Formatted Wide-Character Input/Output Functions

```
int fwprintf(FILE * restrict stream,
             const wchar_t * restrict format, ...);
int fwscanf(FILE * restrict stream,
             const wchar_t * restrict format, ...);
int swprintf(wchar_t * restrict s, size_t n,
             const wchar_t * restrict format, ...);
int swscanf(const wchar_t * restrict s,
             const wchar_t * restrict format, ...);
int vfwprintf(FILE * restrict stream,
             const wchar_t * restrict format,
             va_list arg);
int vfwscanf(FILE * restrict stream,
             const wchar_t * restrict format,
             va_list arg);
int vswprintf(wchar_t * restrict s, size_t n,
             const wchar_t * restrict format,
             va_list arg);
int vswscanf(const wchar_t * restrict s,
             const wchar_t * restrict format,
             va_list arg);
int vwprintf(const wchar_t * restrict format,
             va_list arg);
int vwscanf(const wchar_t * restrict format,
             va_list arg);
int wprintf(const wchar_t * restrict format, ...);
int wscanf(const wchar_t * restrict format, ...);
```

The functions in this group are wide-character versions of the formatted input/output functions found in `<stdio.h>` and described in Section 22.3. The `<wchar.h>` functions have arguments of type `wchar_t *` instead of `char *`, but their behavior is mostly the same as the `<stdio.h>` functions. Table 25.11 shows the correspondence between the `<stdio.h>` functions and their wide-character counterparts. Unless mentioned otherwise, each function in the left column behaves the same as the function(s) to its right.

All functions in this group share several characteristics:

■ All have a format string, which consists of *wide* characters.

■ ...`printf` functions, which return the number of characters written, now return the count in *wide* characters.

■ The %n conversion specifier refers to the number of *wide* characters written so far (in the case of a ...`printf` function) or read so far (in the case of a ...`scanf` function).