration

Rights relating to creations of the mind, such as inventions, written works, designs and distinctive signs.	A systematic preference or prejudice that can distort judgement, decisions or the representation of information.	Differences in access to digital technology, connectivity, skills or opportunities to use them effectively.
A limited project combining several learned skills to produce and evaluate a working result.	The ability to control access to personal information and aspects of one's private life.	Information relating to an identified or identifiable person, subject to the relevant legal and practical context.
Repeating a sequence of instructions or calculations.	Choosing which branch of instructions to execute according to a condition.	A named sequence of instructions that performs a task when called.