

CTYPE.H

Some useful ANSI C and C++ Library Functions

Many of the tools needed by C and C++ programmers are not part of the language itself, but are provided by standard **library functions**. In theory, each C++ compiler vendor can decide what library functions to provide. In practice, there is a great deal of standardization. One universally provided C++ library is the iostream library, which contains numerous useful input and output routines. Recall that library functions are made available in your programs by using a preprocessor directive, `#include <filename>`, where `<filename>` represents the name of the header file or other file that contains the desired library function prototypes.

Below are descriptions of some commonly used library functions. These are ANSI C functions so they can be used in either C or C++ programs. The function prototypes may differ slightly from implementation. For more information on any of the library functions, use the built in help that the system has.

Character Functions: ctype.h

Contains prototypes of functions that are useful in testing and manipulating characters. This header file needs not be included if using .NET, but in other compilers you need to include this file along with the others.

In the prototypes below, Ch is presumed to be a char variable, even though the prototypes says it is an int (remember, a char variable is just an 8 bit integer). The abbreviation “iff” stands for “if and only if”. As always, “true” simply means a non-zero value.

<code>int isalnum(int Ch)</code>	Returns true iff Ch is an alphabetic char or a char in ‘0’.. ‘9’
<code>int isalpha(int Ch)</code>	Returns true iff Ch is an alphabetic
<code>int isdigit(int Ch)</code>	Returns true iff Ch is a ‘0’.. ‘9’
<code>int islower(int Ch)</code>	Returns true iff Ch is a lowercase alphabetic char
<code>int isupper(int Ch)</code>	Returns true iff Ch is an uppercase alphabetic char
<code>int ispunct(int Ch)</code>	Returns true iff Ch is not alphanumeric and not a white space
<code>int isspace(int Ch)</code>	Returns true iff Ch is a space, newline, formfeed, return, tab or vertical tab character
<code>int tolower(int Ch)</code>	Returns the corresponding lowercase version of Ch if Ch is an uppercase character, otherwise returns Ch
<code>int toupper(int Ch)</code>	Returns corresponding uppercase version of Ch if Ch is an lowercase character, otherwise returns Ch

There are other functions also found in the ctype.h header file that are not described above.