Pl1 Programming Language Encyclopedia Article

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Pl1 Programming Language

The PL1 **programming** language is a third-generation, procedural programming language that bears some resemblance to **FORTRAN** and **BASIC**. It is a general-purpose programming language that is versatile enough to be used in commercial, scientific, and technical applications.

PL1 was developed by **IBM** in the early 1960s in an attempt to combine the best features of Algol, FORTRAN, and **COBOL** into a new, all-purpose language. It was originally named New Programming Language (NPL) but was soon changed to PL1 to avoid confusion with the National Physical Laboratory in England.

PL1 is a comprehensive language that includes a number of common programming concepts. It is block-oriented, which helps programmers modularize their applications. PL1 supports standard control structures such as SELECT-WHEN-OTHERWISE and DO-WHILE. There is also built-in support for many common functions, including arithmetic computation, mathematical computation, **string** manipulation, **precision** handling, input/output (I/O), storage control, and date/time manipulation.

In addition to containing many of the best features of other programming languages, PL1 also has some unique features. The language is freeform text and has no reserved keywords. There are some words with specific meanings in specific instances, but PL1 determines the meaning of words from the context of their use. In addition PL1 defines the precision of its **data types** without regard to the operating system or **hardware**. These precision data types include real, complex, floating-point, fixed-point, signed, unsigned, binary, decimal, character, **bit**, graphic, and string.

Another one of PL1's novel features is the definition of four different storage classes. The data type of an **object** usually determines whether to use automatic, **static**, controlled, or based storage. The default storage **class** is automatic, which is allocated on entry to a block and freed upon exit. Static storage exists throughout the life of the program. Controlled storage must be explicitly allocated by the program. Based storage provides a mapping for storage otherwise allocated or referenced, or may also be explicitly allocated and freed.

One of PL1's strongest areas is **exception handling** of error conditions detected by hardware, PL1 itself, or the operating system. PL1 allows exceptions to be intercepted and handled without interrupting execution of the program.

In order to serve a variety of programming purposes, PL1 evolved into a complex language. The complexity of the language as well as the supporting tools and diagnostics made writing and **debugging** PL1 programs somewhat burdensome. As newer programming languages have arrived, the popularity of PL1 has declined.