

21 The Standard Library

Every program is a part of some other program and rarely fits.

In previous chapters we’ve looked at the C library piecemeal; this chapter focuses on the library as a whole. Section 21.1 lists general guidelines for using the library. It also describes a trick found in some library headers: using a macro to “hide” a function. Section 21.2 gives an overview of each header in the C89 library; Section 21.3 does the same for the new headers in the C99 library.

Later chapters cover the library’s headers in depth, with related headers grouped together into chapters. The `<stddef.h>` and `<stdbool.h>` headers are very brief, so I’ve chosen to discuss them in this chapter (in Sections 21.4 and 21.5, respectively).

21.1 Using the Library

The C89 standard library is divided into 15 parts, with each part described by a header. C99 has an additional nine headers, for a total of 24 (see Table 21.1).

C99

Table 21.1
Standard Library Headers

<code><assert.h></code>	<code><inttypes.h>[†]</code>	<code><signal.h></code>	<code><stdlib.h></code>
<code><complex.h>[†]</code>	<code><iso646.h>[†]</code>	<code><stdarg.h></code>	<code><string.h></code>
<code><ctype.h></code>	<code><limits.h></code>	<code><stdbool.h>[†]</code>	<code><tgmath.h>[†]</code>
<code><errno.h></code>	<code><locale.h></code>	<code><stddef.h></code>	<code><time.h></code>
<code><fenv.h>[†]</code>	<code><math.h></code>	<code><stdint.h>[†]</code>	<code><wchar.h>[†]</code>
<code><float.h></code>	<code><setjmp.h></code>	<code><stdio.h></code>	<code><wctype.h>[†]</code>

[†]C99 only

Most compilers come with a more extensive library that invariably has many headers that don’t appear in Table 21.1. The extra headers aren’t standard, of