# Programming

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

| Word | Example |
|---|---|
| **variable** /'veərɪəbl/ | A **variable** stores a value that can change. |
| **constant** /'kɒnstənt/ | A **constant** such as Pi never changes.<br>Pi |
| **data type** /'deɪtə taɪp/ | INTEGER is a **data type**.<br>INTEGER |
| **casting** /'kæstɪŋ/ | **Casting** changes a value from one type to another, such as int("5").<br><br>int("5")。 |
| **integer division** /'ɪntɪdʒə dɪ'vɪʒn/ | **Integer division** gives a whole number: 7 // 2 is 3.<br>7 // 2 3 |
| **modulo** | **Modulo** gives the remainder: 7 % 2 is 1.<br>7 % 2 1 |
| **string** /strɪŋ/ | "Hello" is a **string**.<br>"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".<br>"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** /əˈreɪ/ | An **array** stores many values under one name. |
| **index** /ˈɪndeks/ | Use **index** 3 to read the third item in the array.<br>3 |
| **two-dimensional array** | A **two-dimensional array** stores data in rows and columns. |
| **abstract data type**<br>/ˈæbstrækt ˈdeɪtə taɪp/ | A stack is an **abstract data type**: we know what it does, not how it is built. |
| **LIFO** /ˈlaɪfəʊ/ | A stack is **LIFO**: last in, first out. |
| **FIFO** /ˈfaɪfəʊ/ | A queue is **FIFO**: first in, first out. |
| **underflow** /ˌʌndəˈfləʊ/ | Popping from an empty stack causes **underflow**. |
| **overflow** /ˌəʊvəˈfləʊ/ | Adding 200 and 100 in one byte causes **overflow**.<br>200 100 |
| **sequence** /ˈsiːkwəns/ | In a **sequence**, the steps run one after another. |
| **selection** /sɪˈlekʃn/ | An IF statement is a kind of **selection**.<br>IF |
| **iteration** /ˌɪtəˈreɪʃn/ | A loop is a kind of **iteration**. |
| **infinite loop** /ˈɪnfɪnət luːp/ | while True: with no break makes an **infinite loop**.<br>while True: break |
| **function** /ˈfʌŋkʃn/ | A **function** returns a value. |
| **parameter** /pəˈræmɪtə/ | In def area(width, height), width is a **parameter**.<br>def area(width, height) width |



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| **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. |
| **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.<br>“r” “w” |
| **Big O notation** | **Big O notation** describes how running time grows with input size. |



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