Programming

International Baccalaureate · IB Diploma · Computer Science · HL · Vocabulary in context

Word	Example
variable /'veərɪəbl/	A **variable** stores a value that can change.
constant /'kɒnstənt/	A **constant** such as Pi never changes. Pi
data type /'deɪtə taɪp/	INTEGER is a **data type**. INTEGER
casting /'kæstɪŋ/	**Casting** changes a value from one type to another, such as int("5"). int("5")。
integer division /'ɪntɪdʒə dɪ'vɪʒn/	**Integer division** gives a whole number: 7 // 2 is 3. 7 // 2 3
modulo	**Modulo** gives the remainder: 7 % 2 is 1. 7 % 2 1
string /strɪŋ/	"Hello" is a **string**. "Hello"
immutable /ɪ'mju:təbl/	An **immutable** value cannot be changed after it is made.
concatenation /kən,kætə'neɪʃn/	**Concatenation** joins strings: "ab" + "cd" gives "abcd". "ab" + "cd" "abcd"
exception /ek'sepʃn/	Dividing by zero raises an **exception**.
trace table /treɪs 'teɪbl/	A **trace table** shows the value of each variable at each step.
debugger /'di:bʌgə/	The **debugger** helps you find mistakes.
static data structure	A **static data structure** has a fixed size.

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dynamic data structure	A **dynamic data structure** can grow and shrink.
array /ə'reɪ/	An **array** stores many values under one name.
index /'ɪndeks/	Use **index** 3 to read the third item in the array. 3
two-dimensional array	A **two-dimensional array** stores data in rows and columns.
abstract data type /'æbstrækt 'deɪtə taɪp/	A stack is an **abstract data type**: we know what it does, not how it is built.
LIFO /'laɪfəʊ/	A stack is **LIFO**: last in, first out.
FIFO /'faɪfəʊ/	A queue is **FIFO**: first in, first out.
underflow /ˌʌndə'fləʊ/	Popping from an empty stack causes **underflow**.
overflow /ˌəʊvə'fləʊ/	Adding 200 and 100 in one byte causes **overflow**. 200 100
sequence /'si:kwəns/	In a **sequence**, the steps run one after another.
selection /sɪ'lekʃn/	An IF statement is a kind of **selection**. IF
iteration /ˌɪtə'reɪʃn/	A loop is a kind of **iteration**.
infinite loop /'ɪnfɪnət lu:p/	while True: with no break makes an **infinite loop**. while True: break
function /'fʌŋkʃn/	A **function** returns a value.
parameter /pə'ræmɪtə/	In def area(width, height), width is a **parameter**. def area(width, height) width

Word	Example
return /rɪˈtɜːn/	**Return** sends a value back from the function.
modularity /ˌmɒdjʊˈlærɪti/	**Modularity** lets one layer change without changing the others.
local variable /ˈləʊkl ˈveərɪəbl/	A **local variable** is used only inside its procedure.
global variable /ˈgləʊbl ˈveərɪəbl/	A **global variable** can be used anywhere in the program.
boundary case /ˈbaʊndəri keɪs/	A **boundary case** tests a value at the edge of the allowed range.
Big O notation	**Big O notation** describes how running time grows with input size.
linear search /ˈlɪnɪə sɜːtʃ/	A **linear search** checks each item one by one.
binary search /ˈbaɪnəri sɜːtʃ/	**Binary search** halves the list each time.
bubble sort /ˈbʌbl sɔːt/	**Bubble sort** swaps two items next to each other if they are in the wrong order.
selection sort /sɪˈlekʃn sɔːt/	**Selection sort** finds the smallest item and puts it first.
file /faɪl/	Save the scores in a **file**.
mode /məʊd/	The **mode** “r” opens a file for reading, and “w” for writing. “r” “w”
recursive function	A **recursive function** calls itself.
base case /beɪs keɪs/	The **base case** stops the recursion.

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recursive case /rɪˈkɜːsɪv keɪs/	In the **recursive case**, the function calls itself again.
call stack /kɔːl stæk/	Each function call is added to the **call stack**.
stack overflow /stæk ˌəʊvəˈfləʊ/	Recursion with no base case causes a **stack overflow**.
quicksort	**Quicksort** splits the list around a pivot.