

An introduction to C

History

“C was originally developed by Dennis Ritchie between 1969 and 1973 at AT&T Bell Labs, and used to re-implement the Unix operating system”

[https://en.wikipedia.org/wiki/C_\(programming_language\)](https://en.wikipedia.org/wiki/C_(programming_language))

History

“It was designed to be compiled using a relatively straightforward compiler, to provide low-level access to memory, to provide language constructs that map efficiently to machine instructions, and to require minimal run-time support. C was therefore useful for many applications that had formerly been coded in assembly language, such as in system programming.”

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History

“Despite its low-level capabilities, the language was designed to encourage cross-platform programming. A standards-compliant and portably written C program can be compiled for a very wide variety of computer platforms and operating systems with few changes to its source code. The language has become available on a very wide range of platforms, from embedded microcontrollers to supercomputers.”

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History

heavily influenced by ALGOL 60 () => CPL (60's) -> BCPL (66) => B (~69) => C (69-73)

“Many later languages have borrowed directly or indirectly from C, including **C++**, **D**, **Go**, **Rust**, **Java**, **JavaScript**, **Limbo**, **LPC**, **C#**, **Objective-C**, **Perl**, **PHP**, **Python**, **Verilog** (hardware description language),[4] and Unix's C shell. These languages have drawn many of their control structures and other basic features from C.” -

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History

1978 - K&R, the C book

70's, 80's various C version

1989 ANSI C, Standard C, C89

1990 ISO, C90 (same as C89)

1999 C99

2011 C11

Hello world

```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```

“And now då?”

“C is widely used for "system programming", including implementing operating systems and embedded system applications... ”

“One consequence of C's wide availability and efficiency is that compilers, libraries, and interpreters of other programming languages are often implemented in C.”

“C is sometimes used as an intermediate language by implementations of other languages.”

“C has also been widely used to implement end-user applications, but much of that development has shifted to newer, higher-level languages.”

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International Obfuscated C Code Contest

```
#define __(...) (
                                $(n,i,t))(\
$(ze,si,of)(($(n,i,t)[]) { _$(), ##__VA_ARGS__})/$(ze,si,of) ($(n,i,t))-__$())

$(n,i,t) (*____) ($(n,i,t)) = $(tch, pu, ar); $(ub,do,le) _<::> $_$_ <%

-2, 1, -1.3, 1.3 /* <-- Configure here: X1, X2, Y1, Y2 */

,__$(), _$(),_$( ),_$( ),_$( ) ,__$(), __(' ',' ',' ',' ',' ',' ',' ',' ',' ') * _$_() ,( _$_()
- __(' ','_')) * _$_(), _$(),_$( ),_$( ),__('_','_')*__('_','_','_','_','_','_') *
__('_','_','_','_','_')*__('_','_','_','_','_')+__('_','_','_','_','_','_')
, __('_','_','_','_','_','_','_','_','_'), _$() m(i,a,u) ($(n,i,t) $_)<% $_ (f,i) (
..... http://www.ioccc.org/2014/deak/prog.c
```