

PROGRAMMING LANGUAGE C

O. Minyaylo – Sumy State University, group IP – 12
S.V. Mikhno – ELA

C is a general-purpose computer programming language developed between 1969 and 1973 by Dennis Ritchie at the Bell Telephone Laboratories for use with the Unix operating system.

It was named "C" because its features were derived from an earlier language called "[B](#)", which according to [Ken Thompson](#) was a stripped-down version of the [BCPL](#) programming language.

In 1978, [Brian Kernighan](#) and [Dennis Ritchie](#) published the first edition of [The C Programming Language](#). This book, known to C programmers as "K&R", served for many years as an informal [specification](#) of the language.

K&R introduced several language features: standard I/O library, long int data type, unsigned int data type, compound assignment operators of the form *=op* .

Although C was designed for implementing system software, it is also widely used for developing application software.

The C language also exhibits the following characteristics:

- There are a small, fixed number of keywords, including a full set of [flow of control](#) primitives.
- There are a large number of arithmetical and logical operators.
- [Declaration](#) syntax mimics usage context.
- User-defined and compound types are possible.
- Low-level access to [computer memory](#) is possible by converting machine addresses to typed [pointers](#).
- [Procedures](#) (subroutines not returning values) are a special case of function, with a dummy return type void.
- Functions may not be defined within the lexical scope of other functions.
- Function and data pointers permit *ad hoc* [run-time polymorphism](#).
- A [preprocessor](#) performs [macro](#) definition, [source code](#) file inclusion, and conditional compilation.
- There is a basic form of [modularity](#): files can be compiled separately and [linked](#) together, with control over which functions and data objects are visible to other files via static and extern attributes.
- Complex functionality such as [I/O](#), [string](#) manipulation, and mathematical functions are consistently delegated to [library routines](#).

So, C is one of the most widely used programming languages of all time and there are very few computer architectures for which a C compiler does not exist.

C has greatly influenced many other popular programming languages, most notably C++, which began as an extension to C.