



C++

Programming Step-by-Step

Asadullah Shah



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C++ PROGRAMMING: STEP BY STEP

Editors

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14. CALL-BY-VALUE AND REFERENCE

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Abstract

Calling of parameters by a function is by value or by reference. Parameters can pass to a calling function of called function values. Another way is referencing the memory address of the called function to a calling function. Both approaches are equally used and important.

14.1 Call-by-Value and Call-by-Reference

When a function is called and copies of the parameters are passed in as discussed in the previous previously in chapter 13, it is known as **call-by-value**. Another way to pass a parameter is to call-by-reference. When a parameter is passed **call-by-reference** the address of the original memory location is passed to the function. Call by reference is a memory efficient method. The calling function may change the the contents of that memory location. This way is very efficient for memory usage and duplication of memory space is avoided by keeping the contents of the locations at a single place. Its drawback is an accidentally changing contents cause loss of original parameters.

14.2 Global Variables

As name suggests a global variable is visible everywhere not only within a particular function. A variable that is visible to a lower level module is called a global variable A global variable is visible by all modules and any module can change its value. The program in figure 14.1 describes further for global variables.