

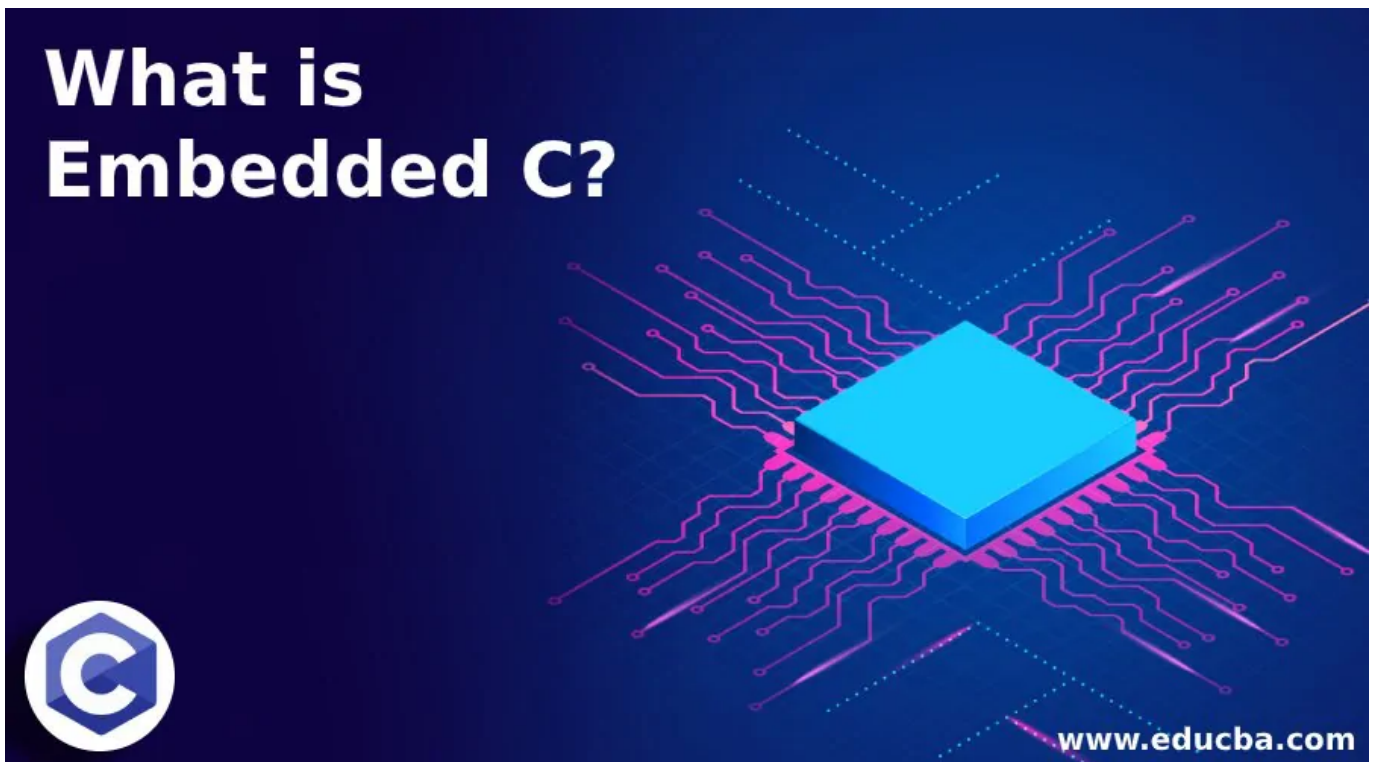


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Introduction to Embedded C

In the development of embedded systems Embedded C is one of the most common and programming languages. So we can see some of Embedded C's basics and Embedded C's programming framework in this post. It is probably the most common language for Embedded





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- A device that has both hardware and software and is configured to carry out a particular task can best be described as an embedding device.
- A Washing Machine is a strong instance of an embedded device for many households. Embedded Systems can be part of a much broader framework not just stand-alone devices such as washing machines.
- One example is a car. A modern car offers many embedded systems that perform their particular tasks in order to make a safe, smooth ride.
- Any of the built-in systems of a vehicle are an anti-lock braking (ABS), an automatic climate control system, a tyre pressure monitoring system, a power level monitoring system, etc. Oil level monitoring systems.

Data Types in Embedded C

- C Programming Language Data Types (or any programming language in this respect) allow us to declare program variables.
- In C Programming Language there are many types of data such as signed, float, signed char, unsigned char, unsigned int, double. Besides these, it includes several more data types.

What is Embedded C?

The C Computer Language is the most common and used programming language developed by Dennis Ritchie in the late 1960s and early 1970s. A complicated compiler (the software that converts programs into a machine code) and efficient mapping to creator instructions provided





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The C programming language provides Embedded C Programming Language is an extension of C Program Language that is commonly used in designing Embedded Systems. It uses the same syntax and grammar as the key function variables, loops, data type declaration, functions, statements etc. It is evident from the above declaration that an Embedded Device software component is equally important for the hardware component. Advanced hardware modules with poorly written programs (Software) are useless.

The following are the additional data types for the Keil's Cx51 Compiler:

- Sfr
- Bit
- Sfr16
- Sbit

Component of C Embedded

Given below is the component:

Preprocessor Directive

A preprocessor directive in it is an indication for the compiler that symbols not specified by the program must be looked into in this file. We usually use a preprocessor directive in Embedded C Programming to denote the microcontroller-specific header file that contains all SFRs and the bits in those SFRs.

Main Function: Each program with C or Embedded C has a main function from which the program execution starts.





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Global Variables: As the name suggests, Global Variables are External to the program i.e. everywhere in a program is available.

Keywords of C

A keyword (a language that is used as a method for translating the language written in C to Machine Code) is a special term with a specific significance for a compiler.

When, for instance, we take the Keil Compiler, Cx51 (a common 8051 based compiler), keywords are:





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Factors for Selecting the Programming Language

These are just a few factors which must be taken into account when selecting Program Language for Embedded Systems development.

- **Speed:** The programs must run as quickly as possible, i.e. Owing to slow operation of applications, the hardware should not be slowed down.
- **Size:** The memory occupied with the program is very critical because the amount of ROM is very small with embedded processors like microcontrollers.

Differences of C and C Embedded

- Actually, aside from the few extensions and the working environment, there is not much difference between C and Embedded C.
- The two ISO standards C and Embedded C have almost, datatypes, identical syntax, functions, etc.
- Embedded C is essentially an extension of the standard C programming language with additional functions such as I / O address, arithmetic fixed point and multiple memory addressing and etc.

Recommended Articles

This is a guide to What is Embedded C? Here we discuss what is embedded system? different types, what is embedded c? components, keywords of c, differences. You may also have a look at the following articles to learn more –





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