



# L

## LANGUAGE CONSTRUCT

Programming languages have several structures built into them for managing often-used operations. One such structure is the keyword, in which a word like PRINT is always used to indicate the process of sending information to the video display. Generally, a keyword is fairly simple and refers to a single action.

By extension, languages must have *constructs*, or built-in routines, for more sophisticated operations, or for sets of operations that accomplish a specified task. An example of this is a loop construct, such as a FOR...NEXT loop. The actual operations to be looped are defined by the programmer, but the ability to execute a loop itself is inherent in the language.

The essentials of any computer language are assignment, decision, addressing and input/output constructs — BASIC, for example, has =, IF...THEN, line numbers, INPUT and PRINT.

## LASER PRINTER

A *laser printer* is a high-speed, high-quality device that uses a laser beam to write characters onto an electrically charged light-sensitive surface. The characters are formed from a matrix of many densely-packed dots, and are then beamed onto the photographic surface. This creates a character pattern with an electrical charge. The charged pattern attracts a toner, thus 'developing' the character image. The image is transferred to paper by heat or pressure, and fixed there by passing the paper through a chemical vapour bath. This process is very similar to that used in many office copying machines. Laser printers have full graphics and colour capabilities, and can produce many different typesyles.

## LCD

Liquid crystal displays, or *LCDs*, are becoming increasingly popular as video display units for microcomputers. An LCD consists of a seven-segment display, where each segment is filled with a transparent liquid. The display is sandwiched between two electrodes, with a reflective backing material and a clear cover. When current is applied to the electrodes, the liquid in the affected segment becomes opaque, forming a solid bar. The main advantages of LCDs for

### A Slice Of Light

The LCD comprises two polarised glass filters sandwiching a very thin layer of liquid crystal. Behind this 'sandwich' is an array of electrodes, which trace out the shapes of the characters. When current is applied to the crystal through the appropriate electrodes, the alignment of the molecules in the overlying liquid crystal changes, making the character shape stand out from the background

microcomputers are the small amount of space they need, and their minimal power requirements. These factors make LCDs ideally suited to use in portable computers. Their major disadvantage is lack of speed: a fast typist can type several characters in the time it takes for the LCD to register the first keypress.

## LED

An *LED* is a semiconductor diode that emits light when a current is applied — the initials stand for 'Light Emitting Diode'. Single LEDs, usually red in colour, are often used as warning or informational signals on computer consoles. Like LCDs, LEDs can be combined into a block pattern of seven segments to create alphanumeric characters. This type of display is commonly used on pocket calculators. However, because the power requirements of LEDs are greater than those of a liquid crystal display, LEDs are gradually being phased out in favour of LCDs.

## LEXICAL ANALYSER

Because computers have to handle data in certain very specific ways, language compilers must have a special set of routines that take data and alter it to fit the structure needed by the CPU. A *lexical analyser* is such a set of routines; it breaks statements into their component parts — recognised by the analyser as tokens — separating variable names from commands, and so forth. It also adjusts spacing, removing unnecessary spaces and characters, and replacing upper case letters with lower case, or vice versa, as demanded by the compiler.

## LIFO

An acronym for 'Last In First Out', *LIFO* refers to the way in which information is stored in a stack. The last item placed in the stack is the first to be removed. The classic analogy relates this process to a stack of plates held in a spring-loaded tray. The top plate is the first used. When it has been removed from the stack, the rest of the plates move up one position. In computer terms, this action is called a *pop*. Adding plates on top presses the rest of the stack down; this is referred to as a *push*. LIFO stacks are commonly used in text buffers. (See also FIFO, page 576.)

