

# Standard and Non-Standard Libraries in C/C++

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## 1 Standard Libraries in C

By convention, libraries in C have a `.h` extension. For a complete listing of ANSI-ISO standard libraries in C please see [1]. As an example, *conio.h* is not part of the standard C and isn't guaranteed to be available or work with all compilers.

## 2 Standard Libraries in C++

Standard libraries in C++ do not have any extension, e.g. *iostream*, *fstream*. Note that *iostream.h* is not a standard C++ header. Standard C header files in C++ normally start with a 'c' and without `.h` extension. For example *cstdio*, *cstdlib* etc. For a complete listing of standard C++ libraries see [2].

## 3 namespace std in C++

Following OOP concepts, functions and variables in C++ headers are not part of the global space and are enclosed in *namespace std*. Following comparison illustrates this:

<code>iostream</code>	<code>iostream.h</code>
<code>namespace std</code>	<code>cout</code>
<code>{</code>	<code>cin</code>
<code>    cout</code>	<code>endl</code>
<code>    cin</code>	<code>...</code>
<code>    endl</code>	<code>...</code>
<code>    ...</code>	<code>...</code>
<code>}</code>	

Members of `std` namespace can be accessed with the scope resolution operator, e.g. `std::cin`, `std::cout` etc. A `using` directive can be used to access a particular function or object without the need to use scope resolution operator with every usage, e.g. `using std::cin;`. With a `using namespace std;` directive, all objects and functions within the namespace become globally accessible and this is considered a bad programming practice.

## 4 The string class in C++

The standard header for *string.h* in C++ is *cstring*. Another header *string* is available in C++ and contains the implementation of `string` class. This is completely different from the *string.h* and *cstring* libraries.

## References

- [1] [http://en.wikipedia.org/wiki/C\\_standard\\_library](http://en.wikipedia.org/wiki/C_standard_library).
- [2] [http://en.wikipedia.org/wiki/C2B2B\\_standard\\_library](http://en.wikipedia.org/wiki/C2B2B_standard_library).