wctomb   The wctomb function converts a wide character (the second argument) into a multibyte character, which it stores into the array pointed to by the first argument. wctomb may store as many as MB_LEN_MAX characters in the array, but doesn't append a null character. wctomb returns the number of bytes in the multibyte character or −1 if the wide character doesn't correspond to any valid multibyte character. (Note that wctomb returns 1 if asked to convert a null wide character.)

The following function (also from Plauger's *The Standard C Library*) uses wctomb to determine whether a string of wide characters can be converted to valid multibyte characters:

```
int wccheck(wchar_t *wcs)
{
  char buf[MB_LEN_MAX];
  int n;

  for (wctomb(NULL, 0); ; ++wcs)
    if ((n = wctomb(buf, *wcs)) <= 0)
      return -1;                    /* invalid character */
    else if (buf[n-1] == '\0')
      return 0;                     /* all characters are valid */
}
```

Incidentally, all three functions—mblen, mbtowc, and wctomb—can be used to test whether a multibyte encoding is state-dependent. When passed a null pointer as its char * argument, each function returns a nonzero value if multibyte characters have state-dependent encodings or zero if they don't.

Multibyte/Wide-String Conversion Functions

```
size_t mbstowcs(wchar_t * restrict pwcs,
                const char * restrict s,
                size_t n);                    from <stdlib.h>
size_t wcstombs(char * restrict s,
                const wchar_t * restrict pwcs,
                size_t n);                    from <stdlib.h>
```

The remaining C89 multibyte/wide-character functions convert a string containing multibyte characters to a wide-character string and vice versa. How the conversion is performed depends on the LC_CTYPE category of the current locale.

mbstowcs   The mbstowcs function converts a sequence of multibyte characters into wide characters. The second argument points to an array containing the multibyte characters to be converted. The first argument points to a wide-character array; the third argument limits the number of wide characters that can be stored in the array. mbstowcs stops when it reaches the limit or encounters a null character (which it stores in the wide-character array). It returns the number of array elements modified, not including the terminating null wide character, if any. mbstowcs returns −1 (cast to type size_t) if it encounters an invalid multibyte character.