

1. 算法 (Algorithm)

Algorithm is a set of clear ordered steps, which produces results and terminates in finite time.

----*Foundations of computer science*

In mathematics and computer science, an algorithm is a self-contained step-by-step set of operations to be performed. Algorithms perform calculation, data processing, and/or automated reasoning tasks.

----*Wikipedia*

An algorithm is any well-defined computational procedure that takes some value, or set of values, as input and produces some value, or set of values, as output. An algorithm is thus a sequence of computation steps that transform the input into the output.

----*Introduction to Algorithms*

算法是一组明确步骤的有序集合，它产生结果并在有限时间内终止。

----*计算机科学导论*

广义的来说，为解决一个问题而采取的方法和步骤，称之为算法，对计算机操作的描述。

----*C 程序设计 (谭浩强)*

算法是定义一个可终止过程的一组有序的、无歧义的、可执行步骤的集合。

----*计算机导论*

非形式来说，算法就是任何良定义的计算过程，该过程取某个值或值的集合作为输入并产生某个值或值的集合作为输出。也可以看作是用于求解良说明的计算问题的工具。

----*算法导论*

2. 代码 (Code)

In computing, source code is any collection of computer instructions, (possibly with comments), written using a human-readable computer language, usually as ordinary text. The source code of a program is specially designed to facilitate the work of computer programmers, who specify the actions to be performed by a computer mostly by writing source code.

----*Programming in C: A Tutorial*

Source code (also referred to as source or code) is the version of software as it is originally written (i.e., typed into a computer) by a human in plain text (i.e., human readable alphanumeric characters).

----*The Linux Information Project. "Source Code Definition"*

代码就是程序员用开发工具所支持的语言写出来的源文件，是一组由字符、符号或信号码元以离散形式表示信息的明确的规则体系。

---- 百度百科

3. Javascript 语言

Javascript is a high-level, dynamic, untyped, and interpreted programming language. It has been standardized in the ECMAScript language specification. Alongside HTML and CSS, it is one of the three core technologies of World Wide Web content production; the majority of websites employ it and it is supported by all modern Web browsers without plug-ins. JavaScript is prototype-based with first-class functions, making it a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles. It has an API for working with text, arrays, dates and regular expressions, but does not include any I/O, such as networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded.

---- *JavaScript: The Definitive Guide*

JavaScript is a programming language commonly used in web development. JavaScript is a client-side scripting language, which means the source code is processed by the client's web browser rather than on the web server. This means JavaScript functions can run after a webpage has loaded without communicating with the server.

---- *The Tech Terms Computer Dictionary*

JavaScript 语言可用于 HTML 和 eb，更可广泛用于服务器、PC、笔记本电脑、平板电脑和智能手机等设备。JavaScript 是一种轻量级的编程语言。JavaScript 是可插入 HTML 页面的编程代码。JavaScript 插入 HTML 页面后，可由所有的现代浏览器执行。

---- *JavaScript W3C*

4. 程序变量 (Variable)

Variables are names for memory location. Each memory location in a computer has an address. Although the address are used by the computer internally, it is very inconvenient for the programmer to use the address for two reasons. First, the programmer does not know the relative address of the data item in memory. Second, a data item may occupy more than one location in memory. Name, as a substitute of addresses, free the programmer to think at the level at which the program is executed.

---- *Foundation of computer science*

In computer programming, a variable or scalar is a storage location paired with an associated symbolic name (an identifier), which contains some known or unknown quantity of information referred to as a value. The variable name is the usual way to reference the stored value; this separation of name and content allows the name to be used independently of the exact information it represents. The identifier in computer source code can be bound to a value during run time, and the value of the variable may thus change during the course of program execution.

----*Computer Application*

Variables are used to store information to be referenced and manipulated in a computer program. They also provide a way of labeling data with a descriptive name, so our programs can be understood more clearly by the reader and ourselves. It is helpful to think of variables as containers that hold information. Their sole purpose is to label and store data in memory. This data can then be used throughout your program.

----*Introduction to programming*

变量是一个有名字的、具有特定数据类型的一个存储单元，用来存储数据，也就是存放数据的值，在程序运行期间，变量的值是可以改编的。

---- *C 程序设计*（谭浩强）

变量是存储单元的名字，每个内存单元在计算机中都有一个地址。虽然计算机内部使用地址，但对程序员而言十分不方便。首先，程序员不知道数据和程序放在内存的什么位置。其次，数据项在内存中可能占据多个地址。名字（作为地址的替代）使程序员解放出来，只需在程序如何执行的层次上考虑。

----*计算机科学导论*

5. 程序 (Program)

A computer program is a collection of instructions that performs a specific task when executed by a computer. A computer requires programs to function, and typically executes the program's instructions in a central processing unit.

---- *Advanced unix programming*

程序是指为了得到某种结果而可以由计算机等具有信息处理能力的装置执行的代码化指令序列，或者可以被自动转换成代码化指令序列的符号化指令序列或者符号化语句序列。

----*计算机软件保护条例*

6. 计算机语言 (Computer Language)

A computer language is a set of predefined words that are combined into a program according to predefined rules.

---- *Foundation of computer science*

计算机语言，人与人交流需要语言，同样，人与计算机交流同样需要语言，需要一种计算机和人能够识别的语言，这就是计算机语言。

---- *C 程序设计*（谭浩强）

计算机语言是指在编写程序时，根据事先定义的规则而写出的预定语句的集合。

----*计算机科学导论*

7. 程序调试 (Debugging)

Debugging is the process of finding and resolving of defects that prevent correct

operation of computer software or a system. Debugging tends to be harder when various subsystems are tightly coupled, as changes in one may cause bugs to emerge in another.

---- *Wikipedia*

程序调试，是将编制的程序投入实际运行前，用手工或编译程序等方法进行测试，修正语法错误和逻辑错误的过程。这是保证计算机信息系统正确性的必不可少的步骤。编完计算机程序，必须送入计算机中测试。

---- *大学计算机应用基础*

8. 语法 (grammar)

A grammar (when the context is not given, often called a formal grammar for clarity) is a set of production rules for strings in a formal language. The rules describe how to form strings from the language's alphabet that are valid according to the language's syntax. A grammar does not describe the meaning of the strings or what can be done with them in whatever context—only their form

---- *Formal Languages and Computation: Models and Their Applications*

Grammar: a set of predefined language rules.

---- *Foundation of computer science*

语法，每一种编程语言都有一系列规则，描述在那种语言中什么样的字符串被认为是有效程序。这些规则定义了这种语言的语法。通过语言的语法规则，我们能将像 $y = x + 1$ 这样可能有效的程序与像 $>/;x:1@4$ 这样毫无意义的字符串区分开。

---- *CSDN*

9. 像素 (Pixel)

The word is a combination of pix, for picture, and element.

---- *A brief history of 'pixel'(Richard F. Lyon)*

In digital imaging, a pixel, pel, dots or picture element is a physical point in a raster image, or the smallest addressable element in an all points addressable display device; so it is the smallest controllable element of a picture represented on the screen.

---- *Fundamentals of Interactive Computer Graphics (Foley, J. D.)*

Each pixel is a sample of an original image; more samples typically provide more accurate representations of the original.

---- *Wikipedia*

像素，为视频显示的基本单位，译自英文“pixel”，pix 是英语单词 picture 的常用简写，加上英语单词“元素”element，就得到 pixel，故“像素”表示“画像元素”之意。

---- *像素简史 (Richard F. Lyon)*

在数字成像中，像素是一个在光栅图像中的物理点，或最小的可寻址单元在一个全点可寻址显示装置；所以它是屏幕上的一张图片所代表的最小可控单元。

----*交互式计算机图形学基础 (Foley, J. D.)*

每个像素是原始图像的一个样本，更多的样品通常提供对原始图像更准确的表示。

----*维基百科*

10. 原色 (Primary Color)

Primary colors are sets of colors that can be combined to make a useful range of colors.

----*Wikipedia*

原色是一组可以组合成一系列颜色的颜色集合。

----*维基百科*

11. 函数 (Function)

In computer programming, a **function** is a sequence of program instructions that perform a specific task, packaged as a unit. In different programming languages, a function may be called a **procedure**, a **subroutine**, a method, or a **subprogram**.

----*Wikipedia*

A function is a block of code with a name. We execute the code by calling the function.

----*C++ Primer (Stanley B. Lippman)*

在计算机编程中，函数是一系列的完成某个特定任务的程序指令打包成的一个单位。在不同的编程语言中，函数可能被叫做过程，子程式，方法或者子程序。

----*维基百科*

一个大的程序一般应分为若干个程序模块，每个模块实现一个特定的功能，这些模块成为子程序，在 C 语言中子程序用函数实现。

----*C 语言程序设计 (谭浩强)*

函数是一个命名了的代码块，我们通过调用函数来执行相应代码。

----*C++ Primer 中文版 (Stanley B. Lippman)*

12. 循环 (Loop)

A loop is a sequence of statements which is specified once but which may be carried out several times in succession. The code "inside" the loop (the *body* of the loop, shown below as *xxx*) is obeyed a specified number of times, or once for each of a collection of items, or until some condition is met, or indefinitely.

----*Wikipedia*

循环是一段在程式中只出现一次，但可能会连续执行多次的程式码。回圈中的程式码会执行特定的次数，或者是执行到特定条件成立时结束回圈，或者是针对某一集合中的所有项目都执行一次。

----*维基百科*

13. 表达式 (Expression)

An expression is a sequence of operands and operators that reduces a single value.

----*Foundations of computer science*

An expression is any valid unit of code that resolves to a value.

----*Javascript expressions*

An expression in a programming language is a combination of one or more explicit values, constants, variables, operators, and functions that the programming language interprets (according to its particular rules of precedence and of association) and computes to produce ("to return", in a stateful environment) another value. This process, as for mathematical expressions, is called evaluation.

---- *Wikipedia*

表达式是由一系列操作数和运算符简化后的一个单一数值。

----*计算机科学导论*

表达式，是由数字、算符、数字分组符号（括号）、自由变量和约束变量等以能求得数值的有意义排列方法所得的组合。

----*百度百科*

14. if 语句

Most imperative languages have two-way and multi-way selection statements. Two-way selection is achieved through the if-else statement, multi-way selection through the switch (or case) statement. The UML diagram and the code for the if-else statement is shown in figure1. In an if-else statement, if the condition is true, statement 1 is executed, while if the condition is false, statement 2 is executed. Both statement 1 and 2 can be any type of statement, including a null statement or a compound statement. Figure1 also show the code for the switch (or case) statement. The value of C(a, b or c) decide which statement1, statement2, or statement3 is executed.

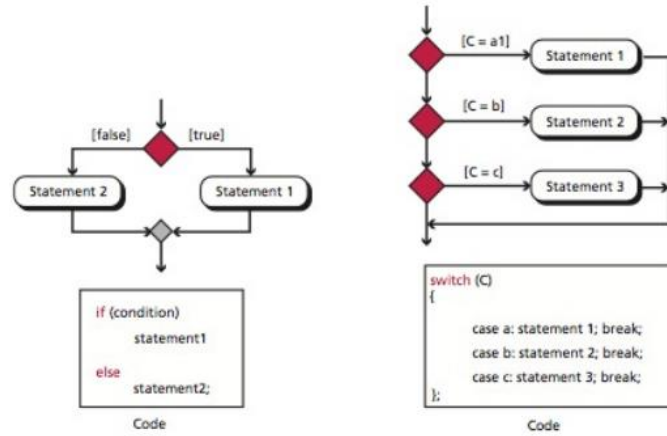


Figure1 If-else statement and switch (or case) statement
----Foundations of computer science

大多数强制性语言都有两路和多路选择语句。两路选择通过 if-else 语句取得，多路选择通过 switch(或 case)语句取得。图 1 显示了 if-else 语句的 UML 图和代码。在 if-else 语句中，如果条件为真，语句 1 被执行，如果条件为假，语句 2 被执行。语句 1 和语句 2 可以是任何类型的语句，包括空语句和复合语句。图 1 还显示了 switch(或 case)语句的代码。C 的值决定了语句 1、语句 2 和语句 3 中哪一个被执行。

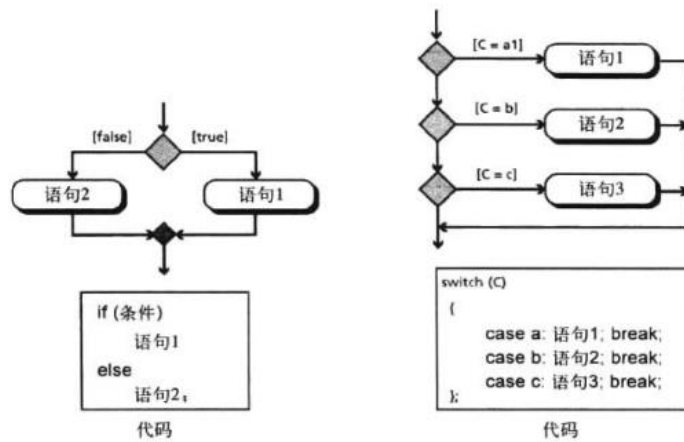


图 1 两路和多路判断

----计算机科学导论